VOLUME 599 NUMBER 2, PART 3

THE ASTROPHYSICAL JOURNAL 2003 ANNUAL INDEX

BY AUTHORS AND BY SUBJECTS

INDEX TO THE ASTROPHYSICAL JOURNALS

PARTS 1 AND 2

VOLUMES 582 – 599

(2003 January 1 to 2003 December 20)

SUPPLEMENT SERIES

VOLUMES 144 – 149

(2003 January to 2003 December)

PUBLISHED BY THE UNIVERSITY OF CHICAGO PRESS FOR
THE AMERICAN ASTRONOMICAL SOCIETY

THE ASTROPHYSICAL JOURNAL

Founded in 1895 by George E. Hale and James E. Keeler

Published by The University of Chicago Press for the American Astronomical Society

ROBERT C. KENNICUTT, JR.
Editor-in-Chief
Steward Observatory
University of Arizona

CHRISTOPHER SNEDEN
Letters Editor
University of Texas

JAMES W. LIEBERT
Associate Editor-in-Chief
Steward Observatory
University of Arizona

JOHN SCALO
Deputy Letters Editor
University of Texas

Scientific Editors

TIMOTHY BASTIAN
National Radio Astronomy Observatory

W. B. BURTON
University of Leiden & National Radio Astronomy Observatory

KATIA FERRIERE
Observatoire Midi-Pyrenees

DIETER HARTMANN
Clemson University

ERIC HERBST
Ohio State University

JOHN P. HUCHRA
Harvard-Smithsonian Center for Astrophysics

JOHN T. MARISKA
Naval Research Laboratory

JUDITH PIPHER
University of Rochester

JOSEPH C. SHIELDS
Ohio University

SUSAN M. SIMKIN
Michigan State University

LINDA S. SPARKE
University of Wisconsin–Madison

LUIGI STELLA
Osservatorio Astronomico di Roma

PAULA SZKODY
University of Washington

ETHAN T. VISHNIAC
Johns Hopkins University

AAS PUBLICATIONS BOARD

SUMNER STARRFIELD (2002–2005), *Chairperson*
Arizona State University

PATRICK OSMER (2002–2004)
Ohio State University

JANE C. CHARLTON (2002–2004)
Penn State University

MICHAEL F. A'HEARN (2002–2004)
University of Maryland

JEAN TURNER (2000–2003)
University of California, Los Angeles

RAYMOND CARLBERG (2000–2003)
University of Toronto

JUDITH KARPEN (2003–2006)
Naval Research Laboratory

The Astrophysical Journal (ISSN 0004-637X) is published three times a month (in two parts), with an annual index after each year's last volume, for the American Astronomical Society by The University of Chicago Press, 1427 E. 60th Street, Chicago, IL 60637. Volumes consist of two issues each. An author and subject index appears in Part 1 every second month.

Postmaster: Send address changes to THE ASTROPHYSICAL JOURNAL, The University of Chicago Press, P.O. Box 37005, Chicago, IL 60637. Periodicals postage is paid at Chicago, Illinois, and additional mailing offices.

Notice to subscribers: Subscriptions for AAS members are handled directly by the Society. See below for speciic information. All prices include shipping and taxes where applicable.

AAS Members	**U.S.**	**Canada**	**Mexico**	**Rest of World**	
				Surface Mail	*Air Freight*
Paper and Electronic Access	$300	$300	$300	$530	$630
With Supplement	$355	$355	$355	$615	$725
Paper Only	$275	$275	$275	$505	$605
With Supplement	$290	$290	$290	$590	$700
Electronic Access Only *(Includes ApJ & Supplement)*	$50	$50	$50	$50	

All Other Subscribers	**U.S.**	**Canada**	**Mexico**	**Rest of World**	
				Surface Mail	*Air Freight*
Paper and Electronic Access	$1,600	$1,852	$1,740	$1,830	$1,930
With Supplement	$1,870	$2,155.90	$2,025	$2,130	$2,240
Additional paper only copy	$1,400	$1,638	$1,540	$1,630	$1,730
With Supplement	$1,670	$1,941.90	$1,825	$1,930	$2,040
Electronic Access Only	$1,300	$1,300.00	$1,300	$1,300	

Subscriptions are payable in advance and will be entered to start with the first issue of the calendar year. **Single-issue** price for the Journal is $50, including postage. **Non-AAS members:** Please make all remittances payable to THE UNIVERSITY OF CHICAGO PRESS, in United States currency, by postal or express money orders or bank drafts. **AAS members:** Please make checks payable to AAS, in United States currency drawn on a U.S. bank. **Claims for missing issues** should be made within the month following the regular month of publication. The publishers expect to supply missing issues free only when losses have been sustained in transit and when the reserve stock will permit. Non-AAS members: Fax: 773-753-0811, Toll-Free Fax: 877-705-1879. AAS members: Fax: 202-588-1351. **Business correspondence:** Non-AAS members address, THE UNIVERSITY OF CHICAGO PRESS, 1427 E. 60th Street, Chicago, IL 60637, Tel: 773-753-3347, Toll-Free Tel: 877-705-1878; AAS members address, AAS, 2000 Florida Avenue, NW, Suite 400, Washington, DC 20009.

Editorial Offices: *Part 1 and the Supplements:* Dr. Robert C. Kennicutt, Jr., Editor-in-Chief, THE ASTROPHYSICAL JOURNAL, Steward Observatory, 933 N. Cherry Avenue, Tucson, AZ 85721-0065. Telephone: 520-621-5145. *The Letters:* Dr. Christopher Sneden, Letters Editor, THE ASTROPHYSICAL JOURNAL, Department of Astronomy, 1 University Station C1400, Austin, TX 78712-1400. Telephone: 512-471-1008.

The articles in this Journal are indexed in the Science Citation Index, Philadelphia, PA.

© 2004 by the American Astronomical Society. All rights reserved. No part of the Journal may be reproduced in any form or by any means, including electronically, or transmitted by any means without permission in writing from the American Astronomical Society (AAS), except as permitted by applicable copyright law. **Copying:** Single copies of individual articles may be made for private use or research. Copies may be made for classroom use, provided that copies are not made or distributed for profit or commercial advantage and that the copies bear the AAS copyright notice. Authorization is given to copy articles beyond the use permitted by Sections 107 and 108 of the U.S. Copyright Act, provided that the copying fee of $10 per copy per article is paid to the Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923, U.S.A. Authorization does not extend to systematic or multiple reproduction, to copying for promotional purposes, to electronic storage or distribution, or to republication in any form. In all such cases, specific written permission from the AAS must be obtained. **Permission for other use:** Permission is granted for brief quotes from the Journal with the customary acknowledgment of the source. Reprinting a figure, table, or other excerpt requires the consent of one of the authors and notification of the AAS, at the address given below.

Microfilms of complete Journal volumes are available to regular subscribers only and may be obtained at the end of the year. Orders and inquiries should be addressed to Xerox University Microfilms, 300 North Zeeb Road, Ann Arbor, MI 48106.

Address changes: If you change your address, please send notification to the relevant address under "Business correspondence" above and also to your local postmaster. *Please allow four weeks for the change.*

Correspondence related to the Society should be addressed to: Dr. Robert W. Milkey, American Astronomical Society, 2000 Florida Avenue, NW, Suite 400, Washington, DC 20009.

♾ The paper used in this publication meets the minimum requirements of American National Standard for Information Sciences—Permanence of Paper for Printed Library Materials, ANSI Z39.48-1984.

PRINTED IN U.S.A.

THE ASTROPHYSICAL JOURNAL 2003 ANNUAL INDEX

BY AUTHORS AND BY SUBJECTS

INDEX TO THE ASTROPHYSICAL JOURNALS

PARTS 1 AND 2

VOLUMES 582 – 599

(2003 January 1 to 2003 December 20)

SUPPLEMENT SERIES

VOLUMES 144 – 149

(2003 January to 2003 December)

PUBLISHED BY THE UNIVERSITY OF CHICAGO PRESS FOR
THE AMERICAN ASTRONOMICAL SOCIETY

©2003 by The American Astronomical Society. All rights reserved.

Compiled by the staff of The Astrophysical Journal
Typeset using PC TEX
Printed by Cadmus Mack, Easton, Pennsylvania

The paper used in this publication meets the minimum requirements of American National Standard for Information Sciences—Permanence of Paper for Printed Library Materials, ANZI Z39.48–1984.

CONTENTS

AUTHOR INDEX 1
SUBJECT HEADINGS 243
SUBJECT INDEX 247

THE ASTROPHYSICAL JOURNAL

AUTHOR INDEX

AARSETH, S. J. The White Dwarf Deficit in Open Clusters: Dynamical Processes. *M. Fellhauer, D. N. C. Lin, M. Bolte, S. J. Aarseth, & K. A. Williams.* 595, L53 (2003)

ABADI, MARIO G. Simulations of Galaxy Formation in a Λ Cold Dark Matter Universe. I. Dynamical and Photometric Properties of a Simulated Disk Galaxy. *Mario G. Abadi, Julio F. Navarro, Matthias Steinmetz, & Vincent R. Eke.* 591, 499 (2003)

Simulations of Galaxy Formation in a Λ Cold Dark Matter Universe. II. The Fine Structure of Simulated Galactic Disks. *Mario G. Abadi, Julio F. Navarro, Matthias Steinmetz, & Vincent R. Eke.* 597, 21 (2003)

ABAJAS, CRISTINA. See COLLEY, WESLEY N., et al. Around-the-Clock Observations of the Q9057+561A,B Gravitationally Lensed Quasar. II. Results for the Second Observing Season.

ABBET, WILLIAM P. See HAWLEY, SUZANNE L., et al. Multiwavelength Observations of Flares on AD Leonis.

ABBETT, W. P. A Coupled Model for the Emergence of Active Region Magnetic Flux into the Solar Corona. *W. P. Abbett & G. H. Fisher.* 582, 475 (2003)

The Dynamic Evolution of Twisted Magnetic Flux Tubes in a Three-dimensional Convecting Flow. I. Uniformly Buoyant Horizontal Tubes. *Y. Fan, W. P. Abbett, & G. H. Fisher.* 582, 1206 (2003)

ABE, F. See SUMI, T., et al. Microlensing Optical Depth toward the Galactic Bulge from Microlensing Observations during 2000 with Difference Image Analysis.

ABEL, TOM. Numerical Simulations of High-Redshift Star Formation in Dwarf Galaxies. *Konstantinos Tassis, Tom Abel, Greg L. Bryan, & Michael L. Norman.* 587, 13 (2003)

Simulations of Early Structure Formation: Primordial Gas Clouds. *Naoki Yoshida, Tom Abel, Lars Hernquist, & Naoshi Sugiyama.* 592, 645 (2003)

The Influence of Supershells and Galactic Outflows on the Escape of Ionizing Radiation from Dwarf Starburst Galaxies. *Akima Fujita, Crystal L. Martin, Mordecai-Mark Mac Low, & Tom Abel.* 599, 50 (2003)

ABRAHAM, R. G. See CHEN, HSIAO-WEN, et al. The Las Campanas Infrared Survey. IV. The Photometric Redshift Survey and the Rest-Frame R-Band Galaxy Luminosity Function at $0.5 \leq z \leq 1.5$.

ABRAHAM, ROBERTO G. A New Approach to Galaxy Morphology. I. Analysis of the Sloan Digital Sky Survey Early Data Release. *Roberto G. Abraham, Sidney van den Bergh, & Preethi Nair.* 588, 218 (2003)

ABRAMENKO, V. I. Signature of Avalanche in Solar Flares as Measured by Photospheric Magnetic Fields. *V. I. Abramenko, V. B. Yurchyshyn, H. Wang, T. J. Spirock, & P. R. Goode.* 597, 1135 (2003)

ABRAMOWICZ, MAREK A. Three-dimensional Magnetohydrodynamic Simulations of Radiatively Inefficient Accretion Flows. *Igor V. Igumenshchev, Ramesh Narayan, & Marek A. Abramowicz.* 592, 1042 (2003)

ABT, HELMUT A. Post–Main-Sequence Changes in Rotational Velocities. *Helmut A. Abt.* 582, 420 (2003)

ABUTER, R. A Geometric Determination of the Distance to the Galactic Center. *F. Eisenhauer, R. Schödel, R. Genzel, T. Ott, M. Tecza, R. Abuter, A. Eckart, & T. Alexander.* 597, L121 (2003)

ACHAROVA, I. A. Corotation, Stellar Wandering, and Fine Structure of the Galactic Abundance Pattern. *J. R. D. Lépine, I. A. Acharova, & Yu. N. Mishurov.* 589, 210 (2003)

ACKE, B. Explaining UX Orionis Star Variability with Self-shadowed Disks. *C. P. Dullemond, M. E. van den Ancker, B. Acke, & R. van Boekel.* 594, L47 (2003)

ACOSTA-PULIDO, J. A. The Infrared Spectral Energy Distribution of the Seyfert 2 Prototype NGC 5252. *M. Almudena Prieto & J. A. Acosta-Pulido.* 583, 689 (2003)

ACTON, LOREN W. The Relationship Between X-Ray Radiance and Magnetic Flux. *Alexei A. Pevtsov, George H. Fisher, Loren W. Acton, Dana W. Longcope, Christopher M. Johns-Krull, Charles C. Kankelborg, & Thomas R. Metcalf.* 598, 1387 (2003)

ACTON, S. See COLAVITA, M., et al. Observations of DG Tauri with the Keck Interferometer.

ÁDÁMKOVICS, MÁTÉ. Observations of Rotationally Resolved C_3 in Translucent Sight Lines. *Máté Ádámkovics, Geoffrey A. Blake, & Benjamin J. McCall.* 595, 235 (2003)

ADAMS, FRED C. Formation of Supermassive Black Holes in Galactic Bulges: A Rotating Collapse Model Consistent with the M_{BH}-σ Relation. *Fred C. Adams, David S. Graff, Manasse Mbonye, & Douglas O. Richstone.* 591, 125 (2003)

Future Evolution of Cosmic Structure in an Accelerating Universe. *Michael T. Busha, Fred C. Adams, Risa H. Wechsler, & August E. Evrard.* 596, 713 (2003)

ADAMSON, A. J. A Test Case for the Organic Refractory Model of Interstellar Dust. *S. S. Shenoy, D. C. B. Whittet, J. E. Chiar, A. J. Adamson, W. G. Roberge, & G. E. Hassel.* 591, 962 (2003)

ADE, P. A. R. See BENSON, B. A., et al. Peculiar Velocity Limits from Measurements of the Spectrum of the Sunyaev-Zeldovich Effect in Six Clusters of Galaxies.

See CRILL, B. P., et al. BOOMERANG: A Balloon-Borne Millimeter-Wave Telescope and Total Power Receiver for Mapping Anisotropy in the Cosmic Microwave Background.

See RUNYAN, M. C., et al. ACBAR: The Arcminute Cosmology Bolometer Array Receiver.

See GOLDSTEIN, J. H., et al. Estimates of Cosmological Parameters Using the Cosmic Microwave Background Angular Power Spectrum of ACBAR.

See RUHL, J. E., et al. Improved Measurement of the Angular Power Spectrum of Temperature Anisotropy in the Cosmic Microwave Background from Two New Analyses of BOOMERANG Observations.

ADELBERGER, K. See WEBB, T. M., et al. The Canada–United Kingdom Deep Submillimeter Survey. V. The Submillimeter Properties of Lyman Break Galaxies.

ADELBERGER, KURT L. Galaxies and Intergalactic Matter at Redshift $z \sim 3$: Overview. *Kurt L. Adelberger, Charles C. Steidel, Alice E. Shapley, & Max Pettini.* 584, 45 (2003)

Rest-Frame Ultraviolet Spectra of $z \sim 3$ Lyman Break Galaxies. *Alice E. Shapley, Charles C. Steidel, Max Pettini, & Kurt L. Adelberger.* 588, 65 (2003)

Hα Spectroscopy of Galaxies at $z > 2$: Kinematics and Star Formation. *Dawn K. Erb, Alice E. Shapley, Charles C. Steidel, Max Pettini, Kurt L. Adelberger, Matthew P. Hunt, Alan F. M. Moorwood, & Jean-Gabriel Cuby.* 591, 101 (2003)

Lyman Break Galaxies at Redshift $z \sim 3$: Survey Description and Full Data Set. *Charles C. Steidel, Kurt L. Adelberger, Alice E. Shapley, Max Pettini, Mark Dickenson, & Mauro Giavalisco.* 592, 728 (2003)

AFANASIEV, V. L. The Leo I Cloud: Secular Nuclear Evolution of NGC 3379, NGC 3384, and NGC 3368? *O. K. Sil'chenko, A. V. Moiseev, V. L. Afanasiev, V. H. Chavushyan, & J. R. Valdes.* 591, 185 (2003)

AFONSO, J. Dependence of Dust Obscuration on Star Formation Rates in Galaxies. *J. Afonso, A. Hopkins, B. Mobasher, & C. Almeida.* 597, 269 (2003)

AFSHORDI, N. Geometrically Thin Disk Accreting into a Black Hole. *N. Afshordi & B. Paczyński.* 592, 354 (2003)

Primordial Black Holes as Dark Matter: The Power Spectrum and Evaporation of Early Structures. *N. Afshordi, P. McDonald, & D. N. Spergel.* 594, L71 (2003)

AGAFONOV, YU. N. Measurement of ^{3}He/^{4}He in the Local Interstellar Medium: The Collisa Experiment on *Mir*. *E. Salerno, F. Bühler, P. Bochsler, H. Busemann, M. L. Bassi, G. N. Zastenker, Yu. N. Agafonov, & N. A. Eismont.* 585, 840 (2003)

AGAFONOVA, I. I. Metal Abundances and Kinematics of Quasar Absorbers. II. Absorption Systems toward Q0347−3819 and APM BR J0307−4945. *S. A. Levshakov, I. I. Agafonova, S. D'Odorico, A. M. Wolfe, & M. Dessauges-Zavadsky.* 582, 596 (2003)

AGGARWAL, K. M. Energy Levels, Radiative Rates, and Collision Strengths for Transitions in Fe XVII. *K. M. Aggarwal, F. P. Keenan, & A. Z. Msezane.* 144, 169 (2003)

AGOL, E. *Chandra* Observations of QSO 2237+0305. *X. Dai, G. Chartas, E. Agol, M. W. Bautz, & G. P. Garmire.* 589, 100 (2003)

AGOL, ERIC. Finding White Dwarfs with Transit Searches. *Alison J. Farmer & Eric Agol.* 592, 1151 (2003)

Microlensing of Large Sources. *Eric Agol.* 594, 449 (2003)

AGUDO, IVÁN. Three-dimensional Simulations of Relativistic Precessing Jets Probing the Structure of Superluminal Sources. *Miguel-Ángel Aloy, José-María Martí, José-Luís Gómez, Iván Agudo, Ewald Müller, & José-María Ibáñez.* 585, L109 (2003)

AGUEROS, MARCEL A. An X-Ray Image of the Composite Supernova Remnant G16.7+0.1. *David J. Helfand, Marcel A. Agueros, & E. V. Gotthelf.* 592, 941 (2003)

AGUERRI, J. A. L. Direct Confirmation of Two Pattern Speeds in the Double-barred Galaxy NGC 2950. *E. M. Corsini, Victor P. Debattista, & J. A. L. Aguerri.* 599, L29 (2003)

AGUERRI, J. ALFONSO L. See NAPOLITANO, NICOLA R., et al. Intracluster Stellar Population Properties from *N*-Body Cosmological Simulations. I. Constraints at $z = 0$.

AGUILAR, A. Absolute Photoionization Cross Section Measurements of O II Ions from 29.7 to 46.2 eV. *A. Aguilar, A. M. Covington, G. Hinojosa, R. A. Phaneuf, I. Álvarez, C. Cisneros, J. D. Bozek, I. Dominguez, M. M. Sant'Anna, A. S. Schlachter, S. N. Nahar, & B. M. McLaughlin.* 146, 467 (2003)

AGUIRRE, ANTHONY. Metallicity of the Intergalactic Medium Using Pixel Statistics. II. The Distribution of Metals as Traced by C IV. *Joop Schaye, Anthony Aguirre, Tae-Sun Kim, Tom Theuns, Michael Rauch, & Wallace L. W. Sargent.* 596, 768 (2003)

AGUIRRE, J. E. The Spectrum of Integrated Millimeter Flux of the Magellanic Clouds and 30 Doradus from TopHat and DIRBE Data. *J. E. Aguirre, J. J. Bezaire, E. S. Cheng, D. A. Cottingham, S. S. Cordone, T. M. Crawford, D. J. Fixsen, L. Knox, S. S. Meyer, H. U. Norgaard-Nielsen, R. F. Silverberg, P. Timbie, & G. W. Wilson.* 596, 273 (2003)

AHARONIAN, FELIX A. Neutrinos from Accreting Neutron Stars. *Luis A. Anchordoqui, Diego F. Torres, Thomas P. McCauley, Gustavo E. Romero, & Felix A. Aharonian.* 589, 481 (2003)

AHORONIAN, F. See BÖTTCHER, M., et al. Coordinated Multiwavelength Observations of BL Lacertae in 2000.

AHRENS, J. Search for Point Sources of High-Energy Neutrinos with AMANDA. *J. Ahrens, X. Bai, G. Barouch, S. W. Barwick, R. C. Bay, T. Becka, K.-H. Becker, D. Bertrand, F. Binon, A. Biron, S. Boeser, O. Botner, A. Bouchta, O. Bouhali, T. Burgess, S. Carius, T. Castermans, D. Chirkin, J. Conrad, J. Cooley, D. F. Cowen, A. Davour, C. De Clercq, T. DeYoung, P. Desiati, J.-P. Dewulf, P. Doksus, J. Edsjö, P. Ekström, T. Feser, T. K. Gaisser, M. Gaug, L. Gerhardt, A. Goldschmidt, A. Hallgren, F. Halzen, K. Hanson, R. Hardtke, T. Hauschildt, M. Hellwig, P. Herquet, G. C. Hill, P. O. Hulth, K. Hultqvist, S. Hundertmark, J. Jacobsen, A. Karle, J. Kim, L. Köpke, M. Kowalski, K. Kuehn, J. I. Lamoureux, H. Leich, M. Leuthold, P. Lindahl, J. Madsen, P. Marciniewski, H. Matis, C. P. McParland, T. C. Miller, Y. Minaeva, P. Miocinović, P. C. Mock, R. Morse, T. Neunhöffer, P. Niessen, D. R. Nygren, H. Ögelman, P. Olbrechts, C. Pérez de los Heros, A. C. Pohl, P. B. Price, G. T. Przybylski, K. Rawlins, E. Resconi, W. Rhode, M. Ribordy, S. Richter, J. Rodríguez Martino, P. Romenesko, D. Ross, H.-G. Sander, T. Schmidt, D. Schneider, R. Schwarz, A. Silvestri, M. Solarz, G. M. Spiczak, C. Spiering, D. Steele, P. Steffen, R. G. Stokstad, K.-H. Sulanke, I. Taboada, L. Thollander, S. Tilav, C. Walck, C. Weinheimer, C. H. Wiebusch, C. Wiedemann, R. Wischnewski, H. Wissing, K. Woschnagg, W. Wu, G. Yodh, & S. Young (The AMANDA Collaboration).* 583, 1040 (2003)

AHRENS, T. J. See MUKADEM, ANJUM S., et al. Constraining the Evolution of ZZ Ceti.

AHRENS, V. A Concise New Look at the *l*-Type Spectrum of $H^{12}C^{14}N$. *S. Thorwirth, H. S. P. Müller, F. Lewen, S. Brünken, V. Ahrens, & G. Winnewisser.* 585, L163 (2003)

AIKAWA, YURI. Molecular Evolution in Collapsing Prestellar Cores. II. The Effect of Grain-Surface Reactions. *Yuri Aikawa, Nagayoshi Ohashi, & Eric Herbst.* 593, 906 (2003)

AJHAR, EDWARD A. Measuring Distances and Probing the Unresolved Stellar Populations of Galaxies Using Infrared Surface Brightness Fluctuations. *Joseph B. Jensen, John L. Tonry, Brian J. Barris, Rodger I. Thompson, Michael C. Liu, Marcia J. Rieke, Edward A. Ajhar, & John P. Blakeslee.* 583, 712 (2003)

AJIKI, MASARU. See TANIGUCHI, YOSHIAKI, et al. The Discovery of a Very Narrow Line Star-forming Object at a Redshift of 5.66.

See FUJITA, SHINOBU S., et al. The Hα Luminosity Function and Star Formation Rate at $z \approx 0.24$ Based on Subaru Deep Imaging Data.

AKE, T. B. See WAKKER, B. P., et al. The *Far Ultraviolet Spectroscopic Explorer* Survey of O VI Absorption in and near the Galaxy.

AKE, THOMAS B. A *Far Ultraviolet Spectroscopic Explorer* Survey of Coronal Forbidden Lines in Late-Type Stars. *Seth Redfield, Thomas R. Ayres, Jeffrey L. Linsky, Thomas B. Ake, A. K. Dupree, Richard D. Robinson, & Peter R. Young.* 585, 993 (2003)

AKERLOF, C. W. A Search for Correlations of TeV Gamma Rays with Ultra–High-Energy Cosmic Rays. *C. W. Akerlof, S. Biller, P. Boyle, J. Buckley, D. A. Carter-Lewis, M. Catanese, M. F. Cawley, V. Connaughton, D. J. Fegan, J. Finley, J. Gaidos, A. M. Hillas, F. Krennrich, R. C. Lamb, R. Lessard, J. McEnery, G. Mohanty, N. A. Porter, J. Quinn, A. Rodgers, H. J. Rose, F. Samuelson, M. S. Schubnell, G. Sembroski, R. Srinivasan, T. C. Weekes, & J. Zweerink.* 586, 1232 (2003)

See SMITH, D. A., et al. ROTSE-III Observations of the Early Afterglow from GRB 030329.

AKESON, R. See COLAVITA, M., et al. Observations of DG Tauri with the Keck Interferometer.

See SWAIN, MARK, et al. Interferometer Observations of Subparsec-Scale Infrared Emission in the Nucleus of NGC 4151.

AKESON, R. L. Near-Infrared Interferometric Measurements of Herbig Ae/Be Stars. *J. A. Eisner, B. F. Lane, R. L. Akeson, L. A. Hillenbrand, & A. I. Sargent.* 588, 360 (2003)

AKESON, RACHEL L. Protoplanetary Disk Mass Distribution in Young Binaries. *Eric L. N. Jensen & Rachel L. Akeson.* 584, 875 (2003)

AKIMOTO, F. Spatial Distributions of A3558 in the Core Region of the Shapley Supercluster. *F. Akimoto, K. Kondou, A. Furuzawa, Y. Tawara, & K. Yamashita.* 596, 170 (2003)

AKIYAMA, MASAYUKI. Optical Identification of the *ASCA* Medium Sensitivity Survey in the Northern Sky: Nature of Hard X-Ray–Selected Luminous Active Galactic Nuclei. *Masayuki Akiyama, Yoshihiro Ueda, Kouji Ohta, Taáayuki Takahashi, & Toru Yamada.* 148, 275 (2003)

See OHTA, KOUJI, et al. Optical Identification of the *ASCA* Lynx Deep Survey: An Association of Quasi-Stellar Objects and a Supercluster at $z = 1.3$?

Cosmological Evolution of the Hard X-Ray Active Galactic Nucleus Luminosity Function and the Origin of the Hard X-Ray Background. *Yoshihiro Ueda, Masayuki Akiyama, Kouji Ohta, & Takamitsu Miyaji.* 598, 886 (2003)

AKIYAMA, SACHIKO. Analysis of the Temperature and Emission Measure of Solar Coronal Arcades and Test of a Scaling Law of Flare/Arcade Loop Length: Erratum (ApJ, 579, L45 [2002]). *Tetsuya T. Yamamoto, Daikou Shiota, Takuma Sakajiri, Sachiko Akiyama, Hiroaki Isobe, & Kazunari Shibata.* 592, L107 (2003) (Orig. paper in 579, L45 (2002))

AKIYAMA, SHIZUKA. The Magnetorotational Instability in Core-Collapse Supernova Explosions. *Shizuka Akiyama, J. Craig Wheeler, David L. Meier, & Itamar Lichtenstadt.* 584, 954 (2003)

ALBERDI, A. See TORRELLES, J. M., et al. Evidence for Evolution of the Outflow Collimation in Very Young Stellar Objects.

ALBROW, M. D. See FIELDS, DALE L., et al. High-Precision Limb-Darkening Measurement of a K3 Giant Using Microlensing.

ALCALDE, DAVID. See COLLEY, WESLEY N., et al. Around-the-Clock Observations of the Q9057+561A,B Gravitationally Lensed Quasar. II. Results for the Second Observing Season.

ALCOCK, C. The MACHO Project Large Magellanic Cloud Variable Star Inventory. XI. Frequency Analysis of the Fundamental Mode RR Lyrae Stars. *C. Alcock, D. R. Alves, A. Becker, D. Bennet, K. H. Cook, A. Drake, K. Freeman, M. Geha, K. Griest, G. Kovács, M. Lehner, S. Marshall, D. Minniti, C. Nelson, B. Peterson, P. Popowski, M. Pratt, P. Quinn, A. Rodgers, C. Stubbs, W. Sutherland, T. Vandehei, & D. L. Welch.* 598, 597 (2003)

ALDCROFT, T. L. *Chandra* Observation of 3C 212: A New Look at the X-Ray and Ultraviolet Absorbers. *T. L. Aldcroft, A. Siemiginowska, M. Elvis, S. Mathur, F. Nicastro, & S. S. Murray.* 597, 751 (2003)

ALDCROFT, THOMAS L. See BECHTOLD, JILL, et al. *Chandra* Survey of Radio-quiet, High-Redshift Quasars.

Lens or Binary? *Chandra* Observations of the Wide-Separation Broad Absorption Line Quasar Pair UM 425. *Thomas L. Aldcroft & Paul J. Green.* 592, 710 (2003)

See SIEMIGINOWSKA, ANETA, et al. *Chandra* Discovery of an X-Ray Jet and Extended X-Ray Structure in $z = 0.63$ Quasar B2 0738+313.

An X-Ray Jet Discovered by *Chandra* in the $z = 4.3$ Radio-selected Quasar GB 1508+5714. *Aneta Siemiginowska, Randall K. Smith, Thomas L. Aldcroft, D. A. Schwartz, Frederik Paerels, & Andreea O. Petric.* 598, L15 (2003)

ALDERING, G. See KNOP, R. A., et al. New Constraints on Ω_M, Ω_Λ, and w from an Independent Set of 11 High-Redshift Supernovae Observed with the *Hubble Space Telescope*.

ALDERING, GREG. Multicolor Light Curves of Type Ia Supernovae on the Color-Magnitude Diagram: A Novel Step toward More Precise Distance and Extinction Estimates. *Lifan Wang, Gerson Goldhaber, Greg Aldering, & Saul Perlmutter.* 590, 944 (2003)

ALEKSEEV, ILYA. See HAWLEY, SUZANNE L., et al. Multiwavelength Observations of Flares on AD Leonis.

ALEXANDER, D. M. Very High Redshift X-Ray–selected Active Galactic Nuclei in the *Chandra* Deep Field–North. *A. J. Barger, L. L. Cowie, P. Capak, D. M. Alexander, F. E. Bauer, W. N. Brandt, G. P. Garmire, & A. E. Hornschemeier.* 584, L61 (2003)

ALEXANDER, DAVID. *TRACE* and *Yohkoh* Observations of a White-Light Flare. *Thomas R. Metcalf, David Alexander, Hugh S. Hudson, & Dana W. Longcope.* 595, 483 (2003)

ALEXANDER, R. CALUM. An Explanation for Non–Power-Law Behavior in the Hard X-Ray Spectrum of the 2002 July 23 Solar Flare. *Eduard P. Kontar, John C. Brown, A. Gordon Emslie, Richard A. Schwartz, David M. Smith, & R. Calum Alexander.* 595, L123 (2003)

ALEXANDER, T. See GENZEL, R., et al. The Stellar Cusp around the Supermassive Black Hole in the Galactic Center.

Stellar Dynamics in the Central Arcsecond of Our Galaxy. *R. Schödel, T. Ott, R. Genzel, A. Eckart, N. Mouawad, & T. Alexander.* 596, 1015 (2003)

A Geometric Determination of the Distance to the Galactic Center. *F. Eisenhauer, R. Schödel, R. Genzel, T. Ott, M. Tecza, R. Abuter, A. Eckart, & T. Alexander.* 597, L121 (2003)

ALEXANDER, TAL. Sqeezars: Tidally Powered Stars Orbiting a Massive Black Hole. *Tal Alexander & Mark Morris.* 590, L25 (2003)

Orbital In-Spiral into a Massive Black Hole in a Galactic Center. *Tal Alexander & Clovis Hopman.* 590, L29 (2003)

ALIŠAUSKAS, D. See MUKADEM, ANJUM S., et al. Constraining the Evolution of ZZ Ceti.

ALLAMANDOLA, L. J. See CLAYTON, GEOFFREY C., et al. The Role of Polycyclic Aromatic Hydrocarbons in Ultraviolet Extinction. I. Probing Small Molecular Polycyclic Aromatic Hydrocarbons.

ALLAMANDOLA, LOUIS J. Side Group Addition to the Polycyclic Aromatic Hydrocarbon Coronene by Proton Irradiation in Cosmic Ice Analogs. *Max P. Bernstein, Marla H. Moore, Jamie E. Elsila, Scott A. Sandford, Louis J. Allamandola, & Richard N. Zare.* 582, L25 (2003)

Luminescence from Vacuum-Ultraviolet–irradiated Cosmic Ice Analogs and Residues. *Murthy S. Gudipati, Jason P. Dworkin, Xavier D.F. Chillier, & Louis J. Allamandola.* 583, 514 (2003)

Facile Generation and Storage of Polycyclic Aromatic Hydrocarbon Ions in Astrophysical Ices. *Murthy S. Gudipati & Louis J. Allamandola.* 596, L195 (2003)

ALLARD, NICOLE F. *Far Ultraviolet Spectroscopic Explorer* Observation of the Ultramassive White Dwarf PG 1658+441. *Jean Dupuis, Pierre Chayer, Stéphane Vennes, Nicole F. Allard, & Guillaume Hébrard.* 598, 486 (2003)

ALLEN, ANTHONY. Collapse of Magnetized Singular Isothermal Toroids. I. The Nonrotating Case. *Anthony Allen, Frank H. Shu, & Zhi-Yun Li.* 599, 351 (2003)

Collapse of Magnetized Singular Isothermal Toroids. II. Rotation and Magnetic Braking. *Anthony Allen, Zhi-Yun Li, & Frank H. Shu.* 599, 363 (2003)

ALLEN, GLENN E. Near-Infrared Synchrotron Emission from Cassiopeia A. *Jeonghee Rho, Stephen P. Reynolds, William T. Reach, Tom H. Jarrett, Glenn E. Allen, & John C. Wilson.* 592, 299 (2003)

RXTE, *ROSAT*, and *ASCA* Observations of G347.3−0.5 (RX J1713.7−3946): Probing Cosmic-Ray Acceleration by a Galactic Shell-Type Supernova Remnant. *Thomas G. Pannuti, Glenn E. Allen, John C. Houck, & Steven J. Sturner.* 593, 377 (2003)

ALLEN, PETER R. Luminosity Functions of Young Clusters: Modeling the Substellar Mass Regime. *Peter R. Allen, David E. Trilling, David W. Koerner, & I. Neill Reid.* 595, 1222 (2003)

ALLEN, RICH. See CLOSE, LAIRD M., et al. High-Resolution Images of Orbital Motion in the Trapezium Cluster: First Scientific Results from the Multiple Mirror Telescope Deformable Secondary Mirror Adaptive Optics System.

ALLEN, S. W. *Chandra* Observations of the Galaxy Cluster A478: The Interaction of Hot Gas and Radio Plasma in the Core, and an Improved Determination of the Compton y-Parameter. *M. Sun, C. Jones, S. S. Murray, S. W. Allen, A. C. Fabian, & A. C. Edge.* 587, 619 (2003)

ALLEN, STEVEN W. Accretion onto the Supermassive Black Hole in M87. *Tiziana Di Matteo, Steven W. Allen, Andrew C. Fabian, Andrew S. Wilson, & Andrew J. Young.* 582, 133 (2003)

A Unique Small-Scale Gravitational Arc in A1201. *Alastair C. Edge, Graham P. Smith, David J. Sand, Tommaso Treu, Harald Ebeling, Steven W. Allen, & Pieter G. van Dokkum.* 599, L69 (2003)

ALLENDE PRIETO, CARLOS. Non-LTE Model Atmospheres for Late-Type Stars. II. Restricted Non-LTE Calculations for a Solar-like Atmosphere. *Carlos Allende Prieto, Ivan Hubeny, & David L. Lambert.* 591, 1192 (2003)

Non-LTE Model Atmospheres for Late-Type Stars. I. A Collection of Data for Light Neutral and Singly Ionized Atoms. *Carlos Allende Prieto, David L. Lambert, Ivan Hubeny, & Thierry Lanz.* 147, 363 (2003)

ALLER, H. D. Pearson-Readhead Survey Sources. II. The Long-Term Centimeter-Band Total Flux and Linear Polarization Properties of a Complete Radio Sample. *M. F. Aller, H. D. Aller, & P. A. Hughes.* 586, 33 (2003)

See BÖTTCHER, M., et al. Coordinated Multiwavelength Observations of BL Lacertae in 2000.

ALLER, HUGH D. The Cross-Wavelet Transform and Analysis of Quasi-periodic Behavior in the Pearson-Readhead VLBI Survey Sources. *Brandon C. Kelly, Philip A. Hughes, Hugh D. Aller, & Margo F. Aller.* 591, 695 (2003)

ALLER, L. H. Emission Lines of Cl II in the Optical Spectra of Gaseous Nebulae. *F. P. Keenan, L. H. Aller, K. M. Exter, S. Hyung, & D. L. Pollacco.* 584, 385 (2003)

ALLER, M. F. Pearson-Readhead Survey Sources. II. The Long-Term Centimeter-Band Total Flux and Linear Polarization Properties of a Complete Radio Sample. *M. F. Aller, H. D. Aller, & P. A. Hughes.* 586, 33 (2003)

See BÖTTCHER, M., et al. Coordinated Multiwavelength Observations of BL Lacertae in 2000.

ALLER, MARGO F. The Cross-Wavelet Transform and Analysis of Quasi-periodic Behavior in the Pearson-Readhead VLBI Survey Sources. *Brandon C. Kelly, Philip A. Hughes, Hugh D. Aller, & Margo F. Aller.* 591, 695 (2003)

ALLINGTON-SMITH, J. See SWINBANK, A. M., et al. Galaxies under the Cosmic Microscope: A Gemini Multiobject Spectrograph Study of the Lensed Disk Galaxy 289 in A2218.

ALLRED, JOEL C. See HAWLEY, SUZANNE L., et al. Multiwavelength Observations of Flares on AD Leonis.

ALMEIDA, C. Dependence of Dust Obscuration on Star Formation Rates in Galaxies. *J. Afonso, A. Hopkins, B. Mobasher, & C. Almeida.* 597, 269 (2003)

ALMEIDA, J. SANCHEZ. Quiet-Sun Magnetic Fields at High Spatial Resolution. *I. Domínguez Cardena, F. Kneer, & J. Sanchez Almeida.* 582, L55 (2003)

ALOISI, A. Abundances in the Neutral Interstellar Medium of I Zw 18 from *Far Ultrviolet Spectroscopic Explorer* Observations. *A. Aloisi, S. Savaglio, T. M. Heckman, C. G. Hoopes, C. Leitherer, & K. R. Sembach.* 595, 760 (2003)

ALOISI, ALESSANDRA. Synthetic High-Resolution Line Spectra of Star-forming Galaxies below 1200 Å. *Carmelle Robert, Anne Pellerin, Alessandra Aloisi, Claus Leitherer, Charles Hoopes, & Timothy M. Heckman.* 144, 21 (2003)

ALONSO-HERRERO, ALMUDENA. Luminosity and Stellar Mass Functions of Local Star-forming Galaxies. *Pablo G. Pérez-González, Jesús Gallegeo, Jaime Zamorano, Almudena Alonso-Herrero, Armando Gil de Paz, & Alfonso Aragón-Salamanca.* 587, L27 (2003)

ALONSO-MEDINA, A. Transitions from Autoionized Single-ionized Tin States: A Theoretical Study of the $5s5p\ (^3P^o)\ nl$ ($nl = 5d$, $6s$) Levels of Sn II. *A. Alonso-Medina, C. Colón, & C. Herrán Martínez.* 595, 550 (2003)

ALOY, MIGUEL-ÁNGEL. Three-dimensional Simulations of Relativistic Precessing Jets Probing the Structure of Superluminal Sources. *Miguel-Ángel*

Aloy, José-María Martí, José-Luís Gómez, Iván Agudo, Ewald Müller, & José-María Ibáñez. 585, L109 (2003)

ALPAR, M. A. On the Enhanced X-Ray Emission from SGR 1900+14 after the August 27 Giant Flare. *Ü. Ertan & M. A. Alpar.* 593, L93 (2003)

ALPAR, M. ALI. Can Thin Disks Produce Anomalous X-Ray Pulsars? *K. Yavuz Eksi & M. Ali Alpar.* 599, 450 (2003)

ALTAMIRANO, P. See MASON, B. S., et al. The Anisotropy of the Microwave Background to $l = 3500$: Deep Field Observatons with the Cosmic Background Imager.

See PEARSON, T. J., et al. The Anisotropy of the Microwave Background to $l = 3500$: Mosaic Observations with the Cosmic Background Imager.

ÁLVAREZ, I. See AGUILAR, A., et al. Absolute Photoionization Cross Section Measurements of O II Ions from 29.7 to 46.2 eV.

ALVES, D. R. See ALCOCK, C., et al. The MACHO Project Large Magellanic Cloud Variable Star Inventory. XI. Frequency Analysis of the Fundamental Mode RR Lyrae Stars.

ALVES, J. Spatial Study with the Very Large Telescope of a New Resolved Edge-on Circumstellar Dust Disk Discovered at the Periphery of the ρ Ophiuchi Dark Cloud. *N. Grosso, J. Alves, K. Wood, R. Neuhäuser, T. Montmerle, & J. E. Bjorkman.* 586, 296 (2003)

ALVES, JOÃO F. The Dynamical State of Barnard 68: A Thermally Supported, Pulsating Dark Cloud. *Charles J. Lada, Edwin A. Bergin, João F. Alves, & Tracy L. Huard.* 586, 286 (2003)

Envelope Structure of Starless Core L694-2 Derived from a Near-Infrared Extinction Map. *Daniel W. A. Harvey, David J. Wilner, Charles J. Lada, Philip C. Myers, & Joao F. Alves.* 598, 1112 (2003)

ALY, J. J. Coronal Mass Ejection: Initiation, Magnetic Helicity, and Flux Ropes. I. Boundary Motion–driven Evolution. *T. Amari, J. F. Luciani, J. J. Aly, Z. Mikic, & J. Linker.* 585, 1073 (2003)

Coronal Mass Ejection: Initiation, Magnetic Helicity, and Flux Ropes. II. Turbulent Diffusion–driven Evolution. *T. Amari, J. F. Luciani, J. J. Aly, Z. Mikic, & J. Linker.* 595, 1231 (2003)

AMANDA COLLABORATION, THE. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

AMANO, T. Laboratory Submillimeter-Wave Detection of D_2H^+: A New Probe into Multiple Deuteration? *T. Hirano & T. Amano.* 597, L85 (2003)

AMANULLAH, R. See KNOP, R. A., et al. New Constraints on Ω_M, Ω_Λ, and w from an Independent Set of 11 High-Redshift Supernovae Observed with the *Hubble Space Telescope*.

AMARI, T. Coronal Mass Ejection: Initiation, Magnetic Helicity, and Flux Ropes. I. Boundary Motion–driven Evolution. *T. Amari, J. F. Luciani, J. J. Aly, Z. Mikic, & J. Linker.* 585, 1073 (2003)

Coronal Mass Ejection: Initiation, Magnetic Helicity, and Flux Ropes. II. Turbulent Diffusion–driven Evolution. *T. Amari, J. F. Luciani, J. J. Aly, Z. Mikic, & J. Linker.* 595, 1231 (2003)

AMATI, L. Spectral and Temporal Behavior of the Black Hole Candidate XTE J1118+480 as Observed with *BeppoSAX*. *F. Frontera, L. Amati, A. A. Zdziarski, T. Belloni, S. Del Sordo, N. Masetti, M. Orlandini, & E. Palazzi.* 592, 1110 (2003)

AMENDOLA, LUCA. Cosmic Microwave Background as a Gravity Probe. *Luca Amendola, Claudia Quercellini, Domenico Tocchini-Valentini, & Alessandro Pasqui.* 583, L53 (2003)

AMENOMORI, M. Multi-TeV Gamma-Ray Flares from Markarian 421 in 2000 and 2001 Observed with the Tibet Air Shower Array. *M. Amenomori, S. Ayabe, S. W. Cui, Danzengluobu, L. K. Ding, X. H. Ding, C. F. Feng, Z. Y. Feng, X. Y. Gao, Q. X. Geng, H. W. Guo, H. H. He, M. He, K. Hibino, N. Hotta, Haibing Hu, H. B. Hu, J. Huang, Q. Huang, H. Y. Jia, F. Kajino, K. Kasahara, Y. Katayose, K. Kawata, Labaciren, G. M. Le, J. Y. Li, H. Lu, S. L. Lu, X. R. Meng, K. Mizutani, J. Mu, H. Nanjo, M. Nishizawa, M. Ohnishi, I. Ohta, T. Ouchi, S. Ozawa, J. R. Ren, T. Saito, M. Sakata, T. Sasaki, M. Shibata, A. Shiomi, T. Shirai, H. Sugimoto, K Taira, M. Takita, Y. H. Tan, N. Tateyama, S. Torii, H. Tsuchiya, S. Udo, T. Utsugi, B. S. Wang, H. Wang, X. Wang, Y. G. Wang, L. Xue, Y. Yamamoto, X. C. Yang, Z. H. Ye, G. C. Yu, A. F. Yuan, T. Yuda, H. M. Zhang, J. L. Zhang, N. J. Zhang, X. Y. Zhang, Y. Zhang, Zhaxisangzhu, & X. X. Zhou.* 598, 242 (2003)

AN, J. See FIELDS, DALE L., et al. High-Precision Limb-Darkening Measurement of a K3 Giant Using Microlensing.

See KERINS, E., et al. Theory of Pixel Lensing toward M31. II. The Velocity Anisotropy and Flattening of the MACHO Distribution.

AN, JIN H. Spatial Separation of the 3.29 Micron Emission Feature and Associated 2 Micron Continuum in NGC 7023. *Jin H. An & K. Sellgren.* 599, 311 (2003)

ANABUKI, NAOHISA. X-Ray Evidence of a Buried Active Galactic Nucleus in UGC 5101. *Masatoshi Imanishi, Yuichi Terashima, Naohisa Anabuki, & Takao Nakagawa.* 596, L167 (2003)

ANANDARAO, B. G. Possible Photometric Evidence of Ejection of Bullet-like Features in the Relativistic Jet Source SS 433. *Sandip K. Chakrabarti, S. Pal, A. Nandi, B. G. Anandarao, & Soumen Mondal.* 595, L45 (2003)

ANCHORDOQUI, LUIS A. Neutrinos from Accreting Neutron Stars. *Luis A. Anchordoqui, Diego F. Torres, Thomas P. McCauley, Gustavo E. Romero, & Felix A. Aharonian.* 589, 481 (2003)

On the Cross-Correlation between the Arrival Direction of Ultra–High-Energy Cosmic Rays, BL Lacertae Objects, and EGRET Detections: A New Way to Identify EGRET Sources? *Diego F. Torres, Stephen Reucroft, Olaf Reimer, & Luis A. Anchordoqui.* 595, L13 (2003)

ANDERSEN, D. R. The Kinematics in the Core of the Low Surface Brightness Galaxy DDO 39. *R. A. Swaters, M. A. W. Verheijen, M. A. Bershady, & D. R. Andersen.* 587, L19 (2003)

ANDERSEN, DAVID R. The Tully-Fisher Relation of Barred Galaxies. *Stéphane Courteau, David R. Andersen, Matthew A. Bershady, Lauren A. MacArthur, & Hans-Walter Rix.* 594, 208 (2003)

A Face-on Tully-Fisher Relation. *David R. Andersen & Matthew A. Bershady.* 599, L79 (2003)

ANDERSEN, M. I. See GREINER, J., et al. GRB 011121: A Collimated Outflow into Wind-blown Surroundings.

ANDERSON, J. Does M15 Possess an Intermediate-Mass Black Hole in Its Core? *B. J. McNamara, T. E. Harrison, & J. Anderson.* 595, 187 (2003)

ANDERSON, JAY. A Probable Dwarf Nova Outburst in the Core of the Globular Cluster M22. *Jay Anderson, Adrienne M. Cool, & Ivan R. King.* 597, L137 (2003)

ANDERSON, JEFFREY M. Locating the Launching Region of T Tauri Winds: The Case of DG Tauri. *Jeffrey M. Anderson, Zhi-Yun Li, Ruben Krasnopolsky, & Roger D. Blandford.* 590, L107 (2003)

ANDERSON, M. I. See HJORTH, J., et al. Very High Column Density and Small Reddening toward GRB 020124 at $z = 3.20$.

ANDERSON, S. B. The Arecibo 430 MHz Intermediate Galactic Latitude Survey: Discovery of Nine Radio Pulsars. *J. Navarro, S. B. Anderson, & P. C. Freire.* 594, 943 (2003)

PSR J1909−3744: A Binary Millisecond Pulsar with a Very Small Duty Cycle. *B. A. Jacoby, M. Bailes, M. H. van Kerkwijk, S. Ord, A. Hotan, S. R. Kulkarni, & S. B. Anderson.* 599, L99 (2003)

ANDERSON, SCOTT F. See SZKODY, PAULA, et al. Two Rare Magnetic Cataclysmic Variables with Extreme Cyclotron Features Identified in the Sloan Digital Sky Survey.

See POOLEY, DAVID, et al. Dynamical Formation of Close Binary Systems in Globular Clusters.

VLT+UVES Spectroscopy of the Ca II Low-Ionization Broad Absorption Line Quasar SDSS J030000.56+004828.0. *Patrick B. Hall, Damien Hutsmékers, Scott F. Anderson, J. Brinkmann, Xiaohui Fan, Donald P. Schneider, & Donald G. York.* 593, 189 (2003)

See SCHMIDT, GARY D., et al. Magnetic White Dwarfs from the Sloan Digital Sky Survey: The First Data Release.

ANDERSON, STUART B. Detection of OH Absorption against PSR B1849+00. *Snežana Stanimirović, Joel M. Weisberg, John M. Dickey, Anton de la Fuente, Kathryn Devine, Abigail Hedden, & Stuart B. Anderson.* 592, 953 (2003)

ANDERSSON, B.-G. Further Evidence for Chemical Fractionation from Ultraviolet Observations of Carbon Monoxide. *S. R. Federman, David L. Lambert, Yaron Sheffer, Jason A. Cardelli, B.-G. Andersson, Ewine F. van Dishoeck, & J. Zsargó.* 591, 986 (2003)

FUSE Measurements of Rydberg Bands of Interstellar CO between 925 and 1150 Å. *Yaron Sheffer, S. R. Federman, & B.-G. Andersson.* 597, L29 (2003)

ANDERSSON, B-G. Potential Variations in the Interstellar N I Abundance. *David C. Knauth, B-G Andersson, Stephan R. McCandliss, & H. Warren Moos.* 596, L51 (2003)

ANDO, HIROYASU. See TANIGUCHI, YOSHIAKI, et al. The Discovery of a Very Narrow Line Star-forming Object at a Redshift of 5.66.

See AOKI, WAKO, et al. Europium Isotope Ratios in *s*-Process Element-enhanced Metal-poor Stars: A New Probe of the ^{151}Sm Branching.

See SATO, BUN'EI, et al. A Planetary Companion to the G-Type Giant Star HD 104985.

ANDRÉ, M. K. Oxygen Gas-Phase Abundance Revisited. *M. K. André, C. M. Oliveira, J. C. Howk, R. Ferlet, J.-M. Désert, G. Hébrard, S. Lacour,*

A. Lecavelier des Étangs, A. Vidal-Madjar, & H. W. Moos. 591, 1000 (2003)

ANDREANI, PAOLA. How Many Active Galaxies and QSOs Will Future Space Missions Detect? *Paola Andreani, Luigi Spinoglio, & Matthew A. Malkan.* 597, 759 (2003)

ANDRETTA, V. *Solar and Heliospheric Observatory*/Coronal Diagnostic Spectrograph and Ground-based Observations of a Two-Ribbon Flare: Spatially Resolved Signatures of Chromospheric Evaporation. *L. Teriaca, A. Falchi, G. Cauzzi, R. Falciani, L. A. Smaldone, & V. Andretta.* 588, 596 (2003)

ANDRIES, JESSE. Observational Tests of Damping by Resonant Absorption in Coronal Loop Oscillations. *Markus J. Aschwanden, Richard W. Nightingale, Jesse Andries, Marcel Goossens, & Tom Van Doorsselaere.* 598, 1375 (2003)

ANDRONOV, N. Cataclysmic Variables: An Empirical Angular Momentum Loss Prescription From Open Cluster Data. *N. Andronov, M. Pinsonneault, & A. Sills.* 582, 358 (2003)

ANFIMOV, D. See PRICE, P. A., et al. Discovery of GRB 020405 and Its Late Red Bump.

ANFIMOV, DMITRIJ S. See MITROFANOV, IGOR G., et al. Comparison of Redshift-known Gamma-Ray Bursts with the Main Groups of Bright BATSE Events.

ANGEL, ROGER. See CLOSE, LAIRD M., et al. Mid-Infrared Imaging of the Post–Asymptotic Giant Branch Star AC Herculis with the Multiple Mirror Telescope Adaptive Optics System.

See CLOSE, LAIRD M., et al. High-Resolution Images of Orbital Motion in the Trapezium Cluster: First Scientific Results from the Multiple Mirror Telescope Deformable Secondary Mirror Adaptive Optics System.

ANGELINI, L. *Chandra* and *XMM* Observations of the Accretion Disk Corona Source 0921−63. *T. R. Kallman, L. Angelini, B. Boroson, & J. Cottam.* 583, 861 (2003)

See ISRAEL, G. L., et al. The Infrared Counterpart to the Anomalous X-Ray Pulsar 1RXS J170849−400910.

ANGELINI, LORELLA. Evidence of a Cyclotron Feature in the Spectrum of the Anomalous X-Ray Pulsar 1RXS J170849−400910. *Nanda Rea, Gian Luca Israel, Luigi Stella, Tim Oosterbroek, Sandro Mereghetti, Lorella Angelini, Sergio Campana, & Stefano Covino.* 586, L65 (2003)

An *XMM-Newton* Observation of 4U 1755−33 in Quiescence: Evidence for a Fossil X-Ray Jet. *Lorella Angelini & Nicholas E. White.* 586, L71 (2003)

ANGLADA, G. See TORRELLES, J. M., et al. Evidence for Evolution of the Outflow Collimation in Very Young Stellar Objects.

ANNINOS, PETER. Non-Oscillatory Central Difference and Artificial Viscosity Schemes for Relativistic Hydrodynamics. *Peter Anninos & P. Chris Fragile.* 144, 243 (2003)

Supernova Enrichment of Dwarf Spheroidal Galaxies. *P. Chris Fragile, Stephen D. Murray, Peter Anninos, & Douglas N. C. Lin.* 590, 778 (2003)

Cosmos: A Radiation-Chemo-Hydrodynamics Code for Astrophysical Problems. *Peter Anninos, P. Chris Fragile, & Stephen D. Murray.* 147, 177 (2003)

ANNIS, JAMES. See BAHCALL, NETA A., et al. The Cluster Mass Function from Early Sloan Digital Sky Survey Data: Cosmological Implications.

See SZALAY, ALEXANDER S., et al. Karhunen-Loève Estimation of the Power Spectrum Parameters from the Angular Distribution of Galaxies in Early Sloan Digital Sky Survey Data.

See BAHCALL, NETA A., et al. A Merged Catalog of Clusters of Galaxies from Early Sloan Digital Sky Survey Data.

ANNIS, JIM. The Richness-dependent Cluster Correlation Function: Early Sloan Digital Sky Survey Data. *Neta A. Bahcall, Feng Dong, Lei Hao, Paul Bode, Jim Annis, James E. Gunn, & Donald P. Schneider.* 599, 814 (2003)

ANNUK, K. See MARCHENKO, S. V., et al. The Unusual 2001 Periastron Passage in the "Clockwork" Colliding-Wind Binary WR 140.

ANSORG, M. Relativistic Dyson Rings and Their Black Hole Limit. *M. Ansorg, A. Kleinwächter, & R. Meinel.* 582, L87 (2003)

ANTERRIEU, E. See PRIEUR, J. L., et al. Speckle Observations of Composite Spectrum Stars. II. Differential Photometry of the Binary Components.

ANTIA, H. M. Changes in Solar Dynamics from 1995 to 2002. *Sarbani Basu & H. M. Antia.* 585, 553 (2003)

Does the Sun Shrink with Increasing Magnetic Activity? *H. M. Antia.* 590, 567 (2003)

ANTIOCHOS, S. K. A Transient Heating Model for Coronal Structure and Dynamics. *D. Spadaro, A. F. Lanza, A. C. Lanzafame, J. T. Karpen, S. K. Antiochos, J. A. Klimchuk, & P. J. MacNeice.* 582, 486 (2003)

Constraints on Active Region Coronal Heating. *S. K. Antiochos, J. T. Karpen, E. E. DeLuca, L. Golub, & P. Hamilton.* 590, 547 (2003)

Constraints on the Magnetic Field Geometry in Prominences. *J. T. Karpen, S. K. Antiochos, J. A. Klimchuk, & P. J. MacNeice.* 593, 1187 (2003)

ANTONELLI, L. A. See DE PASQUALE, M., et al. A Comparative Study of the X-Ray Afterglow Properties of Optically Bright and Dark Gamma-Ray Bursts.

See SIEMIGINOWSKA, ANETA, et al. *Chandra* Discovery of an X-Ray Jet and Extended X-Ray Structure in $z = 0.63$ Quasar B2 0738+313.

ANTONUCCI, R. R. J. A *Hubble Space Telescope* Survey of Extended [O III] λ5007 Emission in a Far-Infrared Selected Sample of Seyfert Galaxies: Observations. *H. R. Schmitt, J. L. Donley, R. R. J. Antonucci, J. B. Hutchings, & A. L. Kinney.* 148, 327 (2003)

A *Hubble Space Telescope* Survey of Extended [O III] λ5007 Emission in a Far-Infrared Selected Sample of Seyfert Galaxies: Results. *H. R. Schmitt, J. L. Donley, R. R. J. Antonucci, J. B. Hutchings, A. L. Kinney, & J. E. Pringle.* 597, 768 (2003)

ANTONUCCI, ROBERT. Adaptive Optics Imaging and Spectroscopy of Cygnus A. I. Evidence for a Minor Merger. *Gabriela Canalizo, Claire Max, David Whysong, Robert Antonucci, & Scott E. Dahm.* 597, 823 (2003)

AOKI, K. See KAWABATA, K. S., et al. On the Spectrum and Spectropolarimetry of Type Ic Hypernova SN 2003dh/GRB 030329.

AOKI, KENTARO. See IWAMURO, FUMIHIDE, et al. Infrared Spectroscopy of 15 Radio Galaxies at $2 < z < 2.6$.

AOKI, T. See URATA, Y., et al. Multiband Optical Follow-up Observations of GRB 020813 at the Kiso and Bisei Observatories.

AOKI, TSUTOMU. See YOSHII, YUZURU, et al. The Optical/Near-Infrared Light Curves of SN 2002ap for the First 140 Days after Discovery.

AOKI, W. See KAWABATA, K. S., et al. On the Spectrum and Spectropolarimetry of Type Ic Hypernova SN 2003dh/GRB 030329.

AOKI, WAKO. Measurement of the Europium Isotope Ratio for the Extremely Metal-poor, *r*-Process–enhanced Star CS 31082-001. *Wako Aoki, Satoshi Honda, Timothy C. Beers, & Christopher Sneden.* 586, 506 (2003)

Europium Isotope Ratios in *s*-Process Element-enhanced Metal-poor Stars: A New Probe of the ^{151}Sm Branching. *Wako Aoki, Sean G. Ryan, Nobuyuki Iwamoto, Timothy C. Beers, John E. Norris, Hiroyasu Ando, Toshitaka Kajino, Grant J. Mathews, & Masayuki Y. Fujimoto.* 592, L67 (2003)

APAI, D. The First Detailed Look at a Brown Dwarf Disk. *I. Pascucci, D. Apai, Th. Henning, & C. P. Dullemond.* 590, L111 (2003)

First Detection of Millimeter Dust Emission from Brown Dwarf Disks. *R. Klein, D. Apai, I. Pascucci, Th. Henning, & L. B. F. M. Waters.* 593, L57 (2003)

APARICIO, A. Intergalactic Globular Clusters and the Faint End of the Galaxy Number Counts in A1656 (Coma). *A. Marín-Franch & A. Aparicio.* 585, 714 (2003)

Beyond the Hubble Deep Field Limiting Magnitude: Faint Galaxy Number Counts from Surface Brightness Fluctuations. *A. Marín-Franch & A. Aparicio.* 594, 63 (2003)

APPENZELLER, I. Fe II/Mg II Emission-Line Ratio in High-Redshift Quasars. *M. Dietrich, F. Hamann, I. Appenzeller, & M. Vestergaard.* 596, 817 (2003)

APPLETON, P. N. See CORBETT, E. A., et al. COLA. II. Radio and Spectroscopic Diagnostics of Nuclear Activity in Galaxies.

Azimuthal and Kinematic Segregation of Neutral and Molecular Gas in Arp 118: The Yin-Yang Galaxy NGC 1144. *P. N. Appleton, V. Charmandaris, Yu Gao, Tom Jarrett, & M. A. Bransford.* 586, 112 (2003)

Nonnuclear Hyper/Ultraluminous X-Ray Sources in the Starbursting Cartwheel Ring Galaxy. *Yu Gao, Q. Daniel Wang, P. N. Appleton, & Ray A. Lucas.* 596, L171 (2003)

APTEKAR, R. Observations of Giant Outbursts from Cygnus X-1. *S. Golenetskii, R. Aptekar, D. Frederiks, E. Mazets, V. Palshin, K. Hurley, T. Cline, & B. Stern.* 596, 1113 (2003)

APUNEVYCH, S. Acoustic Peaks and Dips in the Cosmic Microwave Background Power Spectrum: Observational Data and Cosmological Constraints. *R. Durrer, B. Novosyadlyj, & S. Apunevych.* 583, 33 (2003)

ARABADJIS, J. S. The X-Ray Binary GRS 1741.9−2853 in Outburst and Quiescence. *M. P. Muno, F. K. Baganoff, & J. S. Arabadjis.* 598, 474 (2003)

ARABADJIS, JOHN S. Small-Scale Structure in the Galactic Interstellar Medium: Implications for Galaxy Cluster Studies. *Joel N. Bregman, Megan C. Novicki, Jessica E. Krick, & John S. Arabadjis.* 597, 399 (2003)

ARACIL, BASTIEN. The Clustering of Intergalactic Metals. *Christophe Pichon, Evan Scannapieco, Bastien Aracil, Patrick Petitjean, Dominique Aubert, Jacqueline Bergeron, & Stéphane Colombi.* 597, L97 (2003)

ARAD, ITAI. Dark Halo Cusp: Asymptotic Convergence. *Avishai Dekel, Itai Arad, Jonathan Devor, & Yuval Birnboim.* 588, 680 (2003)

ARAGÓN-SALAMANCA, ALFONSO. Luminosity and Stellar Mass Functions of Local Star-forming Galaxies. *Pablo G. Pérez-González, Jesús Gallego, Jaime Zamorano, Almudena Alonso-Herrero, Armando Gil de Paz, & Alfonso Aragón-Salamanca.* 587, L27 (2003)

Spatial Analysis of the Hα Emission in the Local Star-forming UCM Galaxies. *Pablo G. Pérez-González, Jaime Zamorano, Jesús Gallego, Alfonso Aragón-Salamanca, & Armando Gil de Paz.* 591, 827 (2003)

ARAI, K. Effects of a Decaying Cosmological Term on the Formation of Molecules and First Objects. *M. Hashimoto, T. Kamikawa, & K. Arai.* 598, 13 (2003)

ARAI, KENZO. p-Process Nucleosynthesis inside Supernova-driven Supercritical Accretion Disks. *Shin-ichirou Fujimoto, Masa-aki Hashimoto, Osamu Koike, Kenzo Arai, & Ryuichi Matsuba.* 585, 418 (2003)

ARAUJO-BETANCOR, S. System Parameters of DW Ursae Majoris. *S. Araujo-Betancor, C. Knigge, K. S. Long, D. W. Hoard, P. Szkody, B. Rogers, K. Krisciunas, V. S. Dhillon, R. I. Hynes, J. Patterson, & J. Kemp.* 583, 437 (2003)

ARAV, NAHUM. Contrasting the Ultraviolet and X-Ray O VI Column Density Inferred for the Outflow in NGC 5548. *Nahum Arav, Jelle Kaastra, Katrien Steenbrugge, Bert Brinkman, Rick Edelson, Kirk T. Korista, & Martijn de Kool.* 590, 174 (2003)

ARAYA, E. Resolution of Distance Ambiguities of Inner Galaxy Massive Star Formation Regions. I. *C. Watson, E. Araya, M. Sewilo, E. Churchwell, P. Hofner, & S. Kurtz.* 587, 714 (2003)

ARAYA, ESTEBAN. A C-Band Spectral Scan of IRC +10°216. *Esteban Araya, Peter Hofner, Paul Goldsmith, Slava Slysh, & Shuro Takano.* 596, 556 (2003)

ARDI, ELIANI. Constraints of the Clumpiness of Dark Matter Halos through Heating of the Disk Galaxies. *Eliani Ardi, Toshio Tsuchiya, & Andreas Burkert.* 596, 204 (2003)

ARDILA, D. R. See BOUWENS, R. J., et al. Star Formation at $z \sim 6$: i-Dropouts in the Advanced Camera for Surveys Guaranteed Time Observation Fields.

See MEURER, GERHARDT R., et al. The Discovery of Globular Clusters in the Protospiral Galaxy NGC 2915: Implications for Hierarchical Galaxy Evolution.

ARDILA, DAVID R. See BLAKESLEE, JOHN P., et al. Discovery of Two Distant Type Ia Supernovae in the Hubble Deep Field–North with the Advanced Camera for Surveys.

AREFIEV, VADIM A. Fast X-Ray Transients and Their Connection to Gamma-Ray Bursts. *Vadim A. Arefiev, William C. Priedhorsky, & Konstantin N. Borozdin.* 586, 1238 (2003)

ARENDT, RICHARD G. An Empirical Decomposition of Near-Infrared Emission into Galactic and Extragalactic Components. *Richard G. Arendt & Eli Dwek.* 585, 305 (2003)

ARGON, ALICE L. A Class of Interstellar OH Masers Associated with Protostellar Outflows. *Alice L. Argon, Mark J. Reid, & Karl M. Menten.* 593, 925 (2003)

Interstellar Hydroxyl Masers in the Galaxy. II. Zeeman Pairs and the Galactic Magnetic Field. *Vincent L. Fish, Mark J. Reid, Alice L. Argon, & Karl M. Menten.* 596, 328 (2003)

ARGÜESO, F. Contributions of Point Extragalactic Sources to the Cosmic Microwave Background Bispectrum. *F. Argüeso, J. González-Nuevo, & L. Toffolatti.* 598, 86 (2003)

ARIMOTO, NOBUO. See KOMIYAMA, YUTAKA, et al. Discovery of Latent Star Formation in the Extended H I Gas around the Local Group Dwarf Irregular Galaxy NGC 6822.

ARISTIDI, E. See PRIEUR, J. L., et al. Speckle Observations of Composite Spectrum Stars. II. Differential Photometry of the Binary Components.

ARKHAROV, A. A. See VALENTINI, G., et al. Optical and Near-Infrared Photometry of the Type Ia Supernova 2000E in NGC 6951.

ARLANDINI, C. See REIFARTH, R., et al. Stellar Neutron Capture on Promethium: Implications for the s-Process Neutron Density.

ARMENGAUD, ERIC. Beryllium Abundances in F and G Dwarfs in the Pleiades and σ Persei Clusters from Keck High-Resolution Echelle Spectrometer Observations. *Ann Merchant Boesgaard, Eric Armengaud, & Jeremy R. King.* 582, 410 (2003)

Beryllium Abundances in F and G Dwarfs in the Coma Cluster and the Ursa Major Moving Group from Keck HIRES Observations. *Ann Merchant Boesgaard, Eric Armengaud, & Jeremy R. King.* 583, 955 (2003)

ARMITAGE, PHILIP J. A Reduced Efficiency of Terrestrial Planet Formation Following Giant Planet Migration. *Philip J. Armitage.* 582, L47 (2003)

On the Formation Timescale and Core Masses of Gas Giant Planets. *W. K. M. Rice & Philip J. Armitage.* 598, L55 (2003)

Axisymmetric Magnetohydrodynamic Simulations of the Collapsar Model for Gamma-Ray Bursts. *Daniel Proga, Andrew I. MacFadyen, Philip J. Armitage, & Mitchell C. Begelman.* 599, L5 (2003)

ARMOND, TINA. Blowout from IC 1396N: The Emergence of Herbig-Haro Flows from a Cloud Core. *Bo Reipurth, Tina Armond, Alex Raga, & John Bally.* 593, L47 (2003)

ARMSTRONG, E. See MIRABAL, N., et al. GRB 021004: A Possible Shell Nebula around a Wolf-Rayet Star Gamma-Ray Burst Progenitor.

ARMSTRONG, J. W. Stochastic Gravitational Wave Background: Upper Limits in the 10^{-6} to 10^{-3} Hz Band. *J. W. Armstrong, L. Iess, P. Tortora, & B. Bertotti.* 599, 806 (2003)

ARMSTRONG, JOHN T. Theoretical Limb Darkening for Classical Cepheids. II. Corrections for the Geometric Baade-Wesselink Method. *Massimo Marengo, Margarita Karovska, Dimitar D. Sasselov, Costas Papaliolios, John T. Armstrong, & Tyler E. Nordgren.* 589, 968 (2003)

ARMUS, LEE. A *Hubble Space Telescope*/WFPC2 Snapshot Survey of 2MASS-selected Red QSOs. *Andrew R. Marble, Dean C. Hines, Gary D. Schmidt, Paul S. Smith, Jason A. Surace, Lee Armus, Roc M. Cutri, & Brant O. Nelson.* 590, 707 (2003)

ARNABOLDI, M. Polar Ring Galaxies and the Tully-Fisher Relation: Implications for the Dark Halo Shape. *E. Iodice, M. Arnaboldi, F. Bournaud, F. Combes, L. S. Sparke, W. van Driel, & M. Capaccioli.* 585, 730 (2003)

ARNABOLDI, MAGDA. See NAPOLITANO, NICOLA R., et al. Intracluster Stellar Population Properties from N-Body Cosmological Simulations. I. Constraints at $z = 0$.

ARNAUD, JEAN. See HABBAL, SHADIA RIFAI, et al. On the Detection of the Signature of Silicon Nanoparticle Dust Grains in Coronal Holes.

ARNAUD, K. A. *Chandra* Detection of a Pulsar Wind Nebula Associated with Supernova Remnant 3C 396. *C. M. Olbert, J. W. Keohane, K. A. Arnaud, K. K. Dyer, S. P. Reynolds, & S. Safi-Harb.* 592, L45 (2003)

ARNDT, MARTINA BELZ. See HABBAL, SHADIA RIFAI, et al. On the Detection of the Signature of Silicon Nanoparticle Dust Grains in Coronal Holes.

ARNETT, D. The Salty Scrambled Egg: Detection of NaCl toward CRL 2688. *J. L. Highberger, K. J. Thomson, P. A. Young, D. Arnett, & L. M. Ziurys.* 593, 393 (2003)

ARNETT, DAVID. Stellar Hydrodynamics in Radiative Regions. *Patrick A. Young, Karen A. Knierman, Jane R. Rigby, & David Arnett.* 595, 1114 (2003)

A Model for the Formation of High-Density Clumps in Proto–Planetary Nebulae. *Patrick A. Young, J. L. Highberger, David Arnett, & L. M. Ziurys.* 597, L53 (2003)

ARONS, JONATHAN. Magnetars in the Metagalaxy: An Origin for Ultra–High-Energy Cosmic Rays in the Nearby Universe. *Jonathan Arons.* 589, 871 (2003)

ARP, HALTON C. QSOs Associated with Messier 82. *E. Margaret Burbidge, Geoffrey Burbidge, Halton C. Arp, & Stefano Zibetti.* 591, 690 (2003)

ARRAS, PHIL. Saturation of the r-Mode Instability. *Phil Arras, Eanna E. Flanagan, Sharon M. Morsink, A. Katrin Schenk, Saul A. Teukolsky, & Ira Wasserman.* 591, 1129 (2003)

A Free, Fast, Simple, and Efficient Total Variation Diminishing Magnetohydrodynamic Code. *Ue-Li Pen, Phil Arras, & ShingKwong Wong.* 149, 447 (2003)

ARRIBAS, S. See MCDOWELL, J. C., et al. *Chandra* Observations of Extended X-Ray Emission in Arp 220.

ARRIBAS, SANTIAGO. INTEGRAL Spectroscopy of IRAS 17208−0014: Implications for the Evolutionary Scenarios of Ultraluminous Infrared Galaxies. *Santiago Arribas & Luis Colina.* 591, 791 (2003)

ARRIETA, A. Broad Hα Wings in Nebulae around Evolved Stars and in Young Planetary Nebulae. *A. Arrieta & S. Torres-Peimbert.* 147, 97 (2003)

ARTUSA, D. R. See CRILL, B. P., et al. BOOMERANG: A Balloon-Borne Millimeter-Wave Telescope and Total Power Receiver for Mapping Anisotropy in the Cosmic Microwave Background.

ASAHARA, A. See ENOMOTO, R., et al. Search for TeV Gamma Rays from SN 1987A in 2001.

ASAI, AYUMI. Evolution of Conjugate Footpoints inside Flare Ribbons during a Great Two-Ribbon Flare on 2001 April 10. *Ayumi Asai, Takako T. Ishii, Hiroki Kurokawa, Takaaki Yokoyama, & Masumi Shimojo.* 586, 624 (2003)

ASCHWANDEN, MARKUS J. A New Method to Constrain the Iron Abundance from Cooling Delays in Coronal Loops. *Markus J. Aschwanden, Carolus J. Schrijver, Amy R. Winebarger, & Harry P. Warren.* 588, L49 (2003)

Observational Tests of Damping by Resonant Absorption in Coronal Loop Oscillations. *Markus J. Aschwanden, Richard W. Nightingale, Jesse Andries, Marcel Goossens, & Tom Van Doorsselaere.* 598, 1375 (2003)

ASENSIO RAMOS, A. Nonequilibrium CO Chemistry in the Solar Atmosphere. *A. Asensio Ramos, J. Trujillo Bueno, M. Carlsson, & J. Cernicharo.* 588, L61 (2003)

ASHLEY, M. C. See SMITH, D. A., et al. ROTSE-III Observations of the Early Afterglow from GRB 030329.

ASHMAN, K. M. Modeling the Dynamical Evolution of the M87 Globular Cluster System. *E. Vesperini, S. E. Zepf, A. Kundu, & K. M. Ashman.* 593, 760 (2003)

ASHOK, NAGARHALLI M. Remarkable Changes in the Near-Infrared Spectrum of the Nova-like Variable V4332 Sagittarii. *Dipankar P. K. Banerjee, Watson P. Varricatt, Nagarhalli M. Ashok, & Olli Launila.* 598, L31 (2003)

ASHOKA, B. N. See MUKADEM, ANJUM S., et al. Constraining the Evolution of ZZ Ceti.

ASLAN, ZEKI. See COLLEY, WESLEY N., et al. Around-the-Clock Observations of the Q9057+561A,B Gravitationally Lensed Quasar. II. Results for the Second Observing Season.

ASTIER, P. See KNOP, R. A., et al. New Constraints on Ω_M, Ω_Λ, and w from an Independent Set of 11 High-Redshift Supernovae Observed with the *Hubble Space Telescope*.

ATHEY, ALEX E. X-Ray Spectral Properties of Low-Mass X-Ray Binaries in Nearby Galaxies. *Jimmy A. Irwin, Alex E. Athey, & Joel N. Bregman.* 587, 356 (2003)

ATKINS, R. The High-Energy Gamma-Ray Fluence and Energy Spectrum of GRB 970417A from Observations with Milagrito. *R. Atkins, W. Benbow, D. Berley, M. L. Chen, D. G. Coyne, B. L. Dingus, D. E. Dorfan, R. W. Ellsworth, D. Evans, A. Falcone, L. Fleysher, R. Fleysher, G. Gisler, M. M. Gonzalez, J. A. Goodman, T. J. Haines, C. M. Hoffman, S. Hugenberger, L. A. Kelley, S. Klein, I. Leonor, J. F. McCullough, J. E. McEnery, R. S. Miller, A. I. Mincer, M. F. Morales, P. Nemethy, J. M. Ryan, F. W. Samuelson, B. Shen, A. Shoup, C. Sinnis, A. J. Smith, G. W. Sullivan, T. Tumer, K. Wang, M. O. Wascko, S. Westerhoff, D. A. Williams, T. Yang, & G. B. Yodh.* 583, 824 (2003)

See FALCONE, A., et al. Observation of GeV Solar Energetic Particles from the 1997 November 6 Event Using Milagrito.

Observation of TeV Gamma Rays from the Crab Nebula with Milagro Using a New Background Rejection Technique. *R. Atkins, W. Benbow, D. Berley, E. Blaufuss, J. Bussons, D. G. Coyne, R. S. Delay, T. DeYoung, B. L. Dingus, D. E. Dorfan, R. W. Ellsworth, A. Falcone, L. Fleysher, R. Fleysher, G. Gisler, M. M. Gonzalez, J. A. Goodman, T. J. Haines, E. Hays, C. M. Hoffman, L. A. Kelley, R. W. Laird, J. McCullough, J. E. McEnery, R. S. Miller, A. I. Mincer, M. F. Morales, P. Nemethy, D. Noyes, J. M. Ryan, F. W. Samuelson, M. Schneider, B. Shea, A. Shoup, G. Sinnis, A. J. Smith, G. W. Sullivan, O. T. Tumer, K. Wang, M. Wascko, D. A. Williams, S. Westerhoff, M. E. Wilson, X. Xu, & G. B. Yodh.* 595, 803 (2003)

ATKINSON, J. See MARCONI, A., et al. Is There Really a Black Hole at the Center of NGC 4041? Constraints from Gas Kinematics.

ATOYAN, ARMEN M. Neutral Beams from Blazar Jets. *Armen M. Atoyan & Charles D. Dermer.* 586, 79 (2003)

ATTEIA, J.-L. See CREW, G. B., et al. *HETE-2* Localization and Observation of the Bright, X-Ray–rich Gamma-Ray Burst GRB 021211.

AUBERT, DOMINIQUE. The Clustering of Intergalactic Metals. *Christophe Pichon, Evan Scannapieco, Bastien Aracil, Patrick Petitjean, Dominique Aubert, Jacqueline Bergeron, & Stéphane Colombi.* 597, L97 (2003)

AUDARD, MARC. Are Coronae of Magnetically Active Stars Heated by Flares? II. Extreme Ultraviolet and X-Ray Flare Statistics and the Differential Emission Measure Distribution. *Manuel Güdel, Marc Audard, Vinay L. Kashyap, Jeremy J. Drake, & Edward F. Guinan.* 582, 423 (2003)

Separating the X-Ray Emissions of UV Ceti A and B with *Chandra*. *Marc Audard, Manuel Güdel, & Stephen L. Skinner.* 589, 983 (2003)

AUGELLO, G. *BeppoSAX* Serendipitous Discovery of the X-Ray Pulsar SAX J1802.7−2017. *G. Augello, R. Iaria, N. R. Robba, T. Di Salvo, L. Burderi, G. Lavagetto, & L. Stella.* 596, L63 (2003)

AUGEREAU, J.-C. Ground-based Near-Infrared Imaging of the HD 141569 Circumstellar Disk. *A. Boccaletti, J.-C. Augereau, F. Marchis, & J. Hahn.* 585, 494 (2003)

AUSSEL, H. A Submillimeter and Radio Survey of Gamma-Ray Burst Host Galaxies: A Glimpse into the Future of Star Formation Studies. *E. Berger, L. L. Cowie, S. R. Kulkarni, D. A. Frail, H. Aussel, & A. J. Barger.* 588, 99 (2003)

AUVERGNE, M. A Search for Small Kuiper Belt Objects by Stellar Occultations. *F. Roques, M. Moncuquet, N. Lavillonière, M. Auvergne, M. Chevreton, F. Colas, & J. Lecacheux.* 594, L63 (2003)

AVGOLOUPIS, STAVROS I. See HAWLEY, SUZANNE L., et al. Multiwavelength Observations of Flares on AD Leonis.

AVILA-REESE, VLADIMIR. The Effects of Non-Gaussian Initial Conditions on the Structure and Substructure of Cold Dark Matter Halos. *Vladimir Avila-Reese, Pedro Colín, Gabriella Piccinelli, & Claudio Firmani.* 598, 36 (2003)

AWAKI, H. Discovery of Bright Variable X-Ray Sources in NGC 569 with *Chandra*. *K. Heike, H. Awaki, Y. Misao, K. Hayashida, & K. A. Weaver.* 591, L99 (2003)

AXELROD, T. S. See PRICE, P. A., et al. GRB 010921: Strong Limits on an Underlying Supernova from the *Hubble Space Telescope*.

See PRICE, P. A., et al. Discovery of GRB 020405 and Its Late Red Bump.

AXON, D. J. See MARCONI, A., et al. Is There Really a Black Hole at the Center of NGC 4041? Constraints from Gas Kinematics.

AYABE, S. See AMENOMORI, M., et al. Multi-TeV Gamma-Ray Flares from Markarian 421 in 2000 and 2001 Observed with the Tibet Air Shower Array.

AYRES, THOMAS R. *Chandra, Extreme Ultraviolet Explorer*, and Very Large Array Observations of the Active Binary System σ^2 Coronae Borealis. *Rachel A. Osten, Thomas R. Ayres, Alexander Brown, Jeffrey L. Linsky, & Anita Krishnamurthi.* 582, 1073 (2003)

Space Telescope Imaging Spectrograph Survey of Far-Ultraviolet Coronal Forbidden Lines in Late-Type Stars. *Thomas R. Ayres, Alexander Brown, Graham M. Harper, Rachel A. Osten, Jeffrey L. Linsky, Brian E. Wood, & Seth Redfield.* 583, 963 (2003).

A *Far Ultraviolet Spectroscopic Explorer* Survey of Coronal Forbidden Lines in Late-Type Stars. *Seth Redfield, Thomas R. Ayres, Jeffrey L. Linsky, Thomas B. Ake, A. K. Dupree, Richard D. Robinson, & Peter R. Young.* 585, 993 (2003)

An Estimate of the Sun's *ROSAT*-PSPC X-Ray Luminosities Using *SNOE*-SXP Measurements. *Philip G. Judge, Stanley C. Solomon, & Thomas R. Ayres.* 593, 534 (2003)

Buried Alive in the Coronal Graveyard. *Thomas R. Ayres, Alexander Brown, & Graham M. Harper.* 598, 610 (2003)

BAADE, DIETRICH. See WANG, LIFAN, et al. Spectropolarimetry of SN 2001el in NGC 1448: Asphericity of a Normal Type Ia Supernova.

Spectropolarimetry of the Type Ic Supernova SN 2002ap in M74: More Evidence for Asymmetric Core Collapse. *Lifan Wang, Dietrich Baade, Peter Höflich, & J. Craig Wheeler.* 592, 457 (2003)

See KASEN, DANIEL, et al. Analysis of the Flux and Polarization Spectra of the Type Ia Supernova SN 2001el: Exploring the Geometry of the High-Velocity Ejecta.

BABA, DAISUKE. See JIANG, ZHIBO, et al. A Near-Infrared Study of the Star-Forming Region S269.

BABUL, ARIF. On the Relationship between Cooling Flows and Bubbles. *Ian G. McCarthy, Arif Babul, Neal Katz, & Michael L. Balogh.* 587, L75 (2003)

Cluster Sunyaev-Zeldovich Effect Scaling Relations. *Ian G. McCarthy, Arif Babul, Gilbert P. Holder, & Michael L. Balogh.* 591, 515 (2003)

The Sunyaev-Zeldovich Effect Signature of Excess Entropy in Distant, Massive Clusters. *Ian G. McCarthy, Gilbert P. Holder, Arif Babul, & Michael L. Balogh.* 591, 526 (2003)

BACCIGALUPI, C. Probing Dark Energy with the Cosmic Microwave Background: Projected Constraints from the *Wilkinson Microwave Anisotropy Probe* and *Planck*. *Amedeo Balbi, C. Baccigalupi, F. Perrotta, S. Matarrese, & N. Vittorio.* 588, L5 (2003)

BACH, DAVID R. The Interaction of Supernova Remnants with Interstellar Clouds: Experiments on the Nova Laser. *Richard I. Klein, Kimberly S. Budil, Theodore S. Perry, & David R. Bach.* 583, 245 (2003)

BACHEV, R. An Optical Spectroscopic Atlas of Low-Redshift Active Galactic Nuclei. *P. Marziani, J. W. Sulentic, R. Zamanov, M. Calvini, D. Dultzin-Hacyan, R. Bachev, & T. Zwitter.* 145, 199 (2003)

Radio-loud Active Galactic Nuclei in the Context of the Eigenvector 1 Parameter Space. *J. W. Sulentic, S. Zamfir, P. Marziani, R. Bachev, M. Calvani, & D. Dultzin-Hacyan.* 597, L17 (2003)

BACHILLER, R. Multiple Molecular H_2 Outflows in AFGL 618. *P. Cox, P. J. Huggins, J.-P. Maillard, C. Muthu, R. Bachiller, & T. Forveille.* 586, L87 (2003)

First Evidence of Dusty Disks around Herbig Be Stars. *A. Fuente, A. Rodríguez-Franco, L. Testi, A. Natta, R. Bachiller, & R. Neri.* 598, L39 (2003)

BACKER, D. C. Gravitational Waves Probe the Coalescence Rate of Massive Black Hole Binaries. *A. H. Jaffe & D. C. Backer.* 583, 616 (2003)

BACKER, DON. See BECKER, WERNER, et al. *Chandra X-Ray Observatory* Observations of the Globular Cluster M28 and Its Millisecond Pulsar PSR 1821−24.

BACKER, DONALD C. Interferometric Detection of Linear Polarization from Sagittarius A* at 230 GHz. *Geoffrey C. Bower, Melvyn C. H. Wright, Heino Falcke, & Donald C. Backer.* 588, 331 (2003)

BACKMAN, D. E. The Inner Rings of β Pictoris. *Z. Wahhaj, D. W. Koerner, M. E. Ressler, M. W. Werner, D. E. Backman, & A. I. Sargent.* 584, L27 (2003)

BACMANN, A. CO Depletion and Deuterium Fractionation in Prestellar Cores. *A. Bacmann, B. Lefloch, C. Ceccarelli, J. Steinacker, A. Castets, & L. Loinard.* 585, L55 (2003)

BADENES, CARLES. Thermal X-Ray Emission from Shocked Ejecta in Type Ia Supernova Remnants. Prospects for Explosion Mechanism Identification. *Carles Badenes, Eduardo Bravo, Kazimierz J. Borkowski, & Inmaculada Domínguez.* 593, 358 (2003)

BADNELL, N. R. Assessment of the Fluorescence and Auger Database used in Plasma Modeling. *T. W. Gorczyca, C. N. Kodituwakku, K. T. Korista, O. Zatsarinny, N. R. Badnell, E. Behar, M. H. Chen, & D. W. Savin.* 592, 636 (2003)

BAEK, CHANG HYUN. Two-dimensional Axisymmetric Collapse of Thermally Unstable Primordial Clouds. *Chang Hyun Baek, Hyesung Kang, & Dongsu Ryu.* 584, 675 (2003)

BAGANOFF, F. K. See MUNO, M. P., et al. A Deep *Chandra* Catalog of X-Ray Point Sources toward the Galactic Center.

Chandra X-Ray Spectroscopic Imaging of Sagittarius A* and the Central Parsec of the Galaxy. *F. K. Baganoff, Y. Maeda, M. Morris, M. W. Bautz, W. N. Brandt, W. Cui, J. P. Doty, E. D. Feigelson, G. P. Garmire, S. H. Pravdo, G. R. Ricker, & L. K. Townsley.* 591, 891 (2003)

The X-Ray Binary GRS 1741.9−2853 in Outburst and Quiescence. *M. P. Muno, F. K. Baganoff, & J. S. Arabadjis.* 598, 474 (2003)

X-Ray Sources with Periodic Variability in a Deep *Chandra* Image of the Galactic Center. *M. P. Muno, F. K. Baganoff, M. W. Bautz, W. N. Brandt, G. P. Garmire, & G. R. Ricker.* 599, 465 (2003)

BAGANOFF, FREDERICK K. A Giant Outburst at Millimeter Wavelengths in the Orion Nebula. *Geoffrey C. Bower, Richard L. Plambeck, Alberto Bolatto, Nate McCrady, James R. Graham, Imke de Pater, Michael C. Liu, & Frederick K. Baganoff.* 598, 1140 (2003)

BAHCALL, NETA. See SZALAY, ALEXANDER S., et al. Karhunen-Loève Estimation of the Power Spectrum Parameters from the Angular Distribution of Galaxies in Early Sloan Digital Sky Survey Data.

BAHCALL, NETA A. The Cluster Mass Function from Early Sloan Digital Sky Survey Data: Cosmological Implications. *Neta A. Bahcall, Feng Dong, Paul Bode, Rita Kim, James Annis, Timothy A. McKay, Sarah Hansen, Josh Schroeder, James Gunn, Jeremiah P. Ostriker, Marc Postman, Robert C. Nichol, Chris Miller, Tomotsugu Goto, Jon Brinkmann, Gillian R. Knapp, Don Q. Lamb, Donald P. Schneider, Michael S. Vogeley, & Donald G. York.* 585, 182 (2003)

See HOGG, DAVID W., et al. The Overdensities of Galaxy Environments as a Function of Luminosity and Color.

Cosmological Contraints from a Combined Analysis of the Cluster Mass Function and Microwave Background Anisotropies. *Alessandro Melchiorri, Paul Bode, Neta A. Bahcall, & Joseph Silk.* 586, L1 (2003)

The Amplitude of Mass Fluctuations. *Paul Bode & Neta A. Bahcall.* 588, L1 (2003)

See BLANTON, MICHAEL R., et al. The Galaxy Luminosity Function and Luminosity Density at Redshift $z = 0.1$.

See BLANTON, MICHAEL R., et al. The Broadband Optical Properties of Galaxies with Redshifts $0.02 < z < 0.22$.

See BUDAVÁRI, TAMÁS, et al. Angular Clustering with Photometric Redshifts in the Sloan Digital Sky Survey: Bimodality in the Clustering Properties of Galaxies.

A Merged Catalog of Clusters of Galaxies from Early Sloan Digital Sky Survey Data. *Neta A. Bahcall, Timothy A. McKay, James Annis, Rita S. J. Kim, Feng Dong, Sarah Hansen, Tomo Goto, James E. Gunn, Chris Miller, R. C. Nichol, Marc Postman, Don Schneider, Josh Schroeder, Wolfgang Voges, Jon Brinkmann, & Masataka Fukugita.* 148, 243 (2003)

The Richness-dependent Cluster Correlation Function: Early Sloan Digital Sky Survey Data. *Neta A. Bahcall, Feng Dong, Lei Hao, Paul Bode, Jim Annis, James E. Gunn, & Donald P. Schneider.* 599, 814 (2003)

BAI, G. S. Chemical Abundances of Old Metal-rich Stars in the Solar Neighborhood. *Y. Q. Chen, G. Zhao, P. E. Nissen, G. S. Bai, & H. M. Qiu.* 591, 925 (2003)

BAI, J. M. Radio/X-Ray Offsets of Large-Scale Jets Caused by Synchrotron Time Lags. *J. M. Bai & Myung Gyoon Lee.* 585, L113 (2003)

BAI, T. Hot Spots for Solar Flares Persisting for Decades: Longitude Distributions of Flares of Cycles 19–23. *T. Bai.* 585, 1114 (2003)

Periodicities in Solar Flare Occurrence: Analysis of Cycles 19–23. *T. Bai.* 591, 406 (2003)

BAI, X. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

BAILER-JONES, CORYN A. L. Natural Coronagraphics Observations of the Eclipsing T Tauri System KH 15D: Evidence of Accretion and Bipolar Outflow in a Weak-Line T Tauri Star. *Catrina M. Hamilton, William Herbst, Reinhard Mundt, Coryn A. L. Bailer-Jones, & Christopher M. Johns-Krull.* 591, L45 (2003)

BAILES, M. Self-Consistency of Relativistic Observables with General Relativity in the White Dwarf–Neutron Star Binary PSR J1141−6545. *M. Bailes, S. M. Ord, H. S. Knight, & A. W. Hotan.* 595, L49 (2003)

PSR J1909−3744: A Binary Millisecond Pulsar with a Very Small Duty Cycle. *B. A. Jacoby, M. Bailes, M. H. van Kerkwijk, S. Ord, A. Hotan, S. R. Kulkarni, & S. B. Anderson.* 599, L99 (2003)

BAILIN, JEREMY. Evidence for Coupling between the Sagittarius Dwarf Galaxy and the Milky Way Warp. *Jeremy Bailin.* 583, L79 (2003)

BAILLON, P. See KERINS, E., et al. Theory of Pixel Lensing toward M31. II. The Velocity Anisotropy and Flattening of the MACHO Distribution.

BAILYN, C. D. Can High-Velocity Stars Reveal Black Holes in Globular Clusters? *G. A. Drukier & C. D. Bailyn.* 597, L125 (2003)

BAINES, G. P. The Discovery of H_2O Maser Emission in Seven Active Galactic Nuclei and at High Velocities in the Circinus Galaxy. *L. J. Greenhill, P. T. Kondrakto, J. E. J. Lovell, T. B. H. Kuiper, J. M. Moran, D. L. Jauncey, & G. P. Baines.* 582, L11 (2003)

BAKER, A. C. See MCDOWELL, J. C., et al. *Chandra* Observations of Extended X-Ray Emission in Arp 220.

BAKER, ANDREW J. Spatially Resolved Millimeter Interferometry of SMM J02399−0136: A Very Massive Galaxy at $z = 2.8$. *Reinhard Genzel, Andrew J. Baker, Linda J. Tacconi, Dieter Lutz, Pierre Cox, Stéphane Guilloteau, & Alain Omont.* 584, 633 (2003)

BAKER, EMILY J. See GNEDIN, NICKOLAY Y., et al. Linear Gas Dynamics in the Expanding Universe.

BAKOS, G. A. Detection of the Evolutionary Stages of Variables in M3. *J. Jurcsik, J. M. Benko, G. A. Bakos, B. Szeidl, & R . Szabó.* 597, L49 (2003)

BALASUBRAMANIAM, K. S. Chirality of Chromospheric Filaments. *Alexei A. Pevtsov, K. S. Balasubramaniam, & Joey W. Rogers.* 595, 500 (2003)

BALBI, AMEDEO. Probing Dark Energy with the Cosmic Microwave Background: Projected Constraints from the *Wilkinson Microwave Anisotropy Probe* and *Planck*. *Amedeo Balbi, C. Baccigalupi, F. Perrotta, S. Matarrese, & N. Vittorio.* 588, L5 (2003)

BALBUS, STEVEN A. Gap Formation by Planets in Turbulent Protostellar Disks. *Wayne F. Winters, Steven A. Balbus, & John F. Hawley.* 589, 543 (2003)

BALCELLS, M. The Central Mass Distribution in Dwarf and Low Surface Brightness Galaxies. *R. A. Swaters, B. F. Madore, Frank C. van den Bosch, & M. Balcells.* 583, 732 (2003)

BALCELLS, MARC. Galactic Bulges from *Hubble Space Telescope* Near-Infrared Camera Multi-Object Spectrometer Observations: The Lack of $r^{1/4}$ Bulges. *Marc Balcells, Alister W. Graham, Lilian Domínguez-Palmero, & Reynier F. Peletier.* 582, L79 (2003)

The Near-Infrared Ca II Triplet–σ Relation for Bulges of Spiral Galaxies. *Jesús Falcón-Barroso, Reynier F. Peletier, Alexandre Vazdekis, & Marc Balcells.* 588, L17 (2003)

K_s Number Counts in the Groth and Coppi Fields. *David Cristóbal-Hornillos, Marc Balcells, Mercedes Prieto, Rafael Guzmán, Jesús Gallego, Nicolás Cardiel, Ángel Serrano, & Roser Pelló.* 595, 71 (2003)

BALDACCI, LARA. RR Lyrae and Short-Period Variable Stars in the Dwarf Irregular Galaxy NGC 6822. *Gisella Clementini, Enrico V. Held, Lara Baldacci, & Luca Rizzi.* 588, L85 (2003)

BALDI, A. An *XMM-Newton* and *Chandra* Investigation of the Nuclear Accretion in the Sombrero Galaxy (NGC 4594). *S. Pellegrini, A. Baldi, G. Fabbiano, & D.-W. Kim.* 597, 175 (2003)

BALDRY, IVAN K. See GLAZEBROOK, KARL, et al. The Sloan Digital Sky Survey: The Cosmic Spectrum and Star Formation History.

Constraints on a Universal Initial Mass Function from Ultraviolet to Near-Infrared Galaxy Luminosity Densities. *Ivan K. Baldry & Karl Glazebrook.* 593, 258 (2003)

See BLANTON, MICHAEL R., et al. The Broadband Optical Properties of Galaxies with Redshifts $0.02 < z < 0.22$.

BALDWIN, J. A. The Mass of Quasar Broad Emission Line Regions. *J. A. Baldwin, G. J. Ferland, K. T. Korista, F. Hamann, & M. Dietrich.* 582, 590 (2003)

Chemical Abundances in Broad Emission Line Regions: The "Nitrogen-loud" Quasi-Stellar Object Q0353−383. *J. A. Baldwin, F. Hamann, K. T. Korista, G. J. Ferland, M. Dietrich, & C. Warner.* 583, 649 (2003)

BALDWIN, JACK A. Introducing EMILI: Computer-Aided Emission Line Identification. *Brian Sharpee, Robert Williams, Jack A. Baldwin, & Peter A. M. van Hoof.* 149, 155 (2003)

BALE, S. D. Electron Properties and Coulomb Collisions in the Solar Wind at 1 AU: *WIND* Observations. *C. Salem, D. Hubert, C. Lacombe, S. D. Bale, A. Mangeney, D. E. Larson, & R. P. Lin.* 585, 1147 (2003)

BALICK, BRUCE. A Compact X-Ray Source and Possible X-Ray Jets within the Planetary Nebula Menzel 3. *Joel H. Kastner, Bruce Balick, Eric G. Blackman, Adam Frank, Noam Soker, Saeqa D. Vrtilek, & Jingqiang Li.* 591, L37 (2003)

Space Telescope Imaging Spectrograph Slitless Observations of Small Magellanic Cloud Planetary Nebulae: A Study on Morphology, Emission-Line Intensity, and Evolution. *Letizia Stanghellini, Richard A. Shaw, Bruce Balick, Max Mutchler, J. Chris Blades, & Eva Villaver.* 596, 997 (2003)

BALLANTYNE, D. R. The Contribution of Particle Impact to the Production of Fe Kα Emission from Accreting Black Holes. *D. R. Ballantyne & A. C. Fabian.* 592, 1089 (2003)

BALLEREAU, D. See MARCHENKO, S. V., et al. The Unusual 2001 Periastron Passage in the "Clockwork" Colliding-Wind Binary WR 140.

BALLESTEROS-PAREDES, J. A Holistic Scenario of Turbulent Molecular Cloud Evolution and Control of the Star Formation Efficiency: First Tests. *E. Vázquez-Semadeni, J. Ballesteros-Paredes, & R. S. Klessen.* 585, L131 (2003)

BALLESTEROS-PAREDES, JAVIER. Dynamic Cores in Hydrostatic Disguise. *Javier Ballesteros-Paredes, Ralf S. Klessen, & Enrique Vázquez-Semadeni.* 592, 188 (2003)

BALLINAS, ISIDRO. Technique for Detecting Warm-Hot Intergalactic Gas in Quasar Ultraviolet Spectra. *Luc Binette, Mario Rodríguez-Martínez, Sinhue Haro-Corzo, & Isidro Ballinas.* 590, 58 (2003)

BALLO, LUCIA. Detection of X-Ray Emission from the Eastern Radio Lobe of Pictor A. *Paola Grandi, Matteo Guainazzi, Laura Maraschi, Raffaella Morganti, Roberto Fusco-Femiano, Mariateresa Fiocchi, Lucia Ballo, & Fabrizio Tavecchio.* 586, 123 (2003)

BALLY, JOHN. X-Rays from the Vicinity of the Protostar L1551 IRS 5: Reflection or Fast Shocks? *John Bally, Eric Feigelson, & Bo Reipurth.* 584, 843 (2003)

Numerous Proplyd Candidates in the Harsh Environment of the Carina Nebula. *Nathan Smith, John Bally, & Jon A. Morse.* 587, L105 (2003)

Evidence for Grain Growth in the Protostellar Disks of Orion. *R. Y. Shuping, John Bally, Mark Morris, & Henry Throop.* 587, L109 (2003)

Blowout from IC 1396N: The Emergence of Herbig-Haro Flows from a Cloud Core. *Bo Reipurth, Tina Armond, Alex Raga, & John Bally.* 593, L47 (2003)

BALMAN, S. See NESS, J.-U., et al. A *Chandra* Low Energy Transmission Grating Spectrometer Observation of V4743 Sagittarii: A Supersoft X-Ray Source and a Violently Variable Light Curve.

BALOGH, A. Possible Distortion of the Interplanetary Magnetic Field by the Dust Trail of Comet 122P/de Vico. *G. H. Jones, A. Balogh, C. T. Russell, & M. K. Dougherty.* 597, L61 (2003)

BALOGH, MICHAEL L. See GOMEZ, PERCY L., et al. Galaxy Star Formation as a Function of Environment in the Early Data Release of the Sloan Digital Sky Survey.

On the Relationship between Cooling Flows and Bubbles. *Ian G. McCarthy, Arif Babul, Neal Katz, & Michael L. Balogh.* 587, L75 (2003)

Cluster Sunyaev-Zeldovich Effect Scaling Relations. *Ian G. McCarthy, Arif Babul, Gilbert P. Holder, & Michael L. Balogh.* 591, 515 (2003)

The Sunyaev-Zeldovich Effect Signature of Excess Entropy in Distant, Massive Clusters. *Ian G. McCarthy, Gilbert P. Holder, Arif Babul, & Michael L. Balogh.* 591, 526 (2003)

On the Origin of Intracluster Entropy. *G. Mark Voit, Michael L. Balogh, Richard G. Bower, Cedric G. Lacey, & Greg L. Bryan.* 593, 272 (2003)

BALSARA, DINSHAW. Numerical Study of Compressible Magnetohydrodynamic Turbulence in Two Dimensions. *Hyesook Lee, Dongsu Ryu, Jongsoo Kim, T. W. Jones, & Dinshaw Balsara.* 594, 627 (2003)

BALTZ, EDWARD A. Event Rates and Timescale Distributions from Realistic Microlensing Models of M31. *Edward A. Baltz, Geza Gyuk, & Arlin Crotts.* 582, 30 (2003)

BAMBA, AYA. *Chandra* Observations of a Nonthermal Supernova Remnant Candidate AX J1843.8−0352 and Its Surroundings. *Masaru Ueno, Aya Bamba, Katsuji Koyama, & Ken Ebisawa.* 588, 338 (2003)

Diffuse Hard X-Ray Sources Discovered with the *ASCA* Galactic Plane Survey. *Aya Bamba, Masaru Ueno, Katsuji Koyama, & Shigeo Yamauchi.* 589, 253 (2003)

Small-Scale Structure of the SN 1006 Shock with *Chandra* Observations. *Aya Bamba, Ryo Yamazaki, Masaru Ueno, & Katsuji Koyama.* 589, 827 (2003)

BAND, DAVID L. Comparison of the Gamma-Ray Burst Sensitivity of Different Detectors. *David L. Band.* 588, 945 (2003)

BANDAY, A. J. *COBE* DMR–normalized Dark Energy Cosmogony. *Pia Mukherjee, A. J. Banday, Alain Riazuelo, Krzysztof M. Górski, & Bharat Ratra.* 598, 767 (2003)

BANDYOPADHYAY, R. M. See TOURNEAR, D., et al. X-Ray Bursts in Neutron Star and Black Hole Binaries from Unconvetional Stellar Aspect Experiment and *Rossi X-Ray Timing Explorer* Data: Detections and Upper Limits.

BANERJEE, DIPANKAR P. K. Remarkable Changes in the Near-Infrared Spectrum of the Nova-like Variable V4332 Sagittarii. *Dipankar P. K. Banerjee, Watson P. Varricatt, Nagarhalli M. Ashok, & Olli Launila.* 598, L31 (2003)

BANIA, T. M. Resolving the Kinematic Distance Ambiguity toward Galactic H II Regions. *Michal A. Kolpak, James M. Jackson, T. M. Bania, D. P. Clemens, & John M. Dickey.* 582, 756 (2003)

See KRAEMER, KATHLEEN E., et al. Five Star-forming Cores in the Galactic Ring Survey: A Mid-Infrared Study.

BARAFFE, ISABELLE. A *Hubble Space Telescope* Wide Field Planetary Camera 2 Survey for Brown Dwarf Binaries in the α Persei and the Pleiades Open Clusters. *Eduardo L. Martín, David Barrado y Navascués, Isabelle Baraffe, Hervé Bouy, & Scott Dahm.* 594, 525 (2003)

BARATTA, G. A. The Effects of Ion Irradiation on the Evolution of the Carrier of the 3.4 Micron Interstellar Absoprtion Band. *V. Mennella, G. A. Baratta, A. Esposito, G. Ferini, & Y. J. Pendleton.* 587, 727 (2003)

BARBEE, TROY W., II. The Solar Chromosphere/Corona Interface. I. Far-Ultraviolet to Extreme-Ultraviolet Observations and Modeling of Unresolved Coronal Funnels. *Dennis S. Martínez-Galarce, Arthur B. C. Walker II, Troy W. Barbee II, & Richard B. Hoover.* 585, 1095 (2003)

BARBUY, BEATRIZ. Oxygen Abundance in the Template Halo Giant HD 122563. *Beatriz Barbuy, Jorge Meléndez, Monique Spite, Francois Spite, Eric Depagne, Vanessa Hill, Roger Cayrel, Piercarlo Bonifacio, Augusto Damineli, & Carlos A.O. Torres.* 588, 1072 (2003)

Detailed Analysis of Nearby Bulgelike Dwarf Stars. III. α-Element and Heavy-Element Abundances. *Luciana Pompéia, Beatriz Barbuy, & Michel Grenon.* 592, 1173 (2003)

BARCONS, XAVIER. Testing the Binary Black Hole Paradigm through the Fe Kα Line Profile: Application to 3C 273. *Diego F. Torres, Gustavo E. Romero, Xavier Barcons, & Youjun Lu.* 596, L31 (2003)

BARDAYAN, D. W. A New ^{17}F$(p, \gamma)^{18}$Ne Reaction Rate and Its Implications for Nova Nucleosynthesis. *S. Parete-Koon, W. R. Hix, M. S. Smith, S. Starrfield, D. W. Bardayan, M. W. Guidry, & A. Mezzacappa.* 598, 1239 (2003)

Barge, P. KH 15D: A Star Eclipsed by a Large-Scale Dusty Vortex? *P. Barge & M. Viton.* 593, L117 (2003)

Barger, A. J. The Redshift Evolution of the 2–8 keV X-Ray Luminosity Function. *L. L. Cowie, A. J. Barger, M. Bautz, W. N. Brandt, & G. P. Garmire.* 584, L57 (2003)

Very High Redshift X-Ray–selected Active Galactic Nuclei in the *Chandra* Deep Field–North. *A. J. Barger, L. L. Cowie, P. Capak, D. M. Alexander, F. E. Bauer, W. N. Brandt, G. P. Garmire, & A. E. Hornschemeier.* 584, L61 (2003)

See Chapman, S. C., et al. The Properties of Microjansky Radio Sources in the Hubble Deep Field–North, SSA 13, and SSA 22 Fields.

Imaging Large-Scale Structure in the X-Ray Sky. *Yuxuan Yang, R. F. Mushotzky, A. J. Barger, L. L. Cowie, D. B. Sanders, & A. T. Steffen.* 585, L85 (2003)

A Submillimeter and Radio Survey of Gamma-Ray Burst Host Galaxies: A Glimpse into the Future of Star Formation Studies. *E. Berger, L. L. Cowie, S. R. Kulkarni, D. A. Frail, H. Aussel, & A. J. Barger.* 588, 99 (2003)

The Changing Active Galactic Nucleus Population. *A. T. Steffen, A. J. Barger, L. L. Cowie, R. F. Mushotzky, & Y. Yang.* 596, L23 (2003)

Barger, Troy. Radiative Relaxation and Isomeric Branching of Highly Excited H/C/N: The Importance of Delocalized Vibrational States. *Troy Barger, Alec M. Wodtke, & Joel M. Bowman.* 587, 841 (2003)

Barker, Michael K. A Limit on the Cosmological Mass Density and Power Spectrum from the Rotation Curves of Low Surface Brightness Galaxies. *Stacy S. McGaugh, Michael K. Barker, & W. J. G. de Blok.* 584, 566 (2003)

Barkhouse, Wayne A. Extraordinary Diffuse Light in Hickson Compact Group 90. *P. M. White, G. Bothun, Martin A. Guerrero, Michael J. West, & Wayne A. Barkhouse.* 585, 739 (2003)

Barlow, Tom A. A Measurement of the Temperature-Density Relation in the Intergalactic Medium Using a New Lyα Absorption Line Fitting Method: Erratum (ApJ, 562, 52 [2001]). *Patrick McDonald, Jordi Miralda-Escudé, Michael Rauch, Wallace L. W. Sargent, Tom A. Barlow, & Renyue Cen.* 598, 712 (2003) (Orig. paper in 562, 52 (2001))

Barnes, C. See Page, L., et al. The Optical Design and Characterization of the *Microwave Anisotropy Probe*.

See Bennett, C. L., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Preliminary Maps and Basic Results.

See Jarosik, N., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: On-Orbit Radiometer Characterization.

See Page, L., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Beam Profiles and Window Functions.

First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Galactic Signal Contamination from Sidelobe Pickup. *C. Barnes, R. S. Hill, G. Hinshaw, L. Page, C. L. Bennett, M. Halpern, N. Jarosik, A. Kogut, M. Limon, S. S. Meyer, G. S. Tucker, E. Wollack, & E. L. Wright.* 148, 51 (2003)

See Hinshaw, G., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Data Processing Methods and Systematic Errors Limits.

See Hinshaw, G., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: The Angular Power Spectrum.

See Kogut, A., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Temperature-Polarization Correlation.

See Page, L., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Interpretation of the TT and TE Angular Power Spectrum Peaks.

Barnes, David G. The Magellanic Stream, High-Velocity Clouds, and the Sculptor Group. *Mary E. Putman, Lister Staveley-Smith, Kenneth C. Freeman, Brad K. Gibson, & David G. Barnes.* 586, 170 (2003)

Barnes, G. Photospheric Magnetic Field Properties of Flaring versus Flare-quiet Active Regions. I. Data, General Approach, and Sample Results. *K. D. Leka & G. Barnes.* 595, 1277 (2003)

Photospheric Magnetic Field Properties of Flaring versus Flare-Quiet Active Regions. III. Discriminant Analysis. *K. D. Leka & G. Barnes.* 595, 1296 (2003)

Barnes, Jason W. Measuring the Oblateness and Rotation of Transiting Extrasolar Giant Planets. *Jason W. Barnes & Jonathan J. Fortney.* 588, 545 (2003)

Barnes, Sydney A. On the Rotational Evolution of Solar- and Late-Type Stars, Its Magnetic Origins, and the Possibility of Stellar Gyrochronology. *Sydney A. Barnes.* 586, 464 (2003)

A Connection between the Morphology of the X-Ray Emission and Rotation for Solar-Type Stars in Open Clusters. *Sydney A. Barnes.* 586, L145 (2003)

Barnes, Thomas G., III. A Bayesian Analysis of the Cepheid Distance Scale. *Thomas G. Barnes III, W. H. Jefferys, J. O. Berger, Peter J. Mueller, K. Orr, & R. Rodriguez.* 592, 539 (2003)

Barnor, Henry A. Pulsar Scintillation Arcs. I. Frequency Dependence. *Alex S. Hill, Daniel R. Stinebring, Henry A. Barnor, Daniel E. Berwick, & Aaron B. Webber.* 599, 457 (2003)

Baron, E. Determination of Primordial Metallicity and Mixing in the Type II-P Supernova 1993W. *E. Baron, Peter E. Nugent, David Branch, Peter H. Hauschildt, M. Turatto, & E. Cappellaro.* 586, 1199 (2003)

Detectibility of Mixed Unburnt C+O in Type Ia Supernova Spectra. *E. Baron, Eric J. Lentz, & Peter H. Hauschildt.* 588, L29 (2003)

See Kasen, Daniel, et al. Analysis of the Flux and Polarization Spectra of the Type Ia Supernova SN 2001el: Exploring the Geometry of the High-Velocity Ejecta.

Barouch, G. See Ahrens, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

Barrado y Navascues, D. New Low-Mass Members of the Taurus Star-forming Region. *K. L. Luhman, Cesar Briceno, John R. Stauffer, Lee Hartmann, D. Barrado y Navascues, & Nelson Caldwell.* 590, 348 (2003)

Barrado y Navascues, David. Magellan Echelle Spectroscopy of TW Hydrae Brown Dwarfs. *Subhanjoy Mohanty, Ray Jayawardhana, & David Barrado y Navascues.* 593, L109 (2003)

A *Hubble Space Telescope* Wide Field Planetary Camera 2 Survey for Brown Dwarf Binaries in the α Persei and the Pleiades Open Clusters. *Eduardo L. Martín, David Barrado y Navascués, Isabelle Baraffe, Hervé Bouy, & Scott Dahm.* 594, 525 (2003)

Barraud, C. See Crew, G. B., et al. *HETE-2* Localization and Observation of the Bright, X-Ray–rich Gamma-Ray Burst GRB 021211.

Barret, Didier. Correlated Timing and Spectral Behavior of 4U 1705−44. *Jean-Francois Olive, Didier Barret, & Marek Gierlinski.* 583, 416 (2003)

Barrientos, L. Felipe. The Incidence of Strong-Lensing Clusters in the Red-Sequence Cluster Survey. *Michael D. Gladders, Henk Hoekstra, H. K. C. Yee, Patrick B. Hall, & L. Felipe Barrientos.* 593, 48 (2003)

Evolution of Cluster Elliptical Galaxies. *L. Felipe Barrientos & Simon J. Lilly.* 596, 129 (2003)

Gemini-South + FLAMINGOS Demonstration Science: Near-IR Spectroscopy of the $z = 5.77$ Quasar SDSS J083643.85+005453.3. *Daniel Stern, Pat Hall, L. Felipe Barrientos, Andrew J. Bunker, Richard Elston, M. J. Ledlow, S. Nicholas Raines, & Jon Willis.* 596, L39 (2003)

Barris, Brian. See Tonry, John L., et al. Cosmological Results from High-z Supernovae.

Barris, Brian J. Measuring Distances and Probing the Unresolved Stellar Populations of Galaxies Using Infrared Surface Brightness Fluctuations. *Joseph B. Jensen, John L. Tonry, Brian J. Barris, Rodger I. Thompson, Michael C. Liu, Marcia J. Rieke, Edward A. Ajhar, & John P. Blakeslee.* 583, 712 (2003)

Barsony, M. A Search for Close Binaries in the ρ Ophiuchi Star-forming Region. *M. Barsony, C. Koresko, & K. Matthews.* 591, 1064 (2003)

Barsony, Mary. Structure of the Mid-Infrared–emitting Disk around WL 16. *Michael E. Ressler & Mary Barsony.* 584, 832 (2003)

Barstow, M. A. An Archive of *IUE* Low-Dispersion Spectra of the White Dwarf Stars. *J. B. Holberg, M. A. Barstow, & M. R. Burleigh.* 147, 145 (2003)

Bartel, N. Very Long Baseline Interferometry Imaging of the RS Canum Venaticorum Binary Star System HR 5110. *R. R. Ransom, N. Bartel, M. F. Bietenholz, M. I. Ratner, D. E. Lebach, I. I. Shapiro, & J.-F. Lestrade.* 587, 390 (2003)

SN 1993J VLBI. III. The Evolution of the Radio Shell. *M. F. Bietenholz, N. Bartel, & N. P. Rupen.* 597, 374 (2003)

Bartel, Norbert. SN 1979C VLBI: 22 Years of Almost Free Expansion. *Norbert Bartel & Michael F. Bietenholz.* 591, 301 (2003)

Bartelmann, Matthias. Probing Intracluster Magnetic Fields with Cosmic Microwave Background Polarization. *Hiroshi Ohno, Masahiro Takada, Klaus Dolag, Matthias Bartelmann, & Naoshi Sugiyama.* 584, 599 (2003)

Barth, Aaron J. The Black Hole Masses and Host Galaxies of BL Lacertae Objects. *Aaron J. Barth, Luis C. Ho, & Wallace L. W. Sargent.* 583, 134 (2003)

Emission and Absorption in the M87 LINER. *Bassem M. Sabra, Joseph C. Shields, Luis C. Ho, Aaron J. Barth, & Alexei V. Filippenko.* 584, 164 (2003)

Optical Spectropolarimetry of the GRB 020813 Afterglow. *Aaron J. Barth, Re'em Sari, Marshall H. Cohen, Robert W. Goodrich, Paul A. Price, Derek W. Fox, J. S. Bloom, Alicia M. Soderberg, & S. R. Kulkarni.* 584, L47 (2003)

Iron Emission in the $z = 6.4$ Quasar SDSS J114816.64+525150.3. *Aaron J. Barth, Paul Martini, Charles H. Nelson, & Luis C. Ho.* 594, L95 (2003)

BARTHEL, PETER D. The Radio Properties of Composite LINER/H II Galaxies: Erratum (ApJS, 142, 223 [2002]). *Mercedes E. Filho, Peter D. Barthel, & Luis C. Ho.* 144, 211 (2003) (Orig. paper in 142, 223 (2002))

BARTKO, F. See TRAN, H. D., et al. Advanced Camera for Surveys Observations of Young Star Clusters in the Interacting Galaxy UGC 10214.

See BOUWENS, R. J., et al. Star Formation at $z \sim 6$: *i*-Dropouts in the Advanced Camera for Surveys Guaranteed Time Observation Fields.

See MEURER, GERHARDT R., et al. The Discovery of Globular Clusters in the Protospiral Galaxy NGC 2915: Implications for Hierarchical Galaxy Evolution.

BARTKO, FRANK. See BLAKESLEE, JOHN P., et al. Discovery of Two Distant Type Ia Supernovae in the Hubble Deep Field–North with the Advanced Camera for Surveys.

BARWICK, S. W. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

BARY, JEFFREY S. Detections of Rovibrational H_2 Emission from the Disks of T Tauri Stars. *Jeffrey S. Bary, David A. Weintraub, & Joel H. Kastner.* 586, 1136 (2003)

BARYSHEV, YU. Prediction of the Sidereal Time Distribution of Gravitational Wave Events for Different Detectors. *G. Paturel & Yu. Baryshev.* 592, L99 (2003)

BASILAKOS, S. Galaxy Bias in Quintessence Cosmological Models. *S. Basilakos & M. Plionis.* 593, L61 (2003)

Galaxy Alignments as a Probe of the Dynamical State of Clusters. *M. Plionis, C. Benoist, S. Maurogordato, C. Ferrari, & S. Basilakos.* 594, 144 (2003)

BASILAKOS, SPYROS. Cluster Formation Rate in Models with Dark Energy. *Spyros Basilakos.* 590, 636 (2003)

BASLER, J. See BÖTTCHER, M., et al. Coordinated Multiwavelength Observations of BL Lacertae in 2000.

BASRI, GIBOR. Very Low Mass Stars amd Brown Dwarfs in Taurus-Auriga. *Russel J. White & Gibor Basri.* 582, 1109 (2003)

Rotation and Activity in Mid-M to L Field Dwarfs. *Subhanjoy Mohanty & Gibor Basri.* 583, 451 (2003)

Evidence for a T Tauri Phase in Young Brown Dwarfs. *Ray Jayawardhana, Subhanjoy Mohanty, & Gibor Basri.* 592, 282 (2003)

BASSANI, L. *BeppoSAX* Average Spectra of Seyfert Galaxies. *A. Malizia, L. Bassani, J. B. Stephen, G. Di Cocco, F. Fiore, & A. J. Dean.* 589, L17 (2003)

See RISALITI, G., et al. Revealing the Active Galactic Nucleus in the Superantennae through *L*-Band Spectroscopy.

BASSI, M. L. Measurement of ^{3}He/^{4}He in the Local Interstellar Medium: The Collisa Experiment on *Mir*. *E. Salerno, F. Bühler, P. Bochsler, H. Busemann, M. L. Bassi, G. N. Zastenker, Yu. N. Agafonov, & N. A. Eismont.* 585, 840 (2003)

BASTIAN, NATE. The Missing Link in Star Cluster Evolution. *Richard de Grijs, Nate Bastian, & Hennev J. G. L. M. Lamers.* 583, L17 (2003)

BASU, S. A Comparison of Solar *p*-Mode Parameters from MDI and GONG: Mode Frequencies and Structure Inversion. *S. Basu, J. Christensen-Dalsgaard, R. Howe, J. Schou, M. J. Thompson, F. Hill, & R. Komm.* 591, 432 (2003)

Global Parameter and Helioseismic Tests of Solar Variability Models. *L. H. Li, S. Basu, S. Sofia, F. J. Robinson, P. Demarque, & D. B. Guenther.* 591, 1267 (2003)

BASU, SARBANI. Changes in Solar Dynamics from 1995 to 2002. *Sarbani Basu & H. M. Antia.* 585, 553 (2003)

BASU, SHANTANU. Nonlinear Hydromagnetic Wave Support of a Stratified Molecular Cloud. *Takahiro Kudoh & Shantanu Basu.* 595, 842 (2003)

BATCHELDOR, D. See MARCONI, A., et al. Is There Really a Black Hole at the Center of NGC 4041? Constraints from Gas Kinematics.

BATTISTELLI, E. S. Triple Experiment Spectrum of the Sunyaev-Zel'dovich Effect in the Coma Cluster: H_0. *E. S. Battistelli, M. De Petris, L. Lamagna, G. Luzzi, R. Maoli, A. Melchiorri, F. Melchiorri, A. Orlando, E. Palladino, G. Savini, Y. Rephaeli, M. Shimon, M. Signore, & S. Colafrancesco.* 598, L75 (2003)

BAUER, AMANDA. See SZKODY, PAULA, et al. Two Rare Magnetic Cataclysmic Variables with Extreme Cyclotron Features Identified in the Sloan Digital Sky Survey.

BAUER, F. E. Very High Redshift X-Ray–selected Active Galactic Nuclei in the *Chandra* Deep Field–North. *A. J. Barger, L. L. Cowie, P. Capak, D. M. Alexander, F. E. Bauer, W. N. Brandt, G. P. Garmire, & A. E. Hornschemeier.* 584, L61 (2003)

BAUER, S. J. Atmospheric Loss of Exoplanets Resulting from Stellar X-Ray and Extreme-Ultraviolet Heating. *H. Lammer, F. Selsis, I. Ribas, E. F. Guinan, S. J. Bauer, & W. W. Weiss.* 598, L121 (2003)

BAUGH, C. M. What Shapes the Luminosity Function of Galaxies? *A. J. Benson, R. G. Bower, C. S. Frenk, C. G. Lacey, C. M. Baugh, & S. Cole.* 599, 38 (2003)

BAUGH, CARLTON M. See BERLIND, ANDREAS A., et al. The Halo Occupation Distribution and the Physics of Galaxy Formation.

BAUM, STEFI A. Space Telescope Imaging Spectrograph Spectroscopy of the Emission-Line Gas in the Nuclei of Nearby FR-I Galaxies. *Jacob Noel-Storr, Stefi A. Baum, Gijs Verdoes Kleijn, Roeland P. van der Marel, Christoper P. O'Dea, Tim de Zeeuw, & C. Marcella Carollo.* 148, 419 (2003)

BAUME, GUSTAVO. Optical Polarization Observations of NGC 6231: Evidence for a Past Supernova Fingerprint. *Carlos Feinstein, Ruben Martinez, M. Marcela Vergne, Gustavo Baume, & Ruben Vazquez.* 598, 349 (2003)

BAUMGARDT, HOLGER. On the Central Structure of M15. *Holger Baumgardt, Piet Hut, Junichiro Makino, Steve McMillan, & Simon Portegies Zwart.* 582, L21 (2003)

A Dynamical Model for the Globular Cluster G1. *Holger Baumgardt, Junichiro Makino, Piet Hut, Steve McMillan, & Simon Portegies Zwart.* 589, L25 (2003)

See POOLEY, DAVID, et al. Dynamical Formation of Close Binary Systems in Globular Clusters.

BAUMGARTE, THOMAS W. Effects of Differential Rotation on the Maximum Mass of Neutron Stars. *Nicholas D. Lyford, Thomas W. Baumgarte, & Stuart L. Shapiro.* 583, 410 (2003)

General Relativistic Magnetohydrodynamics for the Numerical Construction of Dynamical Spacetimes. *Thomas W. Baumgarte & Stuart L. Shapiro.* 585, 921 (2003)

Collapse of a Magnetized Star to a Black Hole. *Thomas W. Baumgarte & Stuart L. Shapiro.* 585, 930 (2003)

One-armed Spiral Instability in Differentially Rotating Stars. *Motoyuki Saijo, Thomas W. Baumgarte, & Stuart L. Shapiro.* 595, 352 (2003)

BAUR, HEINRICH. Helium in Lunar Samples Analyzed by High-Resolution Stepwise Etching: Implications for the Temporal Constancy of Solar Wind Isotopic Composition. *Veronika S. Heber, Heinrich Baur, & Rainer Wieler.* 597, 602 (2003)

BAUSCHLICHER, C. W., JR. Line Intensities and Molecular Opacities of the FeH $F\ ^4\Delta_i$–$X\ ^4\Delta_i$ Transition. *M. Dulick, C. W. Bauschlicher, Jr., Adam Burrows, C. M. Sharp, R. S. Ram, & Peter Bernath.* 594, 651 (2003)

BAUTZ, M. The Redshift Evolution of the 2–8 keV X-Ray Luminosity Function. *L. L. Cowie, A. J. Barger, M. Bautz, W. N. Brandt, & G. P. Garmire.* 584, L57 (2003)

BAUTZ, M. W. See MARKEVITCH, M., et al. *Chandra* Spectra of the Soft X-Ray Diffuse Background.

Chandra Observations of QSO 2237+0305. *X. Dai, G. Chartas, E. Agol, M. W. Bautz, & G. P. Garmire.* 589, 100 (2003)

See MUNO, M. P., et al. A Deep *Chandra* Catalog of X-Ray Point Sources toward the Galactic Center.

See BAGANOFF, F. K., et al. *Chandra* X-Ray Spectroscopic Imaging of Sagittarius A* and the Central Parsec of the Galaxy.

X-Ray Sources with Periodic Variability in a Deep *Chandra* Image of the Galactic Center. *M. P. Muno, F. K. Baganoff, M. W. Bautz, W. N. Brandt, G. P. Garmire, & G. R. Ricker.* 599, 465 (2003)

BAY, M. See BENNETT, C. L., et al. The *Microwave Anisotropy Probe* Mission.

BAY, R. C. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

BEASLEY, ANTHONY J. A Relativistic Jet in the Radio-quiet Quasar PG 1407+263. *Katherine M. Blundell, Anthony J. Beasley, & Geoffrey V. Bicknell.* 591, L103 (2003)

BEASLEY, MICHAEL A. Evidence for an Intermediate-Age, Metal-rich Population of Globular Clusters in NGC 4365. *Søren S. Larsen, Jean P. Brodie, Michael A. Beasley, Duncan A. Forbes, Markus Kissler-Patig, Harald Kuntschner, & Thomas H. Puzia.* 585, 767 (2003)

The Metallicity of Pregalactic Globular Clusters: The Observational Consequences of the First Stars. *Michael A. Beasley, Daisuke Kawata, Frazer R. Pearce, Duncan A. Forbes, & Brad K. Gibson.* 596, L187 (2003)

BEAUGÉ, C. Extrasolar Planets in Mean-Motion Resonance: Apses Alignment and Asymmetric Stationary Solutions. *C. Beaugé, S. Ferraz-Mello, & T. A. Michtchenko.* 593, 1124 (2003)

BEAULIEU, J. P. See FIELDS, DALE L., et al. High-Precision Limb-Darkening Measurement of a K3 Giant Using Microlensing.

BECHTOLD, JILL. *Chandra* Survey of Radio-quiet, High-Redshift Quasars. *Jill Bechtold, Aneta Siemiginowska, Joseph Shields, Bozena Czerny, Agnieszka Janiuk, Fred Hamann, Thomas L. Aldcroft, Martin Elvis, & Adam Dobrzycki.* 588, 119 (2003)

See SIEMIGINOWSKA, ANETA, et al. *Chandra* Discovery of an X-Ray Jet and Extended X-Ray Structure in $z = 0.63$ Quasar B2 0738+313.

BECK, R. Nascent Starbursts in Synchrotron-deficient Galaxies with Hot Dust. *H. Roussel, G. Helou, R. Beck, J. J. Condon, A. Bosma, K. Matthews, & T. H. Jarrett.* 593, 733 (2003)

BECK, TRACY L. Near-Infrared Adaptive Optics Imaging of the Embedded Cluster NGC 2024. *Tracy L. Beck, M. Simon, & L. M. Close.* 583, 358 (2003)

BECKA, T. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

BECKER, A. See ALCOCK, C., et al. The MACHO Project Large Magellanic Cloud Variable Star Inventory. XI. Frequency Analysis of the Fundamental Mode RR Lyrae Stars.

BECKER, A. C. Weak Lensing Discovery and Tomography of a Cluster at $z = 0.68$. *D. Wittman, V. E. Margoniner, J. A. Tyson, J. G. Cohen, A. C. Becker, & I. P. Dell'Antonio.* 597, 218 (2003)

BECKER, K.-H. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

BECKER, PETER A. Inner Boundary Conditions for Advection-dominated Accretion onto Black Holes. *Peter A. Becker & Truong Le.* 588, 408 (2003)

Broad Redshifted Line as Signature of Outflow. *Lev Titarchuk, Demos Kazanas, & Peter A. Becker.* 598, 411 (2003)

BECKER, R. H. See TRAN, H. D., et al. Advanced Camera for Surveys Observations of Young Star Clusters in the Interacting Galaxy UGC 10214.

BECKER, W. Search for the Optical Counterpart of the Vela Pulsar X-Ray Nebula. *R. P. Mignani, A. De Luca, O. Kargaltsev, G. G. Pavlov, S. Zaggia, P. A. Caraveo, & W. Becker.* 594, 419 (2003)

BECKER, W. E. *XMM-Newton* Observations of PSR B1823−13: An Asymmetric Synchrotron Nebula around a Vela-like Pulsar. *B. M. Gaensler, N. S. Schulz, V. M. Kaspi, M. J. Pivovaroff, & W. E. Becker.* 588, 441 (2003)

BECKER, WERNER. *Chandra X-Ray Observatory* Observations of the Globular Cluster M28 and Its Millisecond Pulsar PSR 1821−24. *Werner Becker, Douglas A. Swartz, George G. Pavlov, Ronald F. Elsner, Jonathan Grindlay, Roberto Mignani, Allyn F. Tennant, Don Backer, Luigi Pulone, Vincenzo Testa, & Martin C. Weisskopf.* 594, 798 (2003)

BECKLEY, HOWARD F. Rotation of a Pulsed Jet, or Plume in a Rotation Flow: A Source of Helicity for an α-ω Astrophysical Dynamo. *Howard F. Beckley, Stirling A. Colgate, Van D. Romero, & Ragnar Ferrel.* 599, 702 (2003)

BECKLIN, E. E. The First Spatially Resolved Mid-Infrared Spectroscopy of β Pictoris. *A. J. Weinberger, E. E. Becklin, & B. Zuckerman.* 584, L33 (2003)

See GHEZ, A. M., et al. The First Measurement of Spectral Lines in a Short-Period Star Bound to the Galaxy's Central Black Hole: A Paradox of Youth.

Deep Keck Adaptive Optics Searches for Extrasolar Planets in the Dust of ϵ Eridani and Vega. *Bruce A. Macintosh, E. E. Becklin, Denise Kaisler, Quinn Konopacky, & B. Zuckerman.* 594, 538 (2003)

See FIGER, DONALD F., et al. High-Precision Stellar Radial Velocities in the Galactic Center.

BECKMAN, JOHN E. Kinematical Structure of the Local Interstellar Medium: The Galactic Anticenter Hemisphere. *Ricardo Génova & John E. Beckman.* 145, 355 (2003)

When Is a Bulge Not a Bulge? Inner Disks Masquerading as Bulges in NGC 2787 and NGC 3945. *Peter Erwin, Juan Carlos Vega Beltrán, Alister W. Graham, & John E. Beckman.* 597, 929 (2003)

BECKMANN, V. See MEREGHETTI, S., et al. *Integral* and *XMM-Newton* Observations of the Weak Gamma-Ray Burst GRB 030227.

BEDDING, TIMOTHY R. Oscillations in Arcturus from *WIRE* Photometry. *Alon Retter, Timothy R. Bedding, Derek L. Buzasi, Hans Kjeldsen, & László L. Kiss.* 591, L151 (2003)

Oscillations in Arcturus from *WIRE* Photometry: Erratum (ApJ, 591, L151 [2003]). *Alon Retter, Timothy R. Bedding, Derek L. Buzasi, Hans Kjeldsen, & László L. Kiss.* 596, L125 (2003) (Orig. paper in 591, L151 (2003))

BEENE, J. E. The Effect of Background Subtraction on the Temperature of EIT Coronal Loops. *J. T. Schmelz, J. E. Beene, K. Nasraoui, H. T. Blevins, P. C. H. Martens, & J. W. Cirtain.* 599, 604 (2003)

BEER, H. See SONNABEND, K., et al. The s-Process Branching at ^{185}W.

BEERS, TIMOTHY C. Measurement of the Europium Isotope Ratio for the Extremely Metal-poor, r-Process–enhanced Star CS 31082-001. *Wako Aoki, Satoshi Honda, Timothy C. Beers, & Christopher Sneden.* 586, 506 (2003)

See SNEDEN, CHRISTOPHER, et al. The Extremely Metal-poor, Neutron Capture–rich Star CS 22892−052: A Comprehensive Abundance Analysis.

See AOKI, WAKO, et al. Europium Isotope Ratios in s-Process Element-enhanced Metal-poor Stars: A New Probe of the ^{151}Sm Branching.

The r-Process in Supernovae Explosions from the Collapse of O-Ne-Mg Cores. *Shinya Wanajo, Masaya Tamamura, Naoki Itoh, Ken'ichi Nomoto, Yuhri Ishimaru, Timothy C. Beers, & Satoshi Nozawa.* 593, 968 (2003)

BEGELMAN, MITCHELL C. Accretion of Low Angular Momentum Material onto Black Holes: Two-dimensional Hydrodynamical Inviscid Case. *Daniel Proga & Mitchell C. Begelman.* 582, 69 (2003)

Eddington Limit and Radiative Transfer in Highly Inhomogeneous Atmospheres. *Mateusz Ruszkowski & Mitchell C. Begelman.* 586, 384 (2003)

Galaxy Formation in Triaxial Halos: Black Hole–Bulge–Dark Halo Correlation. *Amr A. El-Zant, Isaac Shlosman, Mitchell C. Begelman, & Juhan Frank.* 590, 641 (2003)

Accretion of Low Angular Momentum Material onto Black Holes: Two-dimensional Magnetohydrodynamic Case. *Daniel Proga & Mitchell C. Begelman.* 592, 767 (2003)

Axisymmetric Magnetohydrodynamic Simulations of the Collapsar Model for Gamma-Ray Bursts. *Daniel Proga, Andrew I. MacFadyen, Philip J. Armitage, & Mitchell C. Begelman.* 599, L5 (2003)

BEHAR, E. See MASON, K. O., et al. The X-Ray Spectrum of the Seyfert 1 Galaxy Markarian 766: Dusty Warm Absorber or Relativistic Emission Lines?

Emission-Line Spectra of Ar IX–Ar XVI in the Soft X-Ray Region 20–50 Å. *J. K. Lepson, P. Beiersdorfer, E. Behar, & S. M. Kahn.* 590, 604 (2003)

Assessment of the Fluorescence and Auger Database used in Plasma Modeling. *T. W. Gorczyca, C. N. Kodituwakku, K. T. Korista, O. Zatsarinny, N. R. Badnell, E. Behar, M. H. Chen, & D. W. Savin.* 592, 636 (2003)

BEHAR, EHUD. See SAKO, MASAO, et al. Can a Dusty Warm Absorber Model Reproduce the Soft X-Ray Spectra of MCG −6-30-15 and Markarian 766?

A Long Look at NGC 3783 with the *XMM-Newton* Reflection Grating Spectrometer. *Ehud Behar, Andrew P. Rasmussen, Alexander J. Blustin, Masao Sako, Steven M. Kahn, Jelle S. Kaastra, Graziella Branduardi-Raymont, & Katrien C. Steenbrugge.* 598, 232 (2003)

See NETZER, HAGAI, et al. The Ionized Gas and Nuclear Environment in NGC 3783. IV. Variability and Modeling of the 900 Kilosecond *Chandra* Spectrum.

BEHR, BRADFORD B. Chemical Abundances and Rotation Velocities of Blue Horizontal-Branch Stars in Six Globular Clusters. *Bradford B. Behr.* 149, 67 (2003)

Rotation Velocities of Red and Blue Field Horizontal-Branch Stars. *Bradford B. Behr.* 149, 101 (2003)

BEICHMAN, C. See SWAIN, MARK, et al. Interferometer Observations of Subparsec-Scale Infrared Emission in the Nucleus of NGC 4151.

BEICHMAN, CHARLES A. See LU, NANYAO, et al. Infrared Emission of Normal Galaxies from 2.5 to 12 Microns: *Infrared Space Observatory* Spectra, Near-Infrared Continuum, and Mid-Infrared Emission Features.

BEIERLE, MICHELLE E. Star Formation and the Interstellar Medium in Four Dwarf Irregular Galaxies. *L. M. Young, L. van Zee, K. Y. Lo, R. C. Dohm-Palmer, & Michelle E. Beierle.* 592, 111 (2003)

BEIERSDORFER, P. Experimental Transition Rate of the Green Coronal Line of Fe XIV. *P. Beiersdorfer, E. Träbert, & E. H. Pinnington.* 587, 836 (2003)

Emission-Line Spectra of Ar IX–Ar XVI in the Soft X-Ray Region 20–50 Å. *J. K. Lepson, P. Beiersdorfer, E. Behar, & S. M. Kahn.* 590, 604 (2003)

BEKKI, KENJI. Starbursts from the Strong Compression of Galactic Molecular Clouds due to the High Pressure of the Intracluster Medium. *Kenji Bekki & Warrick J. Couch.* 596, L13 (2003)

BELCZYNSKI, K. The Role of Helium Stars in the Formation of Double Neutron Stars. *N. Ivanova, K. Belczynski, V. Kalogera, F. A. Rasio, & R. E. Taam.* 592, 475 (2003)

BELCZY'NSKI, KRZYSZTOF. Constraints on the Binary Evolution from Chirp Mass Measurements. *Tomasz Bulik & Krzysztof Belczy'nski.* 589, L37 (2003)

BELETIC, J. See COLAVITA, M., et al. Observations of DG Tauri with the Keck Interferometer.

See SWAIN, MARK, et al. Interferometer Observations of Subparsec-Scale Infrared Emission in the Nucleus of NGC 4151.

BELL, ERIC F. A First Estimate of the Baryonic Mass Function of Galaxies. *Eric F. Bell, Daniel H. McIntosh, Neal Katz, & Martin D. Weinberg.* 585, L117 (2003)

Estimating Star Formation Rates from Infrared and Radio Luminosities: The Origin of the Radio-Infrared Correlation. *Eric F. Bell.* 586, 794 (2003)

The Optical and Near-Infrared Properties of Galaxies. I. Luminosity and Stellar Mass Functions. *Eric F. Bell, Daniel H. McIntosh, Neal Katz, & Martin D. Weinberg.* 149, 289 (2003)

BELL, J. See COLAVITA, M., et al. Observations of DG Tauri with the Keck Interferometer.

BELLAZZINI, MICHELE. A Near-Infrared Spectroscopic Screening of the Red Giant Populations in ω Centauri. *Livia Origlia, Francesco R. Ferraro, Michele Bellazzini, & Elena Pancino.* 591, 916 (2003)

Blue Horizontal-Branch Stars in the Sagittarius Dwarf Spheroidal Galaxy. *Lorenzo Monaco, Michele Bellazzini, Francesco R. Ferraro, & Elena Pancino.* 597, L25 (2003)

BELLE, KUNEGUNDA E. *Hubble Space Telescope* Space Telescope Imaging Spectrograph Spectroscopy of the Intermediate Polar EX Hydrae. *Kunegunda E. Belle, Steve B. Howell, Edward M. Sion, Knox S. Long, & Paula Szkody.* 587, 373 (2003)

BELLONI, T. Spectral and Temporal Behavior of the Black Hole Candidate XTE J1118+480 as Observed with *BeppoSAX*. *F. Frontera, L. Amati, A. A. Zdziarski, T. Belloni, S. Del Sordo, N. Masetti, M. Orlandini, & E. Palazzi.* 592, 1110 (2003)

XMM-Newton Observation of the 5.25 Millisecond Transient Millisecond Pulsar XTE J1807−294 in Outburst. *S. Campana, M. Ravasio, G. L. Israel, V. Mangano, & T. Belloni.* 594, L39 (2003)

BELLONI, TOMASO. High-Frequency Quasi-Periodic Oscillations in the Black Holes X-Ray Transient XTE J1650−500. *Jeroen Homan, Marc Klein-Wolt, Sabrina Rossi, Jon M. Miller, Rudy Wijnands, Tomaso Belloni, Michiel van der Klis, & Walter H. G. Lewin.* 586, 1262 (2003)

See PATEL, SANDEEP K., et al. *Chandra* Observations of the Anomalous X-Ray Pulsar 4U 0142+61.

Chandra Observations of the Faintest Low-Mass X-Ray Binaries. *Colleen A. Wilson, Sandeep K. Patel, Chryssa Kouveliotou, Peter G. Jonker, Michiel van der Klis, Walter H. G. Lewin, Tomaso Belloni, & Mariano Méndez.* 596, 1220 (2003)

BELLOT RUBIO, L. R. Magnetoacoustic Waves in Sunspots. *E. V. Khomenko, M. Collados, & L. R. Bellot Rubio.* 588, 606 (2003)

BELOBORODOV, ANDREI M. Neutron-fed Afterglows of Gamma-Ray Bursts. *Andrei M. Beloborodov.* 585, L19 (2003)

Nuclear Composition of Gamma-Ray Burst Fireballs. *Andrei M. Beloborodov.* 588, 931 (2003)

Stellar Disk in the Galactic Center: A Remnant of a Dense Accretion Disk? *Yuri Levin & Andrei M. Beloborodov.* 590, L33 (2003)

BELTRÁN, JUAN CARLOS VEGA. When Is a Bulge Not a Bulge? Inner Disks Masquerading as Bulges in NGC 2787 and NGC 3945. *Peter Erwin, Juan Carlos Vega Beltrán, Alister W. Graham, & John E. Beckman.* 597, 929 (2003)

BELVEDERE, G. On a Mechanism for Enhancing Magnetic Activity in Tidally Interacting Binaries: Erratum (ApJ, 579, 810 [2002]). *T. Zaqarashvili, G. Javakhishvili, & G. Belvedere.* 591, 498 (2003) (Orig. paper in 579, 810 (2002))

BELY-DUBAU, F. The Contribution of Polar Plumes to the Fast Solar Wind. *A. H. Gabriel, F. Bely-Dubau, & P. Lemaire.* 589, 623 (2003)

BELZER, EMILY. A Deep *Chandra* X-Ray Observation of the Embedded Young Cluster in NGC 2024. *Stephen Skinner, Marc Gagné, & Emily Belzer.* 598, 375 (2003)

BEMPORAD, A. Temporal Evolution of a Streamer Complex: Coronal and in Situ Plasma Parameters. *A. Bemporad, G. Poletto, S. T. Suess, Y.-K. Ko, S. Parenti, P. Riley, M. Romoli, & T. Z. Zurbuchen.* 593, 1146 (2003)

BENACQUISTA, M. Gravitational Radiation from Pulsating White Dwarfs. *M. Benacquista, D. M. Sedrakian, M. V. Hairapetyan, K. M. Shahabasyan, & A. A. Sadoyan.* 596, L223 (2003)

BENAGLIA, PAULA. See BUTT, YOUSAF M., et al. *Chandra*/Very Large Array Follow-up of TeV J2032+4131, the Only Unidentified TeV Gamma-Ray Source.

BENBOW, W. See ATKINS, R., et al. The High-Energy Gamma-Ray Fluence and Energy Spectrum of GRB 970417A from Observations with Milagrito.

See FALCONE, A., et al. Observation of GeV Solar Energetic Particles from the 1997 November 6 Event Using Milagrito.

See ATKINS, R., et al. Observation of TeV Gamma Rays from the Crab Nebula with Milagro Using a New Background Rejection Technique.

BENDEK, E. See GARNAVICH, P. M., et al. Discovery of the Low-Redshift Optical Afterglow of GRB 011121 and Its Progenitor Supernova SN 2001ke.

BENDER, R. The Munich Near-Infrared Cluster Survey. II. The *K*-Band Luminosity Function of Field Galaxies to $z \sim 1.2$. *N. Drory, R. Bender, G. Feulner, U. Hopp, C. Maraston, J. Snigula, & G. J. Hill.* 595, 698 (2003)

BENDER, RALF. See GEBHARDT, KARL, et al. Axisymmetric Dynamical Models of the Central Regions of Galaxies.

See PINKNEY, JASON, et al. Kinematics of 10 Early-Type Galaxies from *Hubble Space Telescope* and Ground-based Spectroscopy.

The Wendelstein Calar Alto Pixellensing Project (WeCAPP): First MACHO Candidates. *Arno Riffeser, Jürgen Fliri, Ralf Bender, Stella Seitz, & Claus A. Gössl.* 599, L17 (2003)

BENDO, G. J. Modeling the Infrared Emission from the ϵ Eridani Disk. *Aigen Li, J. I. Lunine, & G. J. Bendo.* 598, L51 (2003)

BENETTI, S. See VALENTINI, G., et al. Optical and Near-Infrared Photometry of the Type Ia Supernova 2000E in NGC 6951.

BÉNILAN, YVES. Photodestruction of Relevant Interstellar Molecules in Ice Mixtures. *Hervé Cottin, Marla H. Moore, & Yves Bénilan.* 590, 874 (2003)

BENÍTEZ, E. See STEPANIAN, J. A., et al. A Multiwavelength Study of Narrow-Line Seyfert 1 Galaxies from the Second Byurakan Survey.

See BÖTTCHER, M., et al. Coordinated Multiwavelength Observations of BL Lacertae in 2000.

BENÍTEZ, N. See TRAN, H. D., et al. Advanced Camera for Surveys Observations of Young Star Clusters in the Interacting Galaxy UGC 10214.

See BOUWENS, R. J., et al. Star Formation at $z \sim 6$: i-Dropouts in the Advanced Camera for Surveys Guaranteed Time Observation Fields.

See BLAKESLEE, JOHN P., et al. Advanced Camera for Surveys Photometry of the Cluster RDCS 1252.9−2927: The Color-Magnitude Relation at $z = 1.24$.

See MEURER, GERHARDT R., et al. The Discovery of Globular Clusters in the Protospiral Galaxy NGC 2915: Implications for Hierarchical Galaxy Evolution.

BENÍTEZ, NARCISO. See BLAKESLEE, JOHN P., et al. Discovery of Two Distant Type Ia Supernovae in the Hubble Deep Field–North with the Advanced Camera for Surveys.

BENJAMIN, R. A. Pulsar PSR B0656+14, the Monogem Ring, and the Origin of the "Knee" in the Primary Cosmic-Ray Spectrum. *S. E. Thorsett, R. A. Benjamin, Walter F. Brisken, A. Golden, & W. M. Goss.* 592, L71 (2003)

BENKO, J. M. Detection of the Evolutionary Stages of Variables in M3. *J. Jurcsik, J. M. Benko, G. A. Bakos, B. Szeidl, & R . Szabó.* 597, L49 (2003)

BENN, C. R. Decline of the Space Density of Quasars between $z = 2$ and $z = 4$. *M. Vigotti, R. Carballo, C. R. Benn, G. De Zotti, R. Fanti, J. I. Gonzalez Serrano, K.-H. Mack, & J. Holt.* 591, 43 (2003)

BENNET, D. See ALCOCK, C., et al. The MACHO Project Large Magellanic Cloud Variable Star Inventory. XI. Frequency Analysis of the Fundamental Mode RR Lyrae Stars.

BENNETT, C. See PAGE, L., et al. The Optical Design and Characterization of the *Microwave Anisotropy Probe*.

BENNETT, C. L. The *Microwave Anisotropy Probe* Mission. *C. L. Bennett, M. Bay, M. Halpern, G. Hinshaw, C. Jackson, N. Jarosik, A. Kogut, M. Limon, S. S. Meyer, L. Page, D. N. Spergel, G. S. Tucker, D. T. Wilkinson, E. Wollack, & E. L. Wright.* 583, 1 (2003)

See JAROSIK, N., et al. Design, Implementation, and Testing of the *Microwave Anisotropy Probe* Radiometers.

First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Preliminary Maps and Basic Results. *C. L. Bennett, M. Halpern, G. Hinshaw, N. Jarosik, A. Kogut, M. Limon, S. S. Meyer, L. Page, D. N. Spergel, G. S. Tucker, E. Wollack, E. L. Wright, C. Barnes, M. R. Greason, R. S. Hill, E. Komatsu, M. R. Nolta, N. Odegard, H. V. Peiris, L. Verde, & J. L. Weiland.* 148, 1 (2003)

See JAROSIK, N., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: On-Orbit Radiometer Characterization.

See PAGE, L., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Beam Profiles and Window Functions.

See BARNES, C., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Galactic Signal Contamination from Sidelobe Pickup.

See HINSHAW, G., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Data Processing Methods and Systematic Errors Limits.

First-Year *Wilkinson Microwave Anisotrophy Probe* (*WMAP*) Observations: Foreground Emission. *C. L. Bennett, R. S. Hill, G. Hinshaw, M. R. Nolta, N. Odegard, L. Page, D. N. Spergel, J. L. Weiland, E. L. Wright, M. Halpern, N. Jarosik, A. Kogut, M. Limon, S. S. Meyer, G. S. Tucker, & E. Wollack.* 148, 97 (2003)

See KOMATSU, E., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Tests of Gaussianity.

See HINSHAW, G., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: The Angular Power Spectrum.

See KOGUT, A., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Temperature-Polarization Correlation.

See SPERGEL, D. N., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Determination of Cosmological Parameters.

See VERDE, L., et al. First-Year *Wilkinson Microwave Anisotrophy Probe* (*WMAP*) Observations: Parameter Estimation Methodology.

See PEIRIS, H. V., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Implications for Inflation.

See PAGE, L., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Interpretation of the TT and TE Angular Power Spectrum Peaks.

BENOIST, C. Galaxy Alignments as a Probe of the Dynamical State of Clusters. *M. Plionis, C. Benoist, S. Maurogordato, C. Ferrari, & S. Basilakos.* 594, 144 (2003)

BENSCH, F. [C I] 492 GHz Mapping Observations of the High-Latitude Translucent Cloud MCLD 123.5+24.9. *F. Bensch, U. Leuenhagen, J. Stutzki, & R. Schieder.* 591, 1013 (2003)

BENSON, A. J. What Shapes the Luminosity Function of Galaxies? *A. J. Benson, R. G. Bower, C. S. Frenk, C. G. Lacey, C. M. Baugh, & S. Cole.* 599, 38 (2003)

BENSON, ANDREW J. See BERLIND, ANDREAS A., et al. The Halo Occupation Distribution and the Physics of Galaxy Formation.

BENSON, B. A. Peculiar Velocity Limits from Measurements of the Spectrum of the Sunyaev-Zeldovich Effect in Six Clusters of Galaxies. *B. A. Benson, S. E. Church, P. A. R. Ade, J. J. Bock, K. M. Ganga, J. R. Hinderks, P. D. Mauskopf, B. Philhour, M. C. Runyan, & K. L. Thompson.* 592, 674 (2003)

BENZ, A. O. Acceleration and Enrichment of ^{3}He in Impulsive Solar Flares by Electron Firehose Waves. *G. Paesold, R. Kallenbach, & A. O. Benz.* 582, 495 (2003)

BENZ, WILLY. On the Early Evolution of Forming Jovian Planets. I. Initial Conditions, Systematics, and Qualitative Comparisons to Theory. *Andrew F. Nelson & Willy Benz.* 589, 556 (2003)

On the Early Evolution of Forming Jovian Planets. II. Analysis of Accretion and Gravitational Torques. *Andrew F. Nelson & Willy Benz.* 589, 578 (2003)

BERDYUGINA, S. Why Solar Magnetic Flux Concentrations Are Bright in Molecular Bands. *M. Schüssler, S. Shelyag, S. Berdyugina, A. Vögler, & S. K. Solanki.* 597, L173 (2003)

BERDYUGINA, S. V. The Observation of Sunspot Light-Bridge Structure and Dynamics. *T. E. Berger & S. V. Berdyugina.* 589, L117 (2003)

BEREZHIANI, Z. Gamma-Ray Bursts from Delayed Collapse of Neutron Stars to Quark Matter Stars. *Z. Berezhiani, I. Bombaci, A. Drago, F. Frontera, & A. Lavagno.* 586, 1250 (2003)

BERGER, E. See PRICE, P. A., et al. GRB 010921: Strong Limits on an Underlying Supernova from the *Hubble Space Telescope*.

Continued Radio Monitoring of the Gamma-Ray Burst 991208. *T. J. Galama, D. A. Frail, R. Sari, E. Berger, G. B. Taylor, & S. R. Kulkarni.* 585, 899 (2003)

See FOX, D. W., et al. Discovery of Early Optical Emission from GRB 021211.

See GALAMA, T. J., et al. *Hubble Space Telescope* and Ground-based Optical and Ultraviolet Observations of GRB 010222.

A Radio Flare from GRB 020405: Evidence for a Uniform Medium around a Massive Stellar Progenitor. *E. Berger, A. M. Soderberg, D. A. Frail, & S. R. Kulkarni.* 587, L5 (2003)

A Submillimeter and Radio Survey of Gamma-Ray Burst Host Galaxies: A Glimpse into the Future of Star Formation Studies. *E. Berger, L. L. Cowie, S. R. Kulkarni, D. A. Frail, H. Aussel, & A. J. Barger.* 588, 99 (2003)

See PRICE, P. A., et al. Discovery of GRB 020405 and Its Late Red Bump.

A Standard Kinetic Energy Reservoir in Gamma-Ray Burst Afterglows. *E. Berger, S. R. Kulkarni, & D. A. Frail.* 590, 379 (2003)

See FRAIL, D. A., et al. The Broadband Afterglow of GRB 980703.

A Radio Survey of Type Ib and Ic Supernovae: Searching for Engine-driven Supernovae. *E. Berger, S. R. Kulkarni, D. A. Frail, & A. M. Soderberg.* 599, 408 (2003)

The First Two Host Galaxies of X-Ray Flashes: XRF 011030 and XRF 020427. *J. S. Bloom, D. Fox, P. G. van Dokkum, S. R. Kulkarni, E. Berger, S. G. Djorgovski, & D. A. Frail.* 599, 957 (2003)

BERGER, EDO. Millimeter Observations of GRB 030329: Continued Evidence for a Two-Component Jet. *Kartik Sheth, Dale A. Frail, Stephen White, Mousumi Das, Frank Bertoldi, Fabian Walter, Shri R. Kulkarni, & Edo Berger.* 595, L33 (2003)

BERGER, J. O. A Bayesian Analysis of the Cepheid Distance Scale. *Thomas G. Barnes III, W. H. Jefferys, J. O. Berger, Peter J. Mueller, K. Orr, & R. Rodriguez.* 592, 539 (2003)

BERGER, M. A. A Morphological Study of Helical Coronal Magnetic Structures. *B. C. Low & M. A. Berger.* 589, 644 (2003)

BERGER, T. E. Photospheric Sources and Brightening of the Internetwork Chromosphere. *A. C. Cadavid, J. K. Lawrence, T. E. Berger, & A. Ruzmaikin.* 586, 1409 (2003)

The Observation of Sunspot Light-Bridge Structure and Dynamics. *T. E. Berger & S. V. Berdyugina.* 589, L117 (2003)

Influence of Photospheric Magnetic Fields and Dynamics on Chromospheric K-Line Emission. *J. K. Lawrence, A. C. Cadavid, D. Miccolis, T. E. Berger, & A. Ruzmaikin.* 597, 1178 (2003)

BERGERON, J. See GILLI, R., et al. Tracing the Large-Scale Structure in the *Chandra* Deep Field South.

See GROGIN, N. A., et al. *Hubble Space Telescope* Imaging in the *Chandra* Deep Field–South. III. Quantitative Morphology of the 1 Million Second *Chandra* Counterparts and Comparison with the Field Population.

BERGERON, JACQUELINE. Low-Redshift Damped Lyα Galaxies toward the Quasars B2 0827+243, PKS 0952+179, PKS 1127−145, and PKS 1629+120. *Sandhya M. Rao, Daniel B. Nestor, David A. Turnshek, Wendy M. Lane, Eric M. Monier, & Jacqueline Bergeron.* 595, 94 (2003)

The Clustering of Intergalactic Metals. *Christophe Pichon, Evan Scannapieco, Bastien Aracil, Patrick Petitjean, Dominique Aubert, Jacqueline Bergeron, & Stéphane Colombi.* 597, L97 (2003)

BERGERON, P. A Critical Examination of Halo White Dwarf Candidates. *P. Bergeron.* 586, 201 (2003)

A Confirmation of the Optical Spectroscopy Approach: Discovery of Two More Pulsating DA (ZZ Ceti) White Dwarfs. *G. Fontaine, P. Bergeron, M. Billères, & S. Charpinet.* 591, 1184 (2003)

See MUKADEM, ANJUM S., et al. Constraining the Evolution of ZZ Ceti.

BERGIN, EDWIN. The Effects of UV Continuum and Lyα Radiation on the Chemical Equilibrium of T Tauri Disks. *Edwin Bergin, Nuria Calvet, Paola D'Alessio, & Gregory J. Herczeg.* 591, L159 (2003)

BERGIN, EDWIN A. A Survey of 557 GHz Water Vapor Emission in the NGC 1333 Molecular Cloud. *Edwin A. Bergin, Michael J. Kaufman, Gary J. Melnick, Ronald L. Snell, & John E. Howe.* 582, 830 (2003)

The Dynamical State of Barnard 68: A Thermally Supported, Pulsating Dark Cloud. *Charles J. Lada, Edwin A. Bergin, João F. Alves, & Tracy L. Huard.* 586, 286 (2003)

Submillimeter Wave Astronomy Satellite Mapping Observations of Water Vapor around Sagittarius B2. *David A. Neufeld, Edwin A. Bergin, Gary J. Melnick, & Paul F. Goldsmith.* 590, 882 (2003)

BERGSTROM, E. J. *Chandra* Observations of Variable Embedded X-Ray Sources in Orion. I. Resolving the Orion Trapezium: Erratum (ApJ, 549,

441 [2001]). *N. S. Schulz, C. Canizares, D. Huenemoerder, J. H. Kastner, S. C. Taylor, & E. J. Bergstrom.* 586, 1441 (2003) (Orig. paper in 549, 441 (2001))

Berley, D. See Atkins, R., et al. The High-Energy Gamma-Ray Fluence and Energy Spectrum of GRB 970417A from Observations with Milagrito.

See Falcone, A., et al. Observation of GeV Solar Energetic Particles from the 1997 November 6 Event Using Milagrito.

See Atkins, R., et al. Observation of TeV Gamma Rays from the Crab Nebula with Milagro Using a New Background Rejection Technique.

Berlin, J. See Colavita, M., et al. Observations of DG Tauri with the Keck Interferometer.

Berlind, Andreas A. The Halo Occupation Distribution and the Physics of Galaxy Formation. *Andreas A. Berlind, David H. Weinberg, Andrew J. Benson, Carlton M. Baugh, Shaun Cole, Romeel Davé, Carlos S. Frenk, Adrian Jenkins, Neal Katz, & Cedric G. Lacey.* 593, 1 (2003)

Berlind, P. See Stanek, K. Z., et al. Spectroscopic Discovery of the Supernova 2003dh Associated with GRB 030329.

See Matheson, T., et al. Photometry and Spectroscopy of GRB 03029 and Its Associated Supernova 2003dh: The First Two Months.

Bernabei, S. See Mukadem, Anjum S., et al. Constraining the Evolution of ZZ Ceti.

Bernard, Jean-Michel. Oxirane: An Exotic Oxygenated Organic Compound in Titan? *Patrice Coll, Jean-Michel Bernard, Rafael Navarro-González, & François Raulin.* 598, 700 (2003)

Bernardi, G. Polarization Observations in a Low Synchrotron Emission Field at 1.4 GHz. *G. Bernardi, E. Carretti, S. Cortiglioni, R. J. Sault, M. J. Kesteven, & S. Poppi.* 594, L5 (2003)

Bernardi, M. See Feldman, H., et al. An Estimate of Ω_m without Conventional Priors.

See Hopkins, A. M., et al. Star Formation Rate Indicators in the Sloan Digital Sky Survey.

Bernardi, Mariangela. See Eisenstein, Daniel J., et al. Average Spectra of Massive Galaxies in the Sloan Digital Sky Survey.

The Environment of Active Galactic Nuclei in the Sloan Digital Sky Survey. *Christopher J. Miller, Robert C. Nichol, Percy L. Gómez, Andrew M. Hopkins, & Mariangela Bernardi.* 597, 142 (2003)

Bernardi, Mariengela. See Gomez, Percy L., et al. Galaxy Star Formation as a Function of Environment in the Early Data Release of the Sloan Digital Sky Survey.

Bernath, Peter. Line Intensities and Molecular Opacities of the FeH $F\ ^4\Delta_i$–$X\ ^4\Delta_i$ Transition. *M. Dulick, C. W. Bauschlicher, Jr., Adam Burrows, C. M. Sharp, R. S. Ram, & Peter Bernath.* 594, 651 (2003)

See Smith, Verne V., et al. High-Resolution Infrared Spectroscopy of the Brown Dwarf ϵ Indi Ba.

Bernstein, Max P. Side Group Addition to the Polycyclic Aromatic Hydrocarbon Coronene by Proton Irradiation in Cosmic Ice Analogs. *Max P. Bernstein, Marla H. Moore, Jamie E. Elsila, Scott A. Sandford, Louis J. Allamandola, & Richard N. Zare.* 582, L25 (2003)

Berrilli, F. Detection of Photospheric Impacts from Chromospheric Impulsive Events. *P. F. Moretti, F. Berrilli, A. Sebastianelli, C. Briand, & E. Pietropaolo.* 589, L109 (2003)

Berrington, Robert C. Nonthermal Particles and Radiation Produced by Cluster Merger Shocks. *Robert C. Berrington & Charles D. Dermer.* 594, 709 (2003)

Berry, Donald K. The Thermal Regulation of Gravitational Instabilities in Protoplanetary Disks. *Brian K. Pickett, Annie C. Mejía, Richard H. Durisen, Patrick M. Cassen, Donald K. Berry, & Robert P. Link.* 590, 1060 (2003)

Bershady, M. A. Stellar Masses of Luminous Compact Blue Galaxies at Redshifts $z = 0.4$–1.2. *R. Guzmán, G. Östlin, D. Kunth, M. A. Bershady, D. C. Koo, & M. A. Pahre.* 586, L45 (2003)

The Kinematics in the Core of the Low Surface Brightness Galaxy DDO 39. *R. A. Swaters, M. A. W. Verheijen, M. A. Bershady, & D. R. Andersen.* 587, L19 (2003)

Bershady, Matthew A. The Tully-Fisher Relation of Barred Galaxies. *Stéphane Courteau, David R. Andersen, Matthew A. Bershady, Lauren A. MacArthur, & Hans-Walter Rix.* 594, 208 (2003)

A Face-on Tully-Fisher Relation. *David R. Andersen & Matthew A. Bershady.* 599, L79 (2003)

Bersier, D. See Matheson, T., et al. The Spectroscopic Variability of GRB 021004.

See Garnavich, P. M., et al. Discovery of the Low-Redshift Optical Afterglow of GRB 011121 and Its Progenitor Supernova SN 2001ke.

The Strongly Polarized Afterglow of GRB 020405. *D. Bersier, B. McLeod, P. M. Garnavich, M. J. Holman, T. Gray, J. Quinn, J. Kaluzny, P. M. Challis, R. G. Bower, D. J. Wilman, J. S. Heyl, S. T. Holland, V. Hradecky, S. Jha, & K. Z. Stanek.* 583, L63 (2003)

The Unusual Optical Afterglow of the Gamma-Ray Burst GRB 021004: Color Changes and Short-Timescale Variability. *D. Bersier, K. Z. Stanek, J. N. Winn, T. Gray, M. J. Holman, T. Matheson, B. Mochejska, D. Steeghs, A. R. Walker, P. M. Garnavich, J. Quinn, S. Jha, K. H. Cook, W. W. Craig, P. J. Meintjes, & J. J. Calitz.* 584, L43 (2003)

See Stanek, K. Z., et al. Spectroscopic Discovery of the Supernova 2003dh Associated with GRB 030329.

See Matheson, T., et al. Photometry and Spectroscopy of GRB 03029 and Its Associated Supernova 2003dh: The First Two Months.

Berta, S. See Risaliti, G., et al. Revealing the Active Galactic Nucleus in the Superantennae through *L*-Band Spectroscopy.

Bertelli, Gianpaolo. Clues to the Evolution of the Carina Dwarf Spheroidal Galaxy from the Color Distribution of Its Red Giant Stars. *Luca Rizzi, Enrico V. Held, Gianpaolo Bertelli, & Ivo Saviane.* 589, L85 (2003)

Bertin, G. Thermodynamic Description of a Family of Partially Relaxed Stellar Systems. *G. Bertin & M. Trenti.* 584, 729 (2003)

Bertolami, O. Expected Constraints on the Generalized Chaplygin Equation of State from Future Supernova Experiments and Gravitational Lensing Statistics. *P. T. Silva & O. Bertolami.* 599, 829 (2003)

Bertoldi, F. See Neri, R., et al. Interferometric Observations of Powerful CO Emission from Three Submillimeter Galaxies at $z = 2.39$, 2.51, and 3.35.

Bertoldi, Frank. Millimeter Observations of GRB 030329: Continued Evidence for a Two-Component Jet. *Kartik Sheth, Dale A. Frail, Stephen White, Mousumi Das, Frank Bertoldi, Fabian Walter, Shri R. Kulkarni, & Edo Berger.* 595, L33 (2003)

Bertotti, B. Stochastic Gravitational Wave Background: Upper Limits in the 10^{-6} to 10^{-3} Hz Band. *J. W. Armstrong, L. Iess, P. Tortora, & B. Bertotti.* 599, 806 (2003)

Bertrand, D. See Ahrens, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

Berwick, Daniel E. Pulsar Scintillation Arcs. I. Frequency Dependence. *Alex S. Hill, Daniel R. Stinebring, Henry A. Barnor, Daniel E. Berwick, & Aaron B. Webber.* 599, 457 (2003)

Bessell, M. S. New Members of the TW Hydrae Association, β Pictoris Moving Group, and Tucana/Horologium Association. *Inseok Song, B. Zuckerman, & M. S. Bessell.* 599, 342 (2003)

Best, P. See Cohen, A. S., et al. The Low-Frequency Radio Counterpart of the *XMM* Large-Scale Structure Survey.

Bethell, Thomas J. See Gnedin, Nickolay Y., et al. Linear Gas Dynamics in the Expanding Universe.

Bettens, Ryan P. A. See Medvedev, Ivan, et al. The Millimeter- and Submillimeter-Wave Spectrum of the Trans-Trans Conformer of Diethyl Ether ($C_2H_5OC_2H_5$).

Beuermann, Klaus. See Gansicke, Boris T., et al. Anomalous Ultraviolet Line Flux Ratios in the Cataclysmic variables 1RXS J232953.9+062814, CE 315, BZ Ursae Majoris, and EY Cygni observed with the *Hubble Space Telescope* Space Telescope Imaging Spectrograph.

Bezaire, J. J. See Aguirre, J. E., et al. The Spectrum of Integrated Millimeter Flux of the Magellanic Clouds and 30 Doradus from TopHat and DIRBE Data.

Bhat, N. D. R. A CLEAN-based Method for Deconvolving Interstellar Pulse Broadening from Radio Pulses. *N. D. R. Bhat, J. M. Cordes, & S. Chatterjee.* 584, 782 (2003)

Bhatia, A. K. Atomic Data and Spectral Line Intensities for Si VII. *A. K. Bhatia & E. Landi.* 585, 587 (2003)

Atomic Data and Emission-Line Intensities for Ca VII. *E. Landi & A. K. Bhatia.* 589, 1075 (2003)

Temperature Measurements in the Solar Transition Region Using N III Line Intensity Ratios. *R. Doron, G. A. Doschek, J. M. Laming, U. Feldman, & A. K. Bhatia.* 590, 1121 (2003)

Atomic Data and Spectral Line Intensities for S X. *A. K. Bhatia & E. Landi.* 147, 409 (2003)

Atomic Data and Spectral Line Intensities for S XI. *E. Landi & A. K. Bhatia.* 149, 249 (2003)

Bhatia, R. S. See Crill, B. P., et al. BOOMERANG: A Balloon-Borne Millimeter-Wave Telescope and Total Power Receiver for Mapping Anisotropy in the Cosmic Microwave Background.

See Runyan, M. C., et al. ACBAR: The Arcminute Cosmology Bolometer Array Receiver.

BHATT, N. The Effect of Nonthermal Protons on the High-Energy Spectra of Black Hole Binaries. *S. Bhattacharyya, N. Bhatt, R. Misra, & C. L. Kaul.* 595, 317 (2003)

BHATTACHARYYA, S. The Effect of Nonthermal Protons on the High-Energy Spectra of Black Hole Binaries. *S. Bhattacharyya, N. Bhatt, R. Misra, & C. L. Kaul.* 595, 317 (2003)

BI, HONGGUANG. Hydrogen Clouds before Reionization: A Lognormal Model Approach. *Hongguang Bi, Li-Zhi Fang, Longlong Feng, & Yipeng Jing.* 598, 1 (2003)

BIALKOWSKI–JAWORSKA, EWA. See MEDVEDEV, IVAN, et al. The Millimeter- and Submillimeter-Wave Spectrum of the Trans-Trans Conformer of Diethyl Ether ($C_2H_5OC_2H_5$).

BIAN, W. Timescales of Soft X-Ray Variability and Physical Constraints in Active Galactic Nuclei. *W. Bian & Y. Zhao.* 591, 733 (2003)

BIANCHI, LUCIANA. Winds in R Coronae Borealis Stars. *Geoffrey C. Clayton, T. R. Geballe, & Luciana Bianchi.* 595, 412 (2003)

BICKNELL, G. V. See ENOMOTO, R., et al. Search for TeV Gamma Rays from SN 1987A in 2001.

BICKNELL, GEOFFREY V. The Numerical Simulation of Radiative Shocks. II. Thermal Instabilities in Two-dimensional Models. *Ralph S. Sutherland, Geoffrey V. Bicknell, & Michael A. Dopita.* 591, 238 (2003)

The Numerical Simulation of Radiative Shocks. I. The Elimination of Numerical Shock Instabilities Using a Local Oscillation Filter. *Ralph S. Sutherland, David K. Bisset, & Geoffrey V. Bicknell.* 147, 187 (2003)

A Relativistic Jet in the Radio-quiet Quasar PG 1407+263. *Katherine M. Blundell, Anthony J. Beasley, & Geoffrey V. Bicknell.* 591, L103 (2003)

BIEBER, J. W. Toward an ab Initio Theory of the Solar Modulation of Cosmic Rays. *S. Parhi, J. W. Bieber, W. H. Matthaeus, & R. A. Burger.* 585, 502 (2003)

Nonlinear Collisionless Perpendicular Diffusion of Charged Particles. *W. H. Matthaeus, G. Qin, J. W. Bieber, & G. P. Zank.* 590, L53 (2003)

Loss Cone Precursors to Forbush Decreases and Advance Warning of Space Weather Effects. *K. Leerungnavarat, D. Ruffolo, & J. W. Bieber.* 593, 587 (2003)

BIEGING, J. H. *Hubble Space Telescope*/NICMOS Near-Infrared Imaging of the Proto–Planetary Nebula OH 231.8+4.2. *C. A. Meakin, J. H. Bieging, W. B. Latter, J. L. Hora, & A. G. G. M. Tielens.* 585, 482 (2003)

BIEGING, JOHN H. See CLOSE, LAIRD M., et al. Mid-Infrared Imaging of the Post–Asymptotic Giant Branch Star AC Herculis with the Multiple Mirror Telescope Adaptive Optics System.

BIERBAUM, VERONICA M. Hydrogenation and Charge States of the Polycyclic Aromatic Hydrocarbons in Diffuse Clouds. II. Results. *Valery Le Page, Theodore P. Snow, & Veronica M. Bierbaum.* 584, 316 (2003)

BIERMANN, PETER L. The Origin of X-shaped Radio Galaxies: Clues from the Z-symmetric Secondary Lobes. *Gopal-Krishna, Peter L. Biermann, & Paul J. Wiita.* 594, L103 (2003)

BIESECKER, D. A. Ultraviolet Spectroscopy of Narrow Coronal Mass Ejections. *D. Dobrzycka, J. C. Raymond, D. A. Biesecker, J. Li, & A. Ciaravella.* 588, 586 (2003)

BIESECKER, DOUG A. The Nascent Solar Wind: Origin and Acceleration. *Luca Teriaca, Giannina Poletto, Marco Romoli, & Doug A. Biesecker.* 588, 566 (2003)

BIETENHOLZ, M. F. Very Long Baseline Interferometry Imaging of the RS Canum Venaticorum Binary Star System HR 5110. *R. R. Ransom, N. Bartel, M. F. Bietenholz, M. I. Ratner, D. E. Lebach, I. I. Shapiro, & J.-F. Lestrade.* 587, 390 (2003)

SN 1993J VLBI. III. The Evolution of the Radio Shell. *M. F. Bietenholz, N. Bartel, & N. P. Rupen.* 597, 374 (2003)

BIETENHOLZ, MICHAEL F. SN 1979C VLBI: 22 Years of Almost Free Expansion. *Norbert Bartel & Michael F. Bietenholz.* 591, 301 (2003)

BIGGS, A. See KOOPMANS, L. V. E., et al. Extrinsic Radio Variability of JVAS/CLASS Gravitational Lenses.

BIGNALL, H. E. Rapid Variability and Annual Cycles in the Characteristic Timescale of the Scintillating Source PKS 1257−326. *H. E. Bignall, D. L. Jauncey, J. E. J. Lovell, A. K. Tzioumis, L. Kedziora-Chudczer, J.-P. Macquart, S. J. Tingay, D. P. Rayner, & R. W. Clay.* 585, 653 (2003)

BIKMAEV, ILFAN. See COLLEY, WESLEY N., et al. Around-the-Clock Observations of the Q9057+561A,B Gravitationally Lensed Quasar. II. Results for the Second Observing Season.

BILDSTEN, LARS. Photodisintegration-triggered Nuclear Energy Release in Superbursts. *Hendrik Schatz, Lars Bildsten, & Andrew Cumming.* 583, L87 (2003)

Diffusive Nuclear Burning in Neutron Star Envelopes. *Philip Chang & Lars Bildsten.* 585, 464 (2003)

Atomic Spectral Features during Thermonuclear Flashes on Neutron Stars. *Lars Bildsten, Philip Chang, & Frits Paerels.* 591, L29 (2003)

Measuring White Dwarf Accretion Rates via Their Effective Temperatures. *Dean Townsley & Lars Bildsten.* 596, L227 (2003)

White Dwarf Donors in Ultracompact Binaries: The Stellar Structure of Finite-Entropy Objects. *Christopher J. Deloye & Lars Bildsten.* 598, 1217 (2003)

BILLER, B. See MARKEVITCH, M., et al. *Chandra* Spectra of the Soft X-Ray Diffuse Background.

BILLER, BETH. Detection of Nine M8.0-L0.5 Binaries: The Very Low-Mass Binary Population and Its Implications for Brown Dwarf and Very Low Mass Star Formation. *Laird M. Close, Nick Siegler, Melanie Freed, & Beth Biller.* 587, 407 (2003)

See CLOSE, LAIRD M., et al. Mid-Infrared Imaging of the Post–Asymptotic Giant Branch Star AC Herculis with the Multiple Mirror Telescope Adaptive Optics System.

BILLER, S. See AKERLOF, C. W., et al. A Search for Correlations of TeV Gamma Rays with Ultra–High-Energy Cosmic Rays.

BILLÈRES, M. A Confirmation of the Optical Spectroscopy Approach: Discovery of Two More Pulsating DA (ZZ Ceti) White Dwarfs. *G. Fontaine, P. Bergeron, M. Billères, & S. Charpinet.* 591, 1184 (2003)

A Driving Mechanism for the Newly Discovered Long-Period Pulsating Subdwarf B Stars. *G. Fontaine, P. Brassard, S. Charpinet, E. M. Green, P. Chayer, M. Billères, & S. K. Randall.* 597, 518 (2003)

BINETTE, LUC. Technique for Detecting Warm-Hot Intergalactic Gas in Quasar Ultraviolet Spectra. *Luc Binette, Mario Rodríguez-Martínez, Sinhue Haro-Corzo, & Isidro Ballinas.* 590, 58 (2003)

ADEMIS: A Library of Evolutionary Models for Emission-Line Galaxies. I. Dust-free Models. *Gladis Margis C., Luc Binette, & Gustavo Bruzual A.* 149, 313 (2003)

BINGHAM, R. Cyclotron Maser Radiation from Astrophysical Shocks. *R. Bingham, B. J. Kellett, R. A. Cairns, J. Tonge, & J. T. Mendonça.* 595, 279 (2003)

BINNEY, J. See MARCONI, A., et al. Is There Really a Black Hole at the Center of NGC 4041? Constraints from Gas Kinematics.

BINON, F. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

BIRCH, P. See MUKADEM, ANJUM S., et al. Constraining the Evolution of ZZ Ceti.

BIRETTA, J. A. Flaring X-Ray Emission from HST-1, a Knot in the M87 Jet. *D. E. Harris, J. A. Biretta, W. Junor, E. S. Perlman, W. B. Sparks, & A. S. Wilson.* 586, L41 (2003)

BIRETTA, JOHN A. Month-Timescale Optical Variability in the M87 Jet. *Eric S. Perlman, D. E. Harris, John A. Biretta, William B. Sparks, & F. Duccio Macchetto.* 599, L65 (2003)

BIRKINSHAW, M. See COHEN, A. S., et al. The Low-Frequency Radio Counterpart of the *XMM* Large-Scale Structure Survey.

BIRKINSHAW, MARK. Determining Tangential Peculiar Velocities of Clusters of Galaxies Using Gravitational Lensing. *Sandor M. Molnar & Mark Birkinshaw.* 586, 731 (2003)

BIRKLE, K. Analysis of the Interaction Effects in the Southern Galaxy Pair Tol 1238−364 and ESO 381-G009. *S. Temporin, S. Ciroi, P. Rafanelli, M. Radovich, J. Vennik, G. M. Richter, & K. Birkle.* 148, 353 (2003)

BIRN, JOACHIM. Models of Three-dimensional Flux Ropes. *Joachim Birn, Terry G. Forbes, & Karl Schindler.* 588, 578 (2003)

A Three-dimensional Flux Rope Model for Coronal Mass Ejections Based on a Loss of Equilibrium. *Ilia I. Roussev, Terry G. Forbes, Tamas I. Gombosi, Igor V. Sokolov, Darren L. DeZeeuw, & Joachim Birn.* 588, L45 (2003)

BIRNBOIM, YUVAL. Dark Halo Cusp: Asymptotic Convergence. *Avishai Dekel, Itai Arad, Jonathan Devor, & Yuval Birnboim.* 588, 680 (2003)

BIRON, A. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

BISSET, DAVID K. The Numerical Simulation of Radiative Shocks. I. The Elimination of Numerical Shock Instabilities Using a Local Oscillation Filter. *Ralph S. Sutherland, David K. Bisset, & Geoffrey V. Bicknell.* 147, 187 (2003)

BIVIANO, ANDREA. The Mass Profile of Galaxy Clusters out to $\sim 2r_{200}$. *Andrea Biviano & Marisa Girardi.* 585, 205 (2003)

BIZAU, J.-M. Measurements and Calculations of Photoionization Cross Sections of Multiply Charged Ions in Ground and Metastable States along

the Isonuclear Series of Oxygen: O^{2+} to O^{4+}. *J.-P. Champeaux, J.-M. Bizau, D. Cubaynes, C. Blancard, S. Nahar, D. Hitz, J. Bruneau, & F. J. Wuilleumier.* 148, 583 (2003)

BIZYAEV, D. See SMITH, D. A., et al. ROTSE-III Observations of the Early Afterglow from GRB 030329.

BJORKMAN, J. E. Spatial Study with the Very Large Telescope of a New Resolved Edge-on Circumstellar Dust Disk Discovered at the Periphery of the ρ Ophiuchi Dark Cloud. *N. Grosso, J. Alves, K. Wood, R. Neuhäuser, T. Montmerle, & J. E. Bjorkman.* 586, 296 (2003)

Two-dimensional Radiative Transfer in Protostellar Envelopes. I. Effects of Geometry on Class I Sources. *Barbara A. Whitney, Kenneth Wood, J. E. Bjorkman, & Michael J. Wolff.* 591, 1049 (2003)

Two-dimensional Radiative Transfer in Protostellar Envelopes. II. An Evolutionary Sequence. *Barbara A. Whitney, Kenneth Wood, J. E. Bjorkman, & Martin Cohen.* 598, 1079 (2003)

BJORKMAN, JON. See KURASZKIEWICZ, JOANNA K., et al. The Far-Infrared Spectral Energy Distributions of X-Ray–selected Active Galaxies.

BJORKMAN, K. S. Evolution of the Inner Circumstellar Envelope of V838 Monocerotis. *J. P. Wisniewski, K. S. Bjorkman, & A. M. Magalhães.* 598, L43 (2003)

BJORKMAN, KAREN S. Spectroscopic and Spectropolarimetric Observations of V838 Monocerotis. *John P. Wisniewski, Nancy D. Morrison, Karen S. Bjorkman, Anatoly S. Miroshnichenko, Amanda C. Gault, Jennifer L. Hoffman, Marilyn R. Meade, & Jason M. Nett.* 588, 486 (2003)

BLACKMAN, ERIC G. Doubly Helical Coronal Ejections from Dynamos and Their Role in Sustaining the Solar Cycle. *Eric G. Blackman & Axel Brandenburg.* 584, L99 (2003)

Fuel-Supply–limited Stellar Relaxation Oscillations: Application to Multiple Rings around Asymptotic Giant Branch Stars and Planetary Nebulae. *Hugh M. Van Horn, John H. Thomas, Adam Frank, & Eric G. Blackman.* 585, 983 (2003)

A Compact X-Ray Source and Possible X-Ray Jets within the Planetary Nebula Menzel 3. *Joel H. Kastner, Bruce Balick, Eric G. Blackman, Adam Frank, Noam Soker, Saeqa D. Vrtilek, & Jingqiang Li.* 591, L37 (2003)

X-Ray Emission from the Pre–Planetary Nebula Henize 3-1475. *Raghvendra Sahai, Joel H. Kastner, Adam Frank, Mark Morris, & Eric G. Blackman.* 599, L87 (2003)

BLADES, J. CHRIS. Space Telescope Imaging Spectrograph Slitless Observations of Small Magellanic Cloud Planetary Nebulae: A Study on Morphology, Emission-Line Intensity, and Evolution. *Letizia Stanghellini, Richard A. Shaw, Bruce Balick, Max Mutchler, J. Chris Blades, & Eva Villaver.* 596, 997 (2003)

BLAES, OMER. Using Multiwavelength Observations to Determine the Black Hole Mass and Accretion Rate in the Type 1 Seyfert Galaxy NGC 5548. *James Chiang & Omer Blaes.* 586, 97 (2003)

Local Radiative Hydrodynamic and Magnetohydrodynamic Instabilities in Optically Thick Media. *Omer Blaes & Aristotle Socrates.* 596, 509 (2003)

BLAIN, A. W. See NERI, R., et al. Interferometric Observations of Powerful CO Emission from Three Submillimeter Galaxies at $z = 2.39$, 2.51, and 3.35.

BLAIR, W. P. See WAKKER, B. P., et al. The *Far Ultraviolet Spectroscopic Explorer* Survey of O VI Absorption in and near the Galaxy.

BLAIR, WILLIAM P. Far-Ultraviolet Spectra of a Nonradiative Shock Wave in the Cygnus Loop. *John C. Raymond, Parviz Ghavamian, Ravi Sankrit, William P. Blair, & Salvador Curiel.* 584, 770 (2003)

Far-Ultraviolet and Hα Spectroscopy of SNR 0057−7226 in the Small Magellanic Cloud H II Region N66. *Charles W. Danforth, Ravi Sankrit, William P. Blair, J. Christopher Howk, & You-Hua Chu.* 586, 1179 (2003)

Optical and Far-Ultraviolet Spectroscopy of Knot D in the Vela Supernova Remnant. *Ravi Sankrit, William P. Blair, & John C. Raymond.* 589, 242 (2003)

BLAKE, CHRIS. Probing Dark Energy Using Baryonic Oscillations in the Galaxy Power Spectrum as a Cosmological Ruler. *Chris Blake & Karl Glazebrook.* 594, 665 (2003)

BLAKE, GEOFFREY A. Observations of Rotationally Resolved C_3 in Translucent Sight Lines. *Máté Ádámkovics, Geoffrey A. Blake, & Benjamin J. McCall.* 595, 235 (2003)

Continuum and CO/HCO^+ Emission from the Disk around the T Tauri Star LkCa 15. *Chunhua Qi, Jacqueline E. Kessler, David W. Koerner, Anneila I. Sargent, & Geoffrey A. Blake.* 597, 986 (2003)

BLAKESLEE, J. P. See TRAN, H. D., et al. Advanced Camera for Surveys Observations of Young Star Clusters in the Interacting Galaxy UGC 10214.

The Ages and Abundances of a Sample of Globular Clusters in M49 (NGC 4472). *Judith G. Cohen, J. P. Blakeslee, & P. Côté.* 592, 866 (2003)

See BOUWENS, R. J., et al. Star Formation at $z \sim 6$: i-Dropouts in the Advanced Camera for Surveys Guaranteed Time Observation Fields.

See MEURER, GERHARDT R., et al. The Discovery of Globular Clusters in the Protospiral Galaxy NGC 2915: Implications for Hierarchical Galaxy Evolution.

BLAKESLEE, JOHN P. Measuring Distances and Probing the Unresolved Stellar Populations of Galaxies Using Infrared Surface Brightness Fluctuations. *Joseph B. Jensen, John L. Tonry, Brian J. Barris, Rodger I. Thompson, Michael C. Liu, Marcia J. Rieke, Edward A. Ajhar, & John P. Blakeslee.* 583, 712 (2003)

Discovery of Two Distant Type Ia Supernovae in the Hubble Deep Field–North with the Advanced Camera for Surveys. *John P. Blakeslee, Zlatan I. Tsvetanov, Adam G. Riess, Holland C. Ford, Garth D. Illingworth, Daniel Magee, John L. Tonry, Narciso Benítez, Mark Clampin, George F. Hartig, Gerhardt R. Meurer, Marco Sirianni, David R. Ardila, Frank Bartko, Rychard Bouwens, Tom Broadhurst, Nicholas Cross, P. D. Feldman, Marijn Franx, David A. Golimowski, Caryl Gronwall, Randy Kimble, John Krist, André R. Martel, Felipe Menanteau, George Miley, Marc Postman, Piero Rosati, William Sparks, L.-G. Strolger, Hien D. Tran, Richard L. White, & Wei Zheng.* 589, 693 (2003)

Dynamics of the Globular Cluster System Associated with M49 (NGC 4472): Cluster Orbital Properties and the Distribution of Dark Matter. *Patrick Côté, Dean E. McLaughlin, Judith G. Cohen, & John P. Blakeslee.* 591, 850 (2003)

Advanced Camera for Surveys Photometry of the Cluster RDCS 1252.9−2927: The Color-Magnitude Relation at $z = 1.24$. *John P. Blakeslee, Marijn Franx, Marc Postman, Piero Rosati, Brad P. Holden, G. D. Illingworth, H. C. Ford, N. J. G. Cross, Caryl Gronwall, N. Benítez, R. J. Bouwens, T. J. Broadhurst, M. Clampin, R. Demarco, D. A. Golimowski, G. F. Hartig, L. Infante, A. R. Martel, G. K. Miley, F. Menanteau, G. R. Meurer, M. Sirianni, & R. L. White.* 596, L143 (2003)

BLANC, G. See KNOP, R. A., et al. New Constraints on Ω_M, Ω_Λ, and w from an Independent Set of 11 High-Redshift Supernovae Observed with the *Hubble Space Telescope*.

BLANCARD, C. Measurements and Calculations of Photoionization Cross Sections of Multiply Charged Ions in Ground and Metastable States along the Isonuclear Series of Oxygen: O^{2+} to O^{4+}. *J.-P. Champeaux, J.-M. Bizau, D. Cubaynes, C. Blancard, S. Nahar, D. Hitz, J. Bruneau, & F. J. Wuilleumier.* 148, 583 (2003)

BLANDFORD, R. D. The Gravitational Lens B1608+656. I. V-, I-, and H-Band *Hubble Space Telescope* Imaging. *G. Surpi & R. D. Blandford.* 584, 100 (2003)

See KOOPMANS, L. V. E., et al. Extrinsic Radio Variability of JVAS/CLASS Gravitational Lenses.

Polarization of Prompt Gamma-Ray Burst Emission: Evidence for Electromagnetically Dominated Outflow. *M. Lyutikov, V. I. Pariev, & R. D. Blandford.* 597, 998 (2003)

The Hubble Constant from the Gravitational Lens B1608+656. *L. V. E. Koopmans, T. Treu, C. D. Fassnacht, R. D. Blandford, & G. Surpi.* 599, 70 (2003)

BLANDFORD, ROGER D. The Redshift of the Lensed Object in the Einstein Ring B0218+357. *Judith G. Cohen, Charles R. Lawrence, & Roger D. Blandford.* 583, 67 (2003)

Black Hole Mass and Spin Coevolution by Mergers. *Scott A. Hughes & Roger D. Blandford.* 585, L101 (2003)

Locating the Launching Region of T Tauri Winds: The Case of DG Tauri. *Jeffrey M. Anderson, Zhi-Yun Li, Ruben Krasnopolsky, & Roger D. Blandford.* 590, L107 (2003)

Magnetocentrifugal Launching of Jets from Accretion Disks. II. Inner Disk-driven Winds. *Ruben Krasnopolsky, Zhi-Yun Li, & Roger D. Blandford.* 595, 631 (2003)

BLAND-HAWTHORN, J. Hα Emission from High-Velocity Clouds and Their Distances. *M. E. Putman, J. Bland-Hawthorn, S. Veilleux, B. K. Gibson, K. C. Freeman, & P. R. Maloney.* 597, 948 (2003)

BLAND-HAWTHORN, JOSS. The Large-Scale Bipolar Wind in the Galactic Center. *Joss Bland-Hawthorn & Martin Cohen.* 582, 246 (2003)

See REULAND, MICHIEL, et al. Giant Lyα Nebulae Associated with High-Redshift Radio Galaxies.

BLANTON, ELIZABETH L. *Chandra* Observations of the Cooling Flow Cluster Abell 2052. *Elizabeth L. Blanton, Craig L. Sarazin, & Brian R. McNamara.* 585, 227 (2003)

Chandra Obsrevations of the Central Region of A3112. *Motokazu Takizawa, Craig L. Sarazin, Elizabeth L. Blanton, & Greg B. Taylor.* 595, 142 (2003)

Low-Mass X-Ray Binaries and Globular Clusters in Early-Type Galaxies. *Craig L. Sarazin, Arunav Kundu, Jimmy A. Irwin, Gregory R. Sivakoff, Elizabeth L. Blanton, & Scott W. Randall.* 595, 743 (2003)

BLANTON, MICHAEL. See RUDNICK, GREGORY, et al. The Rest-Frame Optical Luminosity Density, Color, and Stellar Mass Density of the Universe from $z = 0$ to $z = 3$.

BLANTON, MICHAEL R. See HOGG, DAVID W., et al. The Overdensities of Galaxy Environments as a Function of Luminosity and Color.

See GLAZEBROOK, KARL, et al. The Sloan Digital Sky Survey: The Cosmic Spectrum and Star Formation History.

The Galaxy Luminosity Function and Luminosity Density at Redshift $z = 0.1$. *Michael R. Blanton, David W. Hogg, Neta A. Bahcall, J. Brinkmann, Malcolm Britton, Andrew J. Connolly, István Csabai, Masataka Fukugita, Jon Loveday, Avery Meiksin, Jeffrey A. Munn, R. C. Nichol, Sadanori Okamura, Thomas Quinn, Donald P. Schneider, Kazuhiro Shimasaku, Michael A. Strauss, Max Tegmark, Michael S. Vogeley, & David H. Weinberg.* 592, 819 (2003)

The Broadband Optical Properties of Galaxies with Redshifts $0.02 < z < 0.22$. *Michael R. Blanton, David W. Hogg, Neta A. Bahcall, Ivan K. Baldry, J. Brinkmann, István Csabai, Daniel Eisenstein, Masataka Fukugita, James E. Gunn, Željko Ivezić, D. Q. Lamb, Robert H. Lupton, Jon Loveday, Jeffrey A. Munn, R. C. Nichol, Sadanori Okamura, David J. Schlegel, Kazuhiro Shimasaku, Michael A. Strauss, Michael S. Vogeley, & David H. Weinberg.* 594, 186 (2003)

BLASI, PASQUALE. Nonthermal Radiation from Clusters of Galaxies: The Role of Merger Shocks in Particle Acceleration. *Stefano Gabici & Pasquale Blasi.* 583, 695 (2003)

BLAUFUSS, E. See ATKINS, R., et al. Observation of TeV Gamma Rays from the Crab Nebula with Milagro Using a New Background Rejection Technique.

BLEEKER, J. A. M. High Resolution X-Ray Spectroscopic Constraints on Cooling-Flow Models for Clusters of Galaxies. *J. R. Peterson, S. M. Kahn, F. B. S. Paerels, J. S. Kaastra, T. Tamura, J. A. M. Bleeker, C. Ferrigno, & J. G. Jernigan.* 590, 207 (2003)

BLEHM, ZACHARY. What Is the Role of the Kink Instability in Solar Coronal Eruptions? *Robert J. Leamon, Richard C. Canfield, Zachary Blehm, & Alexei A. Pevtsov.* 596, L255 (2003)

BLEVINS, H. T. The Effect of Background Subtraction on the Temperature of EIT Coronal Loops. *J. T. Schmelz, J. E. Beene, K. Nasraoui, H. T. Blevins, P. C. H. Martens, & J. W. Cirtain.* 599, 604 (2003)

BLITZ, L. Giant Molecular Clouds in M33. I. BIMA All-Disk Survey. *G. Engargiola, R. L. Plambeck, E. Rosolowsky, & L. Blitz.* 149, 343 (2003)

Giant Molecular Clouds in M33. II. High-Resolution Observations. *E. Rosolowsky, G. Engargiola, R. Plambeck, & L. Blitz.* 599, 257 (2003)

BLITZ, LEO. The BIMA Survey of Nearby Galaxies (BIMA SONG). II. The CO Data. *Tamara T. Helfer, Michele D. Thornley, Michael W. Regan, Tony Wong, Kartik Sheth, Stuart N. Vogel, Leo Blitz, & Douglas C.-J. Bock.* 145, 259 (2003)

High-Resolution Measurements of the Dark Matter Halo of NGC 2976: Evidence for a Shallow Density Profile. *Joshua D. Simon, Alberto D. Bolatto, Adam Leroy, & Leo Blitz.* 596, 957 (2003)

BLOEMHOF, E. E. Suppression of Speckle Noise by Speckle Pinning in Adaptive Optics. *E. E. Bloemhof.* 582, L59 (2003)

BLONDIN, JOHN M. Stability of Standing Accretion Shocks, with an Eye toward Core-Collapse Supernovae. *John M. Blondin, Anthony Mezzacappa, & Christine DeMarino.* 584, 971 (2003)

BLOOM, E. D. See SAZ PARKINSON, P. M., et al. Long-Term X-Ray Variability of Circinus X-1.

See TOURNEAR, D., et al. X-Ray Bursts in Neutron Star and Black Hole Binaries from Unconvetional Stellar Aspect Experiment and *Rossi X-Ray Timing Explorer* Data: Detections and Upper Limits.

BLOOM, J. S. See PRICE, P. A., et al. GRB 010921: Strong Limits on an Underlying Supernova from the *Hubble Space Telescope*.

See BARTH, AARON J., et al. Optical Spectropolarimetry of the GRB 020813 Afterglow.

Keck Spectroscopy and *Hubble Space Telescope* Imaging of GRB 000926: Probing a Host Galaxy at $z = 2.038$. *S. Castro, T. J. Galama, F. A. Harrison, J. A. Holtzman, J. S. Bloom, S. G. Djorgovski, & S. R. Kulkarni.* 586, 128 (2003)

See GALAMA, T. J., et al. *Hubble Space Telescope* and Ground-based Optical and Ultraviolet Observations of GRB 010222.

See PRICE, P. A., et al. Discovery of GRB 020405 and Its Late Red Bump.

See FRAIL, D. A., et al. The Broadband Afterglow of GRB 980703.

The Redshift and the Host Galaxy of GRB 980613: A Gammay-Ray Burst from a Merger-induced Starburst? *S. G. Djorgovski, J. S. Bloom, & S. R. Kulkarni.* 591, L13 (2003)

Gamma-Ray Burst Energetics and the Gamma-Ray Burst Hubble Diagram: Promises and Limitations. *J. S. Bloom, D. A. Frail, & S. R. Kulkarni.* 594, 674 (2003)

See MATHESON, T., et al. Photometry and Spectroscopy of GRB 03029 and Its Associated Supernova 2003dh: The First Two Months.

The First Two Host Galaxies of X-Ray Flashes: XRF 011030 and XRF 020427. *J. S. Bloom, D. Fox, P. G. van Dokkum, S. R. Kulkarni, E. Berger, S. G. Djorgovski, & D. A. Frail.* 599, 957 (2003)

BLOOMFIELD, D. SHAUN. Observational Evidence for Mode Coupling in the Chromospheric Network. *R. T. James McAteer, Peter T. Gallagher, David R. Williams, Mihalis Mathioudakis, D. Shaun Bloomfield, Kenneth J. H. Phillips, & Francis P. Keenan.* 587, 806 (2003)

BLOSER, P. F. X-Ray Dip Monitoring of XB 1916−053. *T. Narita, J. E. Grindlay, P. F. Bloser, & Y. Chou.* 593, 1007 (2003)

BLUM, R. D. Really Cool Stars and the Star Formation History at the Galactic Center. *R. D. Blum, Solange V. Ramírez, K. Sellgren, & K. Olsen.* 597, 323 (2003)

BLUM, ROBERT D. See SMITH, VERNE V., et al. High-Resolution Infrared Spectroscopy of the Brown Dwarf ϵ Indi Ba.

BLUNDELL, KATHERINE M. Lowering Infrared Cluster Magnetic Field Strengths: The Radio Galaxy Contributions. *Lawrence Rudnick & Katherine M. Blundell.* 588, 143 (2003)

A Relativistic Jet in the Radio-quiet Quasar PG 1407+263. *Katherine M. Blundell, Anthony J. Beasley, & Geoffrey V. Bicknell.* 591, L103 (2003)

BLUSTIN, ALEXANDER J. A Long Look at NGC 3783 with the *XMM-Newton* Reflection Grating Spectrometer. *Ehud Behar, Andrew P. Rasmussen, Alexander J. Blustin, Masao Sako, Steven M. Kahn, Jelle S. Kaastra, Graziella Branduardi-Raymont, & Katrien C. Steenbrugge.* 598, 232 (2003)

BOBOLTZ, D. A. Kinematics of the SGR B2 (N-LMH) Molecular Core. *Jan M. Hollis, J. A. Pedelty, D. A. Boboltz, S.-Y. Liu, L. E. Snyder, Patrick Palmer, F. J. Lovas, & P. R. Jewell.* 596, L235 (2003)

High-Resolution Continuum Imaging at 1.3 and 0.7 Centimeters of the W3 IRS 5 Region. *T. L. Wilson, D. A. Boboltz, R. A. Gaume, & S. T. Megeath.* 597, 434 (2003)

BOBROWSKY, MATTHEW. The Dust Ring of Luminous Blue Variable Candidate HD 168625: Infrared Observations and Model Calculations. *Timothy B. O'Hara, Margaret Meixner, Angela K. Speck, Toshiya Ueta, & Matthew Bobrowsky.* 598, 1255 (2003)

BOCCALETTI, A. Ground-based Near-Infrared Imaging of the HD 141569 Circumstellar Disk. *A. Boccaletti, J.-C. Augereau, F. Marchis, & J. Hahn.* 585, 494 (2003)

BOCHSLER, P. Calcium Abundance in the Solar Wind. *P. Wurz, P. Bochsler, J. A. Paquette, & F. M. Ipavich.* 583, 489 (2003)

Measurement of ^{3}He/^{4}He in the Local Interstellar Medium: The Collisa Experiment on *Mir*. *E. Salerno, F. Bühler, P. Bochsler, H. Busemann, M. L. Bassi, G. N. Zastenker, Yu. N. Agafonov, & N. A. Eismont.* 585, 840 (2003)

BOCK, DOUGLAS C.-J. The BIMA Survey of Nearby Galaxies (BIMA SONG). II. The CO Data. *Tamara T. Helfer, Michele D. Thornley, Michael W. Regan, Tony Wong, Kartik Sheth, Stuart N. Vogel, Leo Blitz, & Douglas C.-J. Bock.* 145, 259 (2003)

BOCK, J. J. See BENSON, B. A., et al. Peculiar Velocity Limits from Measurements of the Spectrum of the Sunyaev-Zeldovich Effect in Six Clusters of Galaxies.

See CRILL, B. P., et al. BOOMERANG: A Balloon-Borne Millimeter-Wave Telescope and Total Power Receiver for Mapping Anisotropy in the Cosmic Microwave Background.

See RUNYAN, M. C., et al. ACBAR: The Arcminute Cosmology Bolometer Array Receiver.

See GOLDSTEIN, J. H., et al. Estimates of Cosmological Parameters Using the Cosmic Microwave Background Angular Power Spectrum of ACBAR.

See Ruhl, J. E., et al. Improved Measurement of the Angular Power Spectrum of Temperature Anisotropy in the Cosmic Microwave Background from Two New Analyses of BOOMERANG Observations.

Bode, Paul. See Bahcall, Neta A., et al. The Cluster Mass Function from Early Sloan Digital Sky Survey Data: Cosmological Implications.

Tree Particle-Mesh: An Adaptive, Efficient, and Parallel Code for Collisionless Cosmological Simulation. *Paul Bode & Jeremiah P. Ostriker.* 145, 1 (2003)

Cosmological Contraints from a Combined Analysis of the Cluster Mass Function and Microwave Background Anisotropies. *Alessandro Melchiorri, Paul Bode, Neta A. Bahcall, & Joseph Silk.* 586, L1 (2003)

The Amplitude of Mass Fluctuations. *Paul Bode & Neta A. Bahcall.* 588, L1 (2003)

The Richness-dependent Cluster Correlation Function: Early Sloan Digital Sky Survey Data. *Neta A. Bahcall, Feng Dong, Lei Hao, Paul Bode, Jim Annis, James E. Gunn, & Donald P. Schneider.* 599, 814 (2003)

Boden, A. See Colavita, M., et al. Observations of DG Tauri with the Keck Interferometer.

See Swain, Mark, et al. Interferometer Observations of Subparsec-Scale Infrared Emission in the Nucleus of NGC 4151.

Bodenheimer, P. Turbulence in Accretion Disks: Vorticity Generation and Angular Momentum Transport via the Global Baroclinic Instability. *H. H. Klahr & P. Bodenheimer.* 582, 869 (2003)

Bodenheimer, Peter. On the Radii of Extrsolar Giant Planets. *Peter Bodenheimer, Gregory Laughlin, & Douglas N. C. Lin.* 592, 555 (2003)

Bodenheimer, Peter H. The Effect of Tidal Inflation Instability on the Mass and Dynamical Evolution of Extrasolar Planets with Ultrashort Periods. *Pin-Gao Gu, Douglas N. C. Lin, & Peter H. Bodenheimer.* 588, 509 (2003)

Böhm, A. Internal Kinematics of Spiral Galaxies in Distant Clusters. *B. L. Ziegler, A. Böhm, K. Jäger, J. Heidt, & C. Möllenhoff.* 598, L87 (2003)

Bohringer, H. The *ROSAT* All-Sky Survey: A Catalog of Clusters of Galaxies in a Region of 1 Steradian around the South Galactic Pole: Erratum (ApJS, 140, 239 [2002]). *R. Cruddace, W. Voges, H. Böhringer, C. Collins, D. Yentis, & H. MacGillivray.* 144, 299 (2003) (Orig. paper in 140, 239 (2002))

XMM-Newton Observations of the Perseus Cluster. I. The Temperature and Surface Brightness Structure. *E. Churazov, W. Forman, C. Jones, & H. Boehringer.* 590, 225 (2003)

Role of Clusters of Galaxies in the Evolution of the Metal Budget in the Universe. *A. Finoguenov, A. Burkert, & H. Böhringer.* 594, 136 (2003)

The *ROSAT* North Ecliptic Pole Survey: The Optical Identifications. *I. M. Gioia, J. P. Henry, C. R. Mullis, H. Böhringer, U. G. Briel, W. Voges, & J. P. Huchra.* 149, 29 (2003)

Böker, Torsten. Molecular Gas and the Nuclear Star Cluster in IC 342: Sufficient Inflow for Recurring Star Formation Events? *Eva Schinnerer, Torsten Böker, & David S. Meier.* 591, L115 (2003)

Boer, M. See Crew, G. B., et al. *HETE-2* Localization and Observation of the Bright, X-Ray–rich Gamma-Ray Burst GRB 021211.

Börner, G. Mass and Redshift Dependence of Dark Halo Structure. *D. H. Zhao, Y. P. Jing, H. J. Mo, & G. Börner.* 597, L9 (2003)

Börner, Gerhard. Spatial and Dynamical Biases in Velocity Statistics of Galaxies. *Kohji Yoshikawa, Y. P. Jing, & Gerhard Börner.* 590, 654 (2003)

Boeser, S. See Ahrens, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

Boesgaard, Ann Merchant. Beryllium Abundances in F and G Dwarfs in the Pleiades and α Persei Clusters from Keck High-Resolution Echelle Spectrometer Observations. *Ann Merchant Boesgaard, Eric Armengaud, & Jeremy R. King.* 582, 410 (2003)

Beryllium Abundances in F and G Dwarfs in the Coma Cluster and the Ursa Major Moving Group from Keck HIRES Observations. *Ann Merchant Boesgaard, Eric Armengaud, & Jeremy R. King.* 583, 955 (2003)

Böttcher, M. Two-dimensional Monte Carlo/Fokker-Planck Simulations of Flares in Accretion Disk Corona Models. *M. Böttcher, D. R. Jackson, & E. P. Liang.* 586, 389 (2003)

Coordinated Multiwavelength Observations of BL Lacertae in 2000. *M. Böttcher, A. P. Marscher, M. Ravasio, M. Villata, C. M. Raiteri, H. D. Aller, M. F. Aller, H. Teräsranta, O. Mang, G. Tagliaferri, F. Ahoronian, H. Krawczynski, O. M. Kurtanidze, M. G. Nikolashvili, M. A. Ibrahimov, I. E. Papadakis, K. Tsinganos, K. Sadakane, N. Okada, L. O. Takalo, A. Sillanpää, G. Tosti, S. Ciprini, A. Frasca, E. Marilli, R. Robb, J. C. Noble, S. G. Jorstad, V. A. Hagen-Thorn, V. M. Larionov, R. Nesci, M. Maesano, R. D. Schwartz, J. Basler, P. W. Gorham, H. Iwamatsu, T. Kato, C. Pullen, E. Benítez, J. A. de Diego, M. Moilanen, A. Oksanen, D. Rodriguez, A. C. Sadun, M. Kelly, M. T. Carini, H. R. Miller, S. Catalano, D. Dultzin-Hacyan, J. H. Fan, G. Ghisellini, R. Ishioka, H. Karttunen, P. Keinänen, N. A. Kudryavtseva, M. Lainela, L. Lanteri, E. G. Larionova, K. Matsumoto, J. R. Mattox, I. McHardy, F. Montagni, G. Nucciarelli, L. Ostorero, J. Papamastorakis, M. Pasanen, G. Sobrito, & M. Uemura.* 596, 847 (2003)

Bogdan, T. J. Waves in the Magnetized Solar Atmosphere. II. Waves from Localized Sources in Magnetic Flux Concentrations. *T. J. Bogdan, M. Carlsson, V. Hansteen, A. McMurray, C. S. Rosenthal, M. Johnson, S. Petty-Powell, E. J. Zita, R. F. Stein, S. W. McIntosh, & Å. Nordlund.* 599, 626 (2003)

Bogosavljevic, Milan. A Limit on the Number of Isolated Neutron Stars Detected in the *ROSAT* Bright Source Catalogue. *Robert E. Rutledge, Derek W. Fox, Milan Bogosavljevic, & Ashish Mahabal.* 598, 458 (2003)

Bohlender, D. A. Evidence for Planet-Induced Chromospheric Activity on HD 179949. *E. Shkolnik, G. A. H. Walker, & D. A. Bohlender.* 597, 1092 (2003)

Bohn, Courtlandt L. Supermassive Black Hole Binaries as Galactic Blenders. *Henry E. Kandrup, Ioannis V. Sideris, Balša Terzić, & Courtlandt L. Bohn.* 597, 111 (2003)

Boice, D. C. An S_2 Fluorescence Model for Interpreting High-Resolution Cometary Spectra. I. Model Description and Initial Results. *Celine Reyle & D. C. Boice.* 587, 464 (2003)

Bois, Eric. Conditions of Dynamical Stability for the HD 160691 Planetary System. *Eric Bois, Ludmila Kiseleva-Eggleton, Nicolas Rambaux, & Elke Pilat-Lohinger.* 598, 1312 (2003)

Bolatto, A. D. CO $J = 7 \rightarrow 6$ Observations of NGC 253: Cosmic-Ray–heated Warm Molecular Gas. *C. M. Bradford, T. Nikola, G. J. Stacey, A. D. Bolatto, J. M. Jackson, M. L. Savage, J. A. Davidson, & S. J. Higdon.* 586, 891 (2003)

Bolatto, Alberto. A Giant Outburst at Millimeter Wavelengths in the Orion Nebula. *Geoffrey C. Bower, Richard L. Plambeck, Alberto Bolatto, Nate McCrady, James R. Graham, Imke de Pater, Michael C. Liu, & Frederick K. Baganoff.* 598, 1140 (2003)

Bolatto, Alberto D. Unusual CO Line Ratios and Kinematics in the N83/N84 Region of the Small Magellanic Cloud. *Alberto D. Bolatto, Adam Leroy, Frank P. Israel, & James M. Jackson.* 595, 167 (2003)

High-Resolution Measurements of the Dark Matter Halo of NGC 2976: Evidence for a Shallow Density Profile. *Joshua D. Simon, Alberto D. Bolatto, Adam Leroy, & Leo Blitz.* 596, 957 (2003)

Boldyrev, Stanislav. Structure Function Scaling in the Taurus and Perseus Molecular Cloud Complexes. *Paolo Padoan, Stanislav Boldyrev, William Langer, & Ake Nordlund.* 583, 308 (2003)

Scintillations and Lévy Flights through the Interstellar Medium. *Stanislav Boldyrev & Carl Gwinn.* 584, 791 (2003)

Bolte, M. The White Dwarf Deficit in Open Clusters: Dynamical Processes. *M. Fellhauer, D. N. C. Lin, M. Bolte, S. J. Aarseth, & K. A. Williams.* 595, L53 (2003)

See Matheson, T., et al. Photometry and Spectroscopy of GRB 03029 and Its Associated Supernova 2003dh: The First Two Months.

Bolte, Michael. The C IV Mass Density of the Universe at Redshift 5. *Max Pettini, Piero Madau, Michael Bolte, Jason X. Prochaska, Sara L. Ellison, & Xiaohui Fan.* 594, 695 (2003)

Bolton, Adam S. Prospects for the Determination of H_0 through Observation of Multiply Imaged Supernovae in Galaxy Cluster Fields. *Adam S. Bolton & Scott Burles.* 592, 17 (2003)

Bolton, C. T. See Gies, D. R., et al. Wind Accretion and State Transitions in Cygnus X-1.

Bombaci, I. Gamma-Ray Bursts from Delayed Collapse of Neutron Stars to Quark Matter Stars. *Z. Berezhiani, I. Bombaci, A. Drago, F. Frontera, & A. Lavagno.* 586, 1250 (2003)

Bon, E. The Line Emission Region in III Zw 2: Kinematics and Variability. *L. Č. Popović, E. G. Mediavilla, E. Bon, N. Stanić, & A. Kubičela.* 599, 185 (2003)

Bonamente, M. Soft X-Ray Excess Emission in Clusters of Galaxies Observed with *XMM-Newton*. *J. Nevalainen, R. Lieu, M. Bonamente, & D. Lumb.* 584, 716 (2003)

Bonamente, Massimiliano. See LaRoque, Samuel J., et al. Sunyaev-Zeldovich Effect Imaging of MACS Galaxy Clusters at $z > 0.5$.

A Massive Warm Baryonic Halo in the Coma Cluster. *Massimiliano Bonamente, Marshall K. Joy, & Richard Lieu.* 585, 722 (2003)

BONANOS, A. Z. Reanalysis of Very Large Telescope Data for M83 with Image Subtraction—Ninefold Increase in Number of Cepheids. *A. Z. Bonanos & K. Z. Stanek.* 591, L111 (2003)

See MATHESON, T., et al. Photometry and Spectroscopy of GRB 030329 and Its Associated Supernova 2003dh: The First Two Months.

BOND, H. E. See DRAKE, JEREMY J., et al. The Extraordinary X-Ray Light Curve of the Classical Nova V1494 Aquilae (1999 No. 2) in Outburst: The Discovery of Pulsations and a "Burst."

See NESS, J.-U., et al. A *Chandra* Low Energy Transmission Grating Spectrometer Observation of V4743 Sagittarii: A Supersoft X-Ray Source and a Violently Variable Light Curve.

BOND, I. A. See SUMI, T., et al. Microlensing Optical Depth toward the Galactic Bulge from Microlensing Observations during 2000 with Difference Image Analysis.

BOND, I. H. See HOLDER, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.

See HALL, T. A., et al. Search for TeV Emissions from Pulsars in Binary Systems.

See DE LA CALLE PÉREZ, I., et al. Search for High-Energy Gamma Rays from an X-Ray–Selected Blazar Sample.

BOND, J. R. See MASON, B. S., et al. The Anisotropy of the Microwave Background to $l = 3500$: Deep Field Observatons with the Cosmic Background Imager.

See PEARSON, T. J., et al. The Anisotropy of the Microwave Background to $l = 3500$: Mosaic Observations with the Cosmic Background Imager.

See MYERS, S. T., et al. A Fast Gridded Method for the Estimation of the Power Spectrum of the Cosmic Microwave Background from Interferometer Data with Application to the Cosmic Background Imager.

See SIEVERS, J. L., et al. Cosmological Parameters from Cosmic Background Imager Observations and Comparisons with BOOMERANG, DASI, and MAXIMA.

See GOLDSTEIN, J. H., et al. Estimates of Cosmological Parameters Using the Cosmic Microwave Background Angular Power Spectrum of ACBAR.

See RUHL, J. E., et al. Improved Measurement of the Angular Power Spectrum of Temperature Anisotropy in the Cosmic Microwave Background from Two New Analyses of BOOMERANG Observations.

BOND, JADE. Four New Planets Orbiting Metal-Enriched Stars. *C. G. Tinney, R. Paul Butler, Geoffrey W. Marcy, Hugh R. A. Jones, Alan J. Penny, Chris McCarthy, Brad D. Carter, & Jade Bond.* 587, 423 (2003)

BOND, NICHOLAS A. A Quadruple-Phase Strong Mg II Absorber at $z \sim 0.9902$ toward PG 1634+706. *Jie Ding, Jane C. Charlton, Nicholas A. Bond, Stephanie G. Zonak, & Christopher W. Churchill.* 587, 551 (2003)

High-Resolution STIS/*Hubble Space Telescope* and HIRES/Keck Spectra of Three Weak Mg II Absorbers toward PG 1643+706. *Jane C. Charlton, Jie Ding, Stephanie G. Zonak, Christopher W. Churchill, Nicholas A. Bond, & Jane R. Rigby.* 589, 111 (2003)

BONG, SU-CHAN. $H\alpha$, Extreme-Ultraviolet, and Microwave Observations of the 2000 March 22 Solar Flare and Spontaneous Magnetic Reconnection. *Jeongwoo Lee, Peter T. Gallagher, Dale E. Gary, Gelu M. Nita, G. S. Choe, Su-Chan Bong, & Hong Sik Yun.* 585, 524 (2003)

BONIFACIO, PIERCARLO. See BARBUY, BEATRIZ, et al. Oxygen Abundance in the Template Halo Giant HD 122563.

On the Origin of HE 0107−5240, the Most Iron-deficient Star Presently Known. *Marco Limongi, Alessandro Chieffi, & Piercarlo Bonifacio.* 594, L123 (2003)

BONO, G. See ISRAEL, G. L., et al. The Infrared Counterpart to the Anomalous X-Ray Pulsar 1RXS J170849−400910.

BONO, GIUSEPPE. Classical Cepheid Pulsation Models. IX. New Input Physics. *Silvia Petroni, Giuseppe Bono, Marcella Marconi, & Robert F. Stellingwerf.* 599, 522 (2003)

BONOMETTO, S. A. Modeling Dynamical Dark Energy. *R. Mainini, A. V. Macciò, S. A. Bonometto, & A. Klypin.* 599, 24 (2003)

Halo Properties in Models with Dynamical Dark Energy. *A. Klypin, A. V. Macciò, R. Mainini, & S. A. Bonometto.* 599, 31 (2003)

BONOMETTO, SILVIO P. Mass of Clusters in Simulations. *Andrea V. Macciò, Giuseppe Murante, & Silvio P. Bonometto.* 588, 35 (2003)

BOOTH, A. See COLAVITA, M., et al. Observations of DG Tauri with the Keck Interferometer.

See SWAIN, MARK, et al. Interferometer Observations of Subparsec-Scale Infrared Emission in the Nucleus of NGC 4151.

BOOTH, R. S. See GREENHILL, L. J., et al. A Warped Accretion Disk and Wide-Angle Outflow in the Inner Parsec of the Circinus Galaxy.

BOOTHROYD, ARNOLD I. Our Sun. IV. The Standard Model and Helioseismology: Consequences of Uncertainties in Input Physics and in Observed Solar Parameters. *Arnold I. Boothroyd & I.-Juliana Sackmann.* 583, 1004 (2003)

Our Sun. V. A Bright Young Sun Consistent with Helioseismology and Warm Temperatures on Ancient Earth and Mars. *I.-Juliana Sackmann & Arnold I. Boothroyd.* 583, 1024 (2003)

BORGANI, S. See GILLI, R., et al. Tracing the Large-Scale Structure in the *Chandra* Deep Field South.

Iron Abundance in the Intracluster Medium at High Redshift. *P. Tozzi, P. Rosati, S. Ettori, S. Borgani, V. Mainieri, & C. Norman.* 593, 705 (2003)

BORKOWSKI, J. See MEREGHETTI, S., et al. *Integral* and *XMM-Newton* Observations of the Weak Gamma-Ray Burst GRB 030227.

BORKOWSKI, K. J. Ejecta Detection in Middle-aged Large Magellanic Cloud Supernova Remnants 0548−70.4 and 0534−69.9. *S. P. Hendrick, K. J. Borkowski, & S. P. Reynolds.* 593, 370 (2003)

Discovery of a New Pulsar Wind Nebula in the Large Magellanic Cloud. *B. M. Gaensler, S. P. Hendrick, S. P. Reynolds, & K. J. Borkowski.* 594, L111 (2003)

BORKOWSKI, KAZIMIERZ J. Thermal X-Ray Emission from Shocked Ejecta in Type Ia Supernova Remnants. Prospects for Explosion Mechanism Identification. *Carles Badenes, Eduardo Bravo, Kazimierz J. Borkowski, & Inmaculada Domínguez.* 593, 358 (2003)

BORNE, K. See MCDOWELL, J. C., et al. *Chandra* Observations of Extended X-Ray Emission in Arp 220.

BOROSON, B. *Chandra* and *XMM* Observations of the Accretion Disk Corona Source 0921−63. *T. R. Kallman, L. Angelini, B. Boroson, & J. Cottam.* 583, 861 (2003)

Classifying X-Ray Sources in External Galaxies from X-Ray Colors. *A. H. Prestwich, J. A. Irwin, R. E. Kilgard, M. I. Krauss, A. Zezas, F. Primini, P. Kaaret, & B. Boroson.* 595, 719 (2003)

BOROSON, BRAM. *Chandra* Grating Spectroscopy of the X-Ray Binary 4U 1700−37 in a Flaring State. *Bram Boroson, Saeqa Dil Vrtilek, Timothy Kallman, & Michael Corcoran.* 592, 516 (2003)

BOROSON, TODD A. Does the Narrow [O III] λ5007 Line Reflect the Stellar Velocity Dispersion in Active Galactic Nuclei. *Todd A. Boroson.* 585, 647 (2003)

BOROZDIN, KONSTANTIN N. Observations of the X-Ray Afterglows of GRB 011211 and GRB 001025 by *XMM-Newton*. *Konstantin N. Borozdin & Sergey P. Trudolyubov.* 583, L57 (2003)

Fast X-Ray Transients and Their Connection to Gamma-Ray Bursts. *Vadim A. Arefiev, William C. Priedhorsky, & Konstantin N. Borozdin.* 586, 1238 (2003)

BORRILL, J. See RUHL, J. E., et al. Improved Measurement of the Angular Power Spectrum of Temperature Anisotropy in the Cosmic Microwave Background from Two New Analyses of BOOMERANG Observations.

BORYS, C. See CHAPMAN, S. C., et al. The Properties of Microjansky Radio Sources in the Hubble Deep Field–North, SSA 13, and SSA 22 Fields.

BOSCALERI, A. See CRILL, B. P., et al. BOOMERANG: A Balloon-Borne Millimeter-Wave Telescope and Total Power Receiver for Mapping Anisotropy in the Cosmic Microwave Background.

See RUHL, J. E., et al. Improved Measurement of the Angular Power Spectrum of Temperature Anisotropy in the Cosmic Microwave Background from Two New Analyses of BOOMERANG Observations.

BOSELLI, A. Capturing a Star Formation Burst in Galaxies Infalling onto the Cluster A1367. *G. Gavazzi, L. Cortese, A. Boselli, J. Iglesias-Paramo, J. M. Vilchez, & L. Carrasco.* 597, 210 (2003)

BOSMA, A. Nascent Starbursts in Synchrotron-deficient Galaxies with Hot Dust. *H. Roussel, G. Helou, R. Beck, J. J. Condon, A. Bosma, K. Matthews, & T. H. Jarrett.* 593, 733 (2003)

BOSS, ALAN P. On Pressure Gradients and Rapid Migration of Solids in a Nonuniform Solar Nebula. *Nader Haghighipour & Alan P. Boss.* 583, 996 (2003)

On Pressure Gradients and Rapid Migration of Solids in a Nonuniform Solar Nebula: Erratum (ApJ, 583, 996 [2003]). *Nader Haghighipour & Alan P. Boss.* 586, 1442 (2003) (Orig. paper in 583, 996 (2003))

On Gas Drag–Induced Rapid Migration of Solids in a Nonuniform Solar Nebula. *Nader Haghighipour & Alan P. Boss.* 598, 1301 (2003)

Rapid Formation of Outer Giant Planets by Disk Instability. *Alan P. Boss.* 599, 577 (2003)

BOTHMER, V. Identification of Solar Sources of Major Geomagnetic Storms between 1996 and 2000. *J. Zhang, K. P. Dere, R. A. Howard, & V. Bothmer.* 582, 520 (2003)

BOTHUN, G. Extraordinary Diffuse Light in Hickson Compact Group 90. *P. M. White, G. Bothun, Martín A. Guerrero, Michael J. West, & Wayne A. Barkhouse.* 585, 739 (2003)

BOTNER, O. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

BOTTA, O. The Astrobiology of Nucleobases. *Z. Peeters, O. Botta, S. B. Charnley, R. Ruiterkamp, & P. Ehrenfreud.* 593, L129 (2003)

BOTTKE, WILLIAM F. Recent Origin of the Solar System Dust Bands. *David Nesvorný, William F. Bottke, Harold F. Levison, & Luke Dones.* 591, 486 (2003)

BOUCHE, NICOLAS. Clustering of Galaxies at $z \sim 3$ Around the Probable Damped Lyα Absorber Toward QSO APM 08279+5255. *Nicolas Bouche & James D. Lowenthal.* 596, 810 (2003)

BOUCHET, L. See MEREGHETTI, S., et al. *Integral* and *XMM-Newton* Observations of the Weak Gamma-Ray Burst GRB 030227.

BOUCHTA, A. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

BOUGERET, J.-L. Constraints on Coronal Mass Ejection Dynamics from Simultaneous Radio and White-Light Observations. *M. J. Reiner, A. Vourlidas, O. C. St. Cyr, J. T. Burkepile, R. A. Howard, M. L. Kaiser, N. P. Prestage, & J.-L. Bougeret.* 590, 533 (2003)

BOUHALI, O. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

BOURET, J. C. A Tale of Two Stars: The Extreme O7 Iaf+ Supergiant AV 83 and the OC7.5 III((f)) Star AV 69. *D. John Hillier, T. Lanz, S. R. Heap, I. Hubeny, L. J. Smith, C. J. Evans, D. J. Lennon, & J. C. Bouret.* 588, 1039 (2003)

BOURET, J.-C. Quantitative Spectroscopy of O Stars at Low Metallicity: O Dwarfs in NGC 346. *J.-C. Bouret, T. Lanz, D. J. Hillier, S. R. Heap, I. Hubeny, D. J. Lennon, L. J. Smith, & C. J. Evans.* 595, 1182 (2003)

BOURKE, T. L. Disks around the Young Stars with TW Hydrae and HD 100546 Imaged at 3.4 Millimeters with the Australia Telescope Compact Array. *D. J. Wilner, T. L. Bourke, C. M. Wright, J. K. Jørgensen, E. F. van Dishoeck, & T. Wong.* 596, 597 (2003)

BOURNAUD, F. Polar Ring Galaxies and the Tully-Fisher Relation: Implications for the Dark Halo Shape. *E. Iodice, M. Arnaboldi, F. Bournaud, F. Combes, L. S. Sparke, W. van Driel, & M. Capaccioli.* 585, 730 (2003)

BOUTE, DAVID A. Circulation Flows: Cooling Flows with Bubble Return. *William G. Mathews, Fabrizio Brighenti, David A. Boute, & Aaron D. Lewis.* 596, 159 (2003)

BOUTELL, R. See COLAVITA, M., et al. Observations of DG Tauri with the Keck Interferometer.

BOUVIER, J. A Census of the Young Cluster IC 348. *K. L. Luhman, John R. Stauffer, A. A. Muench, G. H. Rieke, E. A. Lada, J. Bouvier, & C. J. Lada.* 593, 1093 (2003)

BOUWENS, R. See TRAN, H. D., et al. Advanced Camera for Surveys Observations of Young Star Clusters in the Interacting Galaxy UGC 10214.

BOUWENS, R. J. Star Formation at $z \sim 6$: *i*-Dropouts in the Advanced Camera for Surveys Guaranteed Time Observation Fields. *R. J. Bouwens, G. D. Illingworth, P. Rosati, C. Lidman, T. Broadhurst, M. Franx, H. C. Ford, D. Magee, N. Benítez, J. P. Blakeslee, G. R. Meurer, M. Clampin, G. F. Hartig, D. R. Ardila, F. Bartko, R. A. Brown, C. J. Burrows, E. S. Cheng, N. J. G. Cross, P. D. Feldman, D. A. Golimowski, C. Gronwall, L. Infante, R. A. Kimble, J. E. Krist, M. P. Lesser, A. R. Martel, F. Menanteau, G. K. Miley, M. Postman, M. Sirianni, W. B. Sparks, H. D. Tran, Z. I. Tsvetanov, R. L. White, & W. Zheng.* 595, 589 (2003)

See BLAKESLEE, JOHN P., et al. Advanced Camera for Surveys Photometry of the Cluster RDCS 1252.9−2927: The Color-Magnitude Relation at $z = 1.24$.

See MEURER, GERHARDT R., et al. The Discovery of Globular Clusters in the Protospiral Galaxy NGC 2915: Implications for Hierarchical Galaxy Evolution.

BOUWENS, RYCHARD. See BLAKESLEE, JOHN P., et al. Discovery of Two Distant Type Ia Supernovae in the Hubble Deep Field–North with the Advanced Camera for Surveys.

Cloning Dropouts: Implications for Galaxy Evolution at High Redshift. *Rychard Bouwens, Tom Broadhurst, & Garth Illingworth.* 593, 640 (2003)

BOUY, HERVÉ. A *Hubble Space Telescope* Wide Field Planetary Camera 2 Survey for Brown Dwarf Binaries in the α Persei and the Pleiades Open Clusters. *Eduardo L. Martín, David Barrado y Navascués, Isabelle Baraffe, Hervé Bouy, & Scott Dahm.* 594, 525 (2003)

BOWDEN, J. The Identification of Infrared Synchrotron Radiation from Cassiopeia A. *T. J. Jones, L. Rudnick, T. DeLaney, & J. Bowden.* 587, 227 (2003)

BOWER, G. C. Variability of Sagittarius A*: Flares at 1 Millimeter. *Jun-Hui Zhao, K. H. Young, R. M. Herrnstein, P. T. P. Ho, T. Tsutsumi, K. Y. Lo, W. M. Goss, & G. C. Bower.* 586, L29 (2003)

BOWER, GARY. See GEBHARDT, KARL, et al. Axisymmetric Dynamical Models of the Central Regions of Galaxies.

See PINKNEY, JASON, et al. Kinematics of 10 Early-Type Galaxies from *Hubble Space Telescope* and Ground-based Spectroscopy.

BOWER, GEOFFREY C. Interferometric Detection of Linear Polarization from Sagittarius A* at 230 GHz. *Geoffrey C. Bower, Melvyn C. H. Wright, Heino Falcke, & Donald C. Backer.* 588, 331 (2003)

A Giant Outburst at Millimeter Wavelengths in the Orion Nebula. *Geoffrey C. Bower, Richard L. Plambeck, Alberto Bolatto, Nate McCrady, James R. Graham, Imke de Pater, Michael C. Liu, & Frederick K. Baganoff.* 598, 1140 (2003)

BOWER, R. G. See BERSIER, D., et al. The Strongly Polarized Afterglow of GRB 020405.

The Transformation of Galaxies within the Large-Scale Structure around a $z = 0.41$ Cluster: Erratum (ApJ, 562, L9 [2001]). *T. Kodama, Ian Smail, F. Nakata, S. Okamura, & R. G. Bower.* 591, L169 (2003) (Orig. paper in 562, L9 (2001))

See SWINBANK, A. M., et al. Galaxies under the Cosmic Microscope: A Gemini Multiobject Spectrograph Study of the Lensed Disk Galaxy 289 in A2218.

What Shapes the Luminosity Function of Galaxies? *A. J. Benson, R. G. Bower, C. S. Frenk, C. G. Lacey, C. M. Baugh, & S. Cole.* 599, 38 (2003)

Chandra Detections of SCUBA Galaxies around High-z Radio Sources. *Ian Smail, C. A. Scharf, R. J. Ivison, J. A. Stevens, R. G. Bower, & J. S. Dunlop.* 599, 86 (2003)

BOWER, RICHARD. Extended X-Ray Emission around 4C 41.17 at $z = 3.8$. *Caleb Scharf, Ian Smail, Rob Ivison, Richard Bower, Wil van Breugel, & Michiel Reuland.* 596, 105 (2003)

BOWER, RICHARD G. On the Origin of Intracluster Entropy. *G. Mark Voit, Michael L. Balogh, Richard G. Bower, Cedric G. Lacey, & Greg L. Bryan.* 593, 272 (2003)

BOWERS, CHARLES W. Far-Ultraviolet Emission from Elliptical Galaxies at $z = 0.33$. *Thomas M. Brown, Henry C. Ferguson, Ed Smith, Charles W. Bowers, Randy A. Kimble, Alvio Renzini, & R. Michael Rich.* 584, L69 (2003)

BOWMAN, JOEL M. Radiative Relaxation and Isomeric Branching of Highly Excited HCN: The Importance of Delocalized Vibrational States. *Troy Barger, Alec M. Wodtke, & Joel M. Bowman.* 587, 841 (2003)

BOYLE, P. See AKERLOF, C. W., et al. A Search for Correlations of TeV Gamma Rays with Ultra–High-Energy Cosmic Rays.

BOYLE, P. J. See HOLDER, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.

See DE LA CALLE PÉREZ, I., et al. Search for High-Energy Gamma Rays from an X-Ray–Selected Blazar Sample.

BOYNTON, G. C. Magnetohydrodynamic Shock Heating of the Solar Corona. *J. A. Orta, M. A. Huerta, & G. C. Boynton.* 596, 646 (2003)

BOYNTON, W. See PRICE, P. A., et al. Discovery of GRB 020405 and Its Late Red Bump.

BOZEK, J. D. See AGUILAR, A., et al. Absolute Photoionization Cross Section Measurements of O II Ions from 29.7 to 46.2 eV.

BRAATZ, J. A. A Survey for H_2O Megamasers. III. Monitoring Water Vapor Masers in Active Galaxies. *J. A. Braatz, A. S. Wilson, C. Henkel, R. Gough, & M. Sinclair.* 146, 249 (2003)

BRADBURY, S. M. See HOLDER, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.

See HALL, T. A., et al. Search for TeV Emissions from Pulsars in Binary Systems.

See DE LA CALLE PÉREZ, I., et al. Search for High-Energy Gamma Rays from an X-Ray–Selected Blazar Sample.

BRADFORD, C. M. CO $J = 7 \rightarrow 6$ Observations of NGC 253: Cosmic-Ray–heated Warm Molecular Gas. *C. M. Bradford, T. Nikola, G. J. Stacey,*

A. D. Bolatto, J. M. Jackson, M. L. Savage, J. A. Davidson, & S. J. Higdon. 586, 891 (2003)

Bradley, P. A. See Mukadem, Anjum S., et al. Constraining the Evolution of ZZ Ceti.

Bradshaw, C. F. The X-Ray Spectral Changes of Scorpius X-1. *C. F. Bradshaw, B. J. Geldzahler, & E. B. Fomalont.* 592, 486 (2003)

Braga, J. See Crew, G. B., et al. *HETE-2* Localization and Observation of the Bright, X-Ray–rich Gamma-Ray Burst GRB 021211.

Bragaglia, A. Accurate Mass Ratio and Heating Effects in the Dual-Line Millisecond Binary Pulsar in NGC 6397. *F. R. Ferraro, E. Sabbi, R. Gratton, A. Possenti, N. D'Amico, A. Bragaglia, & F. Camilo.* 584, L13 (2003)

The Complex Hα Line Profile of the Bright Companion to PSR J1740−5340 in NGC 6397. *E. Sabbi, R. Gratton, F. R. Ferraro, A. Bragaglia, A. Possenti, N. D'Amico, & F. Camilo.* 589, L41 (2003)

Brainerd, Tereasa G. Mass-to-Light Ratios of 2dF Galaxies. *Tereasa G. Brainerd & Michael A. Specian.* 593, L7 (2003)

Braito, V. See Risaliti, G., et al. Revealing the Active Galactic Nucleus in the Superantennae through *L*-Band Spectroscopy.

Branch, David. Determination of Primordial Metallicity and Mixing in the Type II-P Supernova 1993W. *E. Baron, Peter E. Nugent, David Branch, Peter H. Hauschildt, M. Turatto, & E. Cappellaro.* 586, 1199 (2003)

Brandenburg, Axel. Doubly Helical Coronal Ejections from Dynamos and Their Role in Sustaining the Solar Cycle. *Eric G. Blackman & Axel Brandenburg.* 584, L99 (2003)

Is Nonhelical Hydromagnetic Turbulence Peaked at Small Scales? *Nils Erlands L. Haugen, Axel Brandenburg, & Wolfgang Dobler.* 597, L141 (2003)

Brandl, Bernhard R. Near-Infrared, Adaptive Optics Observations of the T Tauri Multiple-Star System. *Elise Furlan, William J. Forrest, Dan M. Watson, Keven I. Uchida, Bernhard R. Brandl, Luke D. Keller, & Terry L. Herter.* 596, L87 (2003)

Near-Infrared, Adaptive Optics Observations of the T Tauri Multiple-Star System: Erratum (ApJ, 596, L87 [2003]). *Elise Furlan, William J. Forrest, Dan M. Watson, Keven I. Uchida, Bernhard R. Brandl, Luke D. Keller, & Terry L. Herter.* 599, L117 (2003) (Orig. paper in 596, L87 (2003))

Brandner, W. See Feldt, M., et al. Discovery of a Candidate for the Central Star of the Ultracompact H II Region G5.89−0.39.

Brandner, Wolfgang. *Hubble Space Telescope* WFPC2 Imaging of the Disk and Jet of HV Tauri C. *Karl R. Stapelfeldt, François Ménard, Alan M. Watson, John E. Krist, Catherine Dougados, Deborah L. Padgett, & Wolfgang Brandner.* 589, 410 (2003)

Brandt, W. N. See Gabel, Jack R., et al. The Ionized Gas and Nuclear Environment in NGC 3783. II. Averaged *Hubble Space Telescope*/STIS and *Far Ultraviolet Spectroscopic Explorer* Spectra.

The Redshift Evolution of the 2–8 keV X-Ray Luminosity Function. *L. L. Cowie, A. J. Barger, M. Bautz, W. N. Brandt, & G. P. Garmire.* 584, L57 (2003)

Very High Redshift X-Ray–selected Active Galactic Nuclei in the *Chandra* Deep Field–North. *A. J. Barger, L. L. Cowie, P. Capak, D. M. Alexander, F. E. Bauer, W. N. Brandt, G. P. Garmire, & A. E. Hornschemeier.* 584, L61 (2003)

The *XMM-Newton* View of the Nucleus of NGC 4261. *R. M. Sambruna, M. Gliozzi, M. Eracleous, W. N. Brandt, & R. Mushotzky.* 586, L37 (2003)

See Muno, M. P., et al. A Deep *Chandra* Catalog of X-Ray Point Sources toward the Galactic Center.

See Baganoff, F. K., et al. *Chandra* X-Ray Spectroscopic Imaging of Sagittarius A* and the Central Parsec of the Galaxy.

XMM-Newton Reveals the Quasar Outflow in PG 1115+080. *G. Chartas, W. N. Brandt, & S. C. Gallagher.* 595, 85 (2003)

See Gabel, Jack R., et al. The Ionized Gas and Nuclear Environment in NGC 3783. III. Detection of a Decreasing Radial Velocity in an Intrinsic Ultraviolet Absorber.

X-Ray Sources with Periodic Variability in a Deep *Chandra* Image of the Galactic Center. *M. P. Muno, F. K. Baganoff, M. W. Bautz, W. N. Brandt, G. P. Garmire, & G. R. Ricker.* 599, 465 (2003)

See Netzer, Hagai, et al. The Ionized Gas and Nuclear Environment in NGC 3783. IV. Variability and Modeling of the 900 Kilosecond *Chandra* Spectrum.

Branduardi-Raymont, G. See Mason, K. O., et al. The X-Ray Spectrum of the Seyfert I Galaxy Markarian 766: Dusty Warm Absorber or Relativistic Emission Lines?

Branduardi-Raymont, Graziella. See Sako, Masao, et al. Can a Dusty Warm Absorber Model Reproduce the Soft X-Ray Spectra of MCG −6-30-15 and Markarian 766?

A Long Look at NGC 3783 with the *XMM-Newton* Reflection Grating Spectrometer. *Ehud Behar, Andrew P. Rasmussen, Alexander J. Blustin, Masao Sako, Steven M. Kahn, Jelle S. Kaastra, Graziella Branduardi-Raymont, & Katrien C. Steenbrugge.* 598, 232 (2003)

Bransford, M. A. Azimuthal and Kinematic Segregation of Neutral and Molecular Gas in Arp 118: The Yin-Yang Galaxy NGC 1144. *P. N. Appleton, V. Charmandaris, Yu Gao, Tom Jarrett, & M. A. Bransford.* 586, 112 (2003)

Branston, Detrick D. Comparison of Total Solar Irradiance with NASA/National Solar Observatory Spectromagnetograph Data in Solar Cycles 22 and 23. *Harrison P. Jones, Detrick D. Branston, Patricia B. Jones, & Miruna D. Popescu.* 589, 658 (2003)

Brassard, P. See Green, E. M., et al. Discovery of a New Class of Pulsating Stars: Gravity-Mode Pulsators among Subdwarf B Stars.

A Driving Mechanism for the Newly Discovered Long-Period Pulsating Subdwarf B Stars. *G. Fontaine, P. Brassard, S. Charpinet, E. M. Green, P. Chayer, M. Billères, & S. K. Randall.* 597, 518 (2003)

Bravo, Eduardo. Thermal X-Ray Emission from Shocked Ejecta in Type Ia Supernova Remnants: Prospects for Explosion Mechanism Identification. *Carles Badenes, Eduardo Bravo, Kazimierz J. Borkowski, & Inmaculada Domínguez.* 593, 358 (2003)

Bregman, Jesse D. Dust in Hot Gas: Far-Infrared Emission from Three Local Elliptical Galaxies. *Pasquale Temi, William G. Mathews, Fabrizio Brighenti, & Jesse D. Bregman.* 585, L121 (2003)

Bregman, Joel N. A Scattered Light Echo around SN 1993J in M81. *Ji-Feng Liu, Joel N. Bregman, & Patrick Seitzer.* 582, 919 (2003)

X-Ray Spectral Properties of Low-Mass X-Ray Binaries in Nearby Galaxies. *Jimmy A. Irwin, Alex E. Athey, & Joel N. Bregman.* 587, 356 (2003)

X-Ray Emission from a Sample of Young Supernovae. *Joel N. Bregman, John C. Houck, Roger A. Chevalier, & Morton S. Roberts.* 596, 323 (2003)

Small-Scale Structure in the Galactic Interstellar Medium: Implications for Galaxy Cluster Studies. *Joel N. Bregman, Megan C. Novicki, Jessica E. Krick, & John S. Arabadjis.* 597, 399 (2003)

Bremer, M. See Cohen, A. S., et al. The Low-Frequency Radio Counterpart of the *XMM* Large-Scale Structure Survey.

Bremer, Malcolm. Luminous Lyman Break Galaxies at $z > 5$ and the Source of Reionization. *Matthew D. Lehnert & Malcolm Bremer.* 593, 630 (2003)

Bresolin, Fabio. A New Extragalactic Distance Determination Method Using Flux-weighted Gravity of Late B and Early A Supergiants. *Rolf P. Kudritzki, Fabio Bresolin, & Robert Przybilla.* 582, L83 (2003)

Quantitative Spectral Analysis of Early B-Type Supergiants in the Sculptor Galaxy NGC 300. *Miguel Alejandro Urbaneja, Aremio Herrero, Fabio Bresolin, Rolf-Peter Kudritzki, Wolfgang Gieren, & Joachim Puls.* 584, L73 (2003)

The Composition Gradient in M101 Revisited. II. Electron Temperatures and Implications for the Nebular Abundance Scale. *Robert C. Kennicutt, Jr., Fabio Bresolin, & Donald R. Garnett.* 591, 801 (2003)

Briand, C. Detection of Photospheric Impacts from Chromospheric Impulsive Events. *P. F. Moretti, F. Berrilli, A. Sebastianelli, C. Briand, & E. Pietropaolo.* 589, L109 (2003)

Briceño, Cesar. New Low-Mass Members of the Taurus Star-forming Region. *K. L. Luhman, Cesar Briceno, John R. Stauffer, Lee Hartmann, D. Barrado y Navascues, & Nelson Caldwell.* 590, 348 (2003)

Accretion in Young Stellar/Substellar Objects. *James Muzerolle, Lynne Hillenbrand, Nuria Calvet, César Briceño, & Lee Hartmann.* 592, 266 (2003)

Brickhouse, N. S. The Structure of Stellar Coronae in Active Binary Systems. *J. Sanz-Forcada, N. S. Brickhouse, & A. K. Dupree.* 145, 147 (2003)

Toward a Self-Consistent Model of the Ionized Absorber in NGC 3783. *Y. Krongold, F. Nicastro, N. S. Brickhouse, M. Elvis, D. A. Liedahl, & S. Mathur.* 597, 832 (2003)

Brickhouse, Nancy S. Modeling the Ne IX Triplet Spectral Region of Capella with the *Chandra* and *XMM-Newton* Gratings. *Jan-Uwe Ness, Nancy S. Brickhouse, Jeremy J. Drake, & David P. Huenemoerder.* 598, 1277 (2003)

Bridge, C. R. See Chen, Hsiao-Wen, et al. The Las Campanas Infrared Survey. IV. The Photometric Redshift Survey and the Rest-Frame *R*-Band Galaxy Luminosity Function at $0.5 \leq z \leq 1.5$.

BRIDGES, T. J. New Mass Estimators for Tracer Populations. *N. W. Evans, M. I. Wilkinson, K. M. Perrett, & T. J. Bridges.* 583, 752 (2003)

Substructure in the Andromeda Galaxy Globular Cluster System. *K. M. Perrett, D. A. Stiff, D. A. Hanes, & T. J. Bridges.* 589, 790 (2003)

BRIDGES, TERRY J. See MOBASHER, BAHRAM, et al. A Photometric and Spectroscopic Study of Dwarf and Giant Galaxies in the Coma Cluster. IV. The Luminosity Function.

BRIEL, U. G. The *ROSAT* North Ecliptic Pole Survey: The Optical Identifications. *I. M. Gioia, J. P. Henry, C. R. Mullis, H. Böhringer, U. G. Briel, W. Voges, & J. P. Huchra.* 149, 29 (2003)

BRIGGS, MICHAEL S. See MITROFANOV, IGOR G., et al. Comparison of Redshift-known Gamma-Ray Bursts with the Main Groups of Bright BATSE Events.

BRIGHENTI, FABRIZIO. Dust in Hot Gas: Far-Infrared Emission from Three Local Elliptical Galaxies. *Pasquale Temi, William G. Mathews, Fabrizio Brighenti, & Jesse D. Bregman.* 585, L121 (2003)

Feedback Heating in Cluster and Galactic Cooling Flows. *Fabrizio Brighenti & William G. Mathews.* 587, 580 (2003)

Rapid Cooling of Dusty Gas in Elliptical Galaxies. *William G. Mathews & Fabrizio Brighenti.* 590, L5 (2003)

XMM-Newton and *Chandra* Observations of the Galaxy Group NGC 5044. I. Evidence for Limited Multiphase Hot Gas. *David A. Buote, Aaron D. Lewis, Fabrizio Brighenti, & William G. Mathews.* 594, 741 (2003)

XMM-Newton and *Chandra* Observations of the Galaxy Group NGC 5044. II. Metal Abundances and Supernova Fraction. *David A. Buote, Aaron D. Lewis, Fabrizio Brighenti, & William G. Mathews.* 595, 151 (2003)

Circulation Flows: Cooling Flows with Bubble Return. *William G. Mathews, Fabrizio Brighenti, David A. Buote, & Aaron D. Lewis.* 596, 159 (2003)

Stellar Orbits and the Interstellar Gas Temperature in Elliptical Galaxies. *William G. Mathews & Fabrizio Brighenti.* 599, 992 (2003)

BRINKMAN, A. C. See CRENSHAW, D. M., et al. Simultaneous Ultraviolet and X-Ray Spectroscopy of the Seyfert 1 Galaxy NGC 5548. I. Physical Conditions in the Ultraviolet Absorbers.

BRINKMAN, ALBERT C. See SAKO, MASAO, et al. Can a Dusty Warm Absorber Model Reproduce the Soft X-Ray Spectra of MCG −6-30-15 and Markarian 766?

BRINKMAN, BERT. Contrasting the Ultraviolet and X-Ray O VI Column Density Inferred for the Outflow in NGC 5548. *Nahum Arav, Jelle Kaastra, Katrien Steenbrugge, Bert Brinkman, Rick Edelson, Kirk T. Korista, & Martijn de Kool.* 590, 174 (2003)

BRINKMAN, J. Sloan Digital Sky Survey Catalog of Stars in the Draco Dwarf Spheroidal Galaxy. *Heather A. Rave, Chongshan Zhao, Heidi Jo Newberg, Brian Yanny, Donald P. Schneider, J. Brinkman, & Don Q. Lamb.* 145, 245 (2003)

BRINKMANN, J. See SZKODY, PAULA, et al. Two Rare Magnetic Cataclysmic Variables with Extreme Cyclotron Features Identified in the Sloan Digital Sky Survey.

See EISENSTEIN, DANIEL J., et al. Average Spectra of Massive Galaxies in the Sloan Digital Sky Survey.

See BLANTON, MICHAEL R., et al. The Galaxy Luminosity Function and Luminosity Density at Redshift $z = 0.1$.

VLT+UVES Spectroscopy of the Ca II Low-Ionization Broad Absorption Line Quasar SDSS J030000.56+004828.0. *Patrick B. Hall, Damien Hutsmékers, Scott F. Anderson, J. Brinkmann, Xiaohui Fan, Donald P. Schneider, & Donald G. York.* 593, 189 (2003)

See BLANTON, MICHAEL R., et al. The Broadband Optical Properties of Galaxies with Redshifts $0.02 < z < 0.22$.

See SCHMIDT, GARY D., et al. Magnetic White Dwarfs from the Sloan Digital Sky Survey: The First Data Release.

See PRADA, FRANCISCO, et al. Observing the Dark Matter Density Profile of Isolated Galaxies.

See HOPKINS, A. M., et al. Star Formation Rate Indicators in the Sloan Digital Sky Survey.

BRINKMANN, JON. See GOMEZ, PERCY L., et al. Galaxy Star Formation as a Function of Environment in the Early Data Release of the Sloan Digital Sky Survey.

See BAHCALL, NETA A., et al. The Cluster Mass Function from Early Sloan Digital Sky Survey Data: Cosmological Implications.

See HOGG, DAVID W., et al. The Overdensities of Galaxy Environments as a Function of Luminosity and Color.

See GLAZEBROOK, KARL, et al. The Sloan Digital Sky Survey: The Cosmic Spectrum and Star Formation History.

See SZALAY, ALEXANDER S., et al. Karhunen-Loève Estimation of the Power Spectrum Parameters from the Angular Distribution of Galaxies in Early Sloan Digital Sky Survey Data.

See BUDAVÁRI, TAMÁS, et al. Angular Clustering with Photometric Redshifts in the Sloan Digital Sky Survey: Bimodality in the Clustering Properties of Galaxies.

See BAHCALL, NETA A., et al. A Merged Catalog of Clusters of Galaxies from Early Sloan Digital Sky Survey Data.

See NEWBERG, HEIDI JO, et al. Sagittarius Tidal Debris 90 kiloparsecs from the Galactic Center.

BRINKMANN, JONATHAN. See HELMI, AMINA, et al. Selection of Metal-poor Giant Stars Using the Sloan Digital Sky Survey Photometric System.

Discovery of Eight New Extremely Metal-poor Galaxies in the Sloan Digital Sky Survey. *Alexei Y. Kniazev, Eva K. Grebel, Lei Hao, Michael A. Strauss, Jonathan Brinkmann, & Masataka Fukugita.* 593, L73 (2003)

BRION, E. A New X-Ray Flare from the Galactic Nucleus Detected with the *XMM-Newton* Photon Imaging Cameras. *A. Goldwurm, E. Brion, P. Goldoni, P. Ferrando, F. Daigne, A. Decourchelle, R. S. Warwick, & P. Predehl.* 584, 751 (2003)

BRISKEN, WALTER F. Pulsar PSR B0656+14, the Monogem Ring, and the Origin of the "Knee" in the Primary Cosmic-Ray Spectrum. *S. E. Thorsett, R. A. Benjamin, Walter F. Brisken, A. Golden, & W. M. Goss.* 592, L71 (2003)

The Distance and Radius of the Neutron Star PSR B0656+14. *Walter F. Brisken, S. E. Thorsett, A. Golden, & W. M. Goss.* 593, L89 (2003)

BRITTAIN, SEAN D. CO Emission from Disks around AB Aurigae and HD 141569: Implications for Disk Structure and Planet Formation Timescales. *Sean D. Brittain, Terrence W. Rettig, Theodore Simon, Craig Kulesa, Michael A. DiSanti, & Neil Dello Russo.* 588, 535 (2003)

BRITTON, MALCOLM. See BLANTON, MICHAEL R., et al. The Galaxy Luminosity Function and Luminosity Density at Redshift $z = 0.1$.

BROADHURST, T. See BOUWENS, R. J., et al. Star Formation at $z \sim 6$: i-Dropouts in the Advanced Camera for Surveys Guaranteed Time Observation Fields.

BROADHURST, T. J. See TRAN, H. D., et al. Advanced Camera for Surveys Observations of Young Star Clusters in the Interacting Galaxy UGC 10214.

See BLAKESLEE, JOHN P., et al. Advanced Camera for Surveys Photometry of the Cluster RDCS 1252.9−2927: The Color-Magnitude Relation at $z = 1.24$.

See MEURER, GERHARDT R., et al. The Discovery of Globular Clusters in the Protospiral Galaxy NGC 2915: Implications for Hierarchical Galaxy Evolution.

BROADHURST, TOM. See BLAKESLEE, JOHN P., et al. Discovery of Two Distant Type Ia Supernovae in the Hubble Deep Field–North with the Advanced Camera for Surveys.

Cloning Dropouts: Implications for Galaxy Evolution at High Redshift. *Rychard Bouwens, Tom Broadhurst, & Garth Illingworth.* 593, 640 (2003)

BROCATO, E. The Distance to the Large Magellanic Cloud Cluster NGC 1866 and the Surrounding Field. *M. Salaris, S. Percival, E. Brocato, G. Raimondo, & A. R. Walker.* 588, 801 (2003)

BRODIE, JEAN P. Evidence for an Intermediate-Age, Metal-rich Population of Globular Clusters in NGC 4365. *Søren S. Larsen, Jean P. Brodie, Michael A. Beasley, Duncan A. Forbes, Markus Kissler-Patig, Harald Kuntschner, & Thomas H. Puzia.* 585, 767 (2003)

On the Size Difference between Red and Blue Globular Clusters. *Soren S. Larsen & Jean P. Brodie.* 593, 340 (2003)

BRODWIN, M. See WEBB, T. M., et al. The Canada–United Kingdom Deep Submillimeter Survey. V. The Submillimeter Properties of Lyman Break Galaxies.

The Canada-UK Deep Submillimeter Survey. VII. Optical and Near-Infrared Identifications for the 14 Hour Field. *T. M. A. Webb, S. J. Lilly, D. L. Clements, S. Eales, M. Yun, M. Brodwin, L. Dunne, & W. K. Gear.* 597, 680 (2003)

BROGAN, C. L. The Sizes of OH (1720 MHz) Supernova Remnant Masers: MERLIN and Very Long Baseline Array Observations of IC 443. *I. M. Hoffman, W. M. Goss, C. L. Brogan, M. J. Claussen, & A. M. S. Richards.* 583, 272 (2003)

BROMAGE, B. J. I. *SOHO-Ulysses* Spring 2000 Quadrature: Coronal Diagnostic Spectrometer and SUMER Results. *S. Parenti, E. Landi, & B. J. I. Bromage.* 590, 519 (2003)

BROMM, VOLKER. Three Epochs of Star Formation in the High-Redshift Universe. *Jonathan Mackey, Volker Bromm, & Lars Hernquist.* 586, 1 (2003)

Formation of the First Supermassive Black Holes. *Volker Bromm & Abraham Loeb.* 596, 34 (2003)

The First Supernova Explosions in the Universe. *Volker Bromm, Naoki Yoshida, & Lars Hernquist.* 596, L135 (2003)

BRONFMAN, L. See MASON, B. S., et al. The Anisotropy of the Microwave Background to $l = 3500$: Deep Field Observatons with the Cosmic Background Imager.

See PEARSON, T. J., et al. The Anisotropy of the Microwave Background to $l = 3500$: Mosaic Observations with the Cosmic Background Imager.

See SIEVERS, J. L., et al. Cosmological Parameters from Cosmic Background Imager Observations and Comparisons with BOOMERANG, DASI, and MAXIMA.

BRONFMAN, LEONARDO. A Parsec-Scale Flow Associated with the IRAS 16547−4247 Radio Jet. *Kate J. Brooks, Guido Garay, Diego Mardones, & Leonardo Bronfman.* 594, L131 (2003)

BRONOWSKA, A. See GREEN, E. M., et al. Discovery of a New Class of Pulsating Stars: Gravity-Mode Pulsators among Subdwarf B Stars.

BROOK, CHRIS B. Galactic Halo Stars in Phase Space: A Hint of Satellite Accretion? *Chris B. Brook, Daisuke Kawata, Brad K. Gibson, & Chris Flynn.* 585, L125 (2003)

BROOKS, KATE J. A Triple Radio Continuum Source Associated with IRAS 16547−4247: A Collimated Stellar Wind Emanating from a Massive Protostar. *Guido Garay, Kate J. Brooks, Diego Mardones, & Ray P. Norris.* 587, 739 (2003)

A Parsec-Scale Flow Associated with the IRAS 16547−4247 Radio Jet. *Kate J. Brooks, Guido Garay, Diego Mardones, & Leonardo Bronfman.* 594, L131 (2003)

BROOS, P. S. See MUNO, M. P., et al. A Deep *Chandra* Catalog of X-Ray Point Sources toward the Galactic Center.

BROOS, PATRICK S. 10 MK Gas in M17 and the Rosette Nebula: X-Ray Flows in Galactic H II Regions. *Leisa K. Townsley, Eric D. Feigelson, Thierry Montmerle, Patrick S. Broos, You-Hua Chu, & Gordon P. Garmire.* 593, 874 (2003)

BROSIUS, JEFFREY W. Chromospheric Evaporation and Warm Rain during a Solar Flare Observed in High Time Resolution with the Coronal Diagnostic Spectrometer aboard the *Solar and Heliospheric Observatory*. *Jeffrey W. Brosius.* 586, 1417 (2003)

Electron Temperature and Speed Measurements in the Low Solar Corona: Results From the 2001 June Eclipse. *Nelson L. Reginald, O. C. St. Cyr, Joseph M. Davila, & Jeffrey W. Brosius.* 599, 596 (2003)

BROTHERTON, MICHAEL S. The Black Hole–Bulge Relationship in Quasars. *Gregory A. Shields, Karl Gebhardt, Sarah Salviander, Beverley J. Wills, Bingrong Xie, Michael S. Brotherton, Juntao Yuan, & Matthias Dietrich.* 583, 124 (2003)

BROWN, ALEXANDER. *Chandra*, *Extreme Ultraviolet Explorer*, and Very Large Array Observations of the Active Binary System σ^2 Coronae Borealis. *Rachel A. Osten, Thomas R. Ayres, Alexander Brown, Jeffrey L. Linsky, & Anita Krishnamurthi.* 582, 1073 (2003)

Space Telescope Imaging Spectrograph Survey of Far-Ultraviolet Coronal Forbidden Lines in Late-Type Stars. *Thomas R. Ayres, Alexander Brown, Graham M. Harper, Rachel A. Osten, Jeffrey L. Linsky, Brian E. Wood, & Seth Redfield.* 583, 963 (2003)

Buried Alive in the Coronal Graveyard. *Thomas R. Ayres, Alexander Brown, & Graham M. Harper.* 598, 610 (2003)

BROWN, EDWARD F. On Variations in the Peak Luminosity of Type Ia Supernovae. *F. X. Timmes, Edward F. Brown, & J. W. Truran.* 590, L83 (2003)

BROWN, J. C. Rotation Measures of Compact Sources in the Canadian Galactic Plane Survey. *J. C. Brown, A. R. Taylor, & B. J. Jackel.* 145, 213 (2003)

On Large-Scale Magnetic Field Reversals in the Outer Galaxy. *J. C. Brown, A. R. Taylor, R. Wielebinski, & P. Mueller.* 592, L29 (2003)

BROWN, JOHN C. The Determination and Use of Mean Electron Flux Spectra in Solar Flares. *John C. Brown, A. Gordon Emslie, & Eduard P. Kontar.* 595, L115 (2003)

An Explanation for Non–Power-Law Behavior in the Hard X-Ray Spectrum of the 2002 July 23 Solar Flare. *Eduard P. Kontar, John C. Brown, A. Gordon Emslie, Richard A. Schwartz, David M. Smith, & R. Calum Alexander.* 595, L123 (2003)

Regularized Electron Flux Spectra in the 2002 July 23 Solar Flare. *Michele Piana, Anna Maria Massone, Eduard P. Kontar, A. Gordon Emslie, John C. Brown, & Richard A. Schwartz.* 595, L127 (2003)

BROWN, M. J. I. See MATHESON, T., et al. Photometry and Spectroscopy of GRB 03029 and Its Associated Supernova 2003dh: The First Two Months.

BROWN, M. R. Test Particle Acceleration in Three-dimensional Magnetohydrodynamic Turbulence. *P. Dmitruk, W. H. Matthaeus, N. Seenu, & M. R. Brown.* 597, L81 (2003)

BROWN, MICHAEL E. Binarity in Brown Dwarfs: T Dwarf Binaries Discovered with the *Hubble Space Telescope* Wide Field Planetary Camera 2. *Adam J. Burgasser, J. Davy Kirkpatrick, I. Neill Reid, Michael E. Brown, Cherie L. Miskey, & John E. Gizis.* 586, 512 (2003)

BROWN, MICHAEL J. I. Red Galaxy Clustering in the NOAO Deep Wide-Field Survey. *Michael J. I. Brown, Arjun Dey, Buell T. Jannuzi, Tod R. Lauer, Glenn P. Tiede, & Valerie J. Mikles.* 597, 225 (2003)

BROWN, R. See TRAN, H. D., et al. Advanced Camera for Surveys Observations of Young Star Clusters in the Interacting Galaxy UGC 10214.

BROWN, R. A. See BOUWENS, R. J., et al. Star Formation at $z \sim 6$: i-Dropouts in the Advanced Camera for Surveys Guaranteed Time Observation Fields.

See MEURER, GERHARDT R., et al. The Discovery of Globular Clusters in the Protospiral Galaxy NGC 2915: Implications for Hierarchical Galaxy Evolution.

BROWN, T. M. The EXPLORE Project. I. A Deep Search for Transiting Extrasolar Planets. *G. Mallén-Ornelas, S. Seager, H. K. C. Yee, D. Minniti, Michael D. Gladders, G. M. Mallén-Fullerton, & T. M. Brown.* 582, 1123 (2003)

See GALAMA, T. J., et al. *Hubble Space Telescope* and Ground-based Optical and Ultraviolet Observations of GRB 010222.

BROWN, THOMAS M. Far-Ultraviolet Emission from Elliptical Galaxies at $z = 0.33$. *Thomas M. Brown, Henry C. Ferguson, Ed Smith, Charles W. Bowers, Randy A. Kimble, Alvio Renzini, & R. Michael Rich.* 584, L69 (2003)

Evidence of a Significant Intermediate-Age Population in the M31 Halo from Main-Sequence Photometry. *Thomas M. Brown, Henry C. Ferguson, Ed Smith, Randy A. Kimble, Allen V. Sweigart, Alvio Renzini, R. Michael Rich, & Don A. VandenBerg.* 592, L17 (2003)

BROWN, TIMOTHY M. Expected Detection and False Alarm Rates for Transiting Jovian Planets. *Timothy M. Brown.* 593, L125 (2003)

BROWN, W. R. See STANEK, K. Z., et al. Spectroscopic Discovery of the Supernova 2003dh Associated with GRB 030329.

See MATHESON, T., et al. Photometry and Spectroscopy of GRB 03029 and Its Associated Supernova 2003dh: The First Two Months.

BROWNE, I. W. A. See KOOPMANS, L. V. E., et al. Extrinsic Radio Variability of JVAS/CLASS Gravitational Lenses.

BROWNING, MATTHEW K. Inferring Physical Conditions in Interstellar Clouds of H_2. *Matthew K. Browning, Jason Tumlinson, & J. Michael Shull.* 582, 810 (2003)

BRÜGGEN, M. Simulations of Buoyant Bubbles in Galaxy Clusters. *M. Brüggen.* 592, 839 (2003)

Equilibrium Models of Galaxy Clusters with Cooling, Heating, and Conduction. *M. Brüggen.* 593, 700 (2003)

BRÜNKEN, S. A Concise New Look at the l-Type Spectrum of $H^{12}C^{14}N$. *S. Thorwirth, H. S. P. Müller, F. Lewen, S. Brünken, V. Ahrens, & G. Winnewisser.* 585, L163 (2003)

Detection of HCN Direct l-Type Transitions Probing Hot Molecular Gas in the Proto–Planetary Nebula CRL 618. *S. Thorwirth, F. Wyrowski, P. Schilke, K. M. Menten, S. Brünken, H. S. P. Müller, & G. Winnewisser.* 586, 338 (2003)

BRUHWEILER, F. Revisited Abundance Diagnostics in Quasars: Fe II/Mg II Ratios. *E. Verner, F. Bruhweiler, D. Verner, S. Johansson, & T. Gull.* 592, L59 (2003)

BRUMMELL, NICHOLAS H. On the Formation of Magnetic Structures by the Combined Action of Velocity Shear and Magnetic Boynancy. *Kelly S. Cline, Nicholas H. Brummell, & Fausto Cattaneo.* 588, 630 (2003)

Dynamo Action Driven by Shear and Magnetic Buoyancy. *Kelly S. Cline, Nicholas H. Brummell, & Fausto Cattaneo.* 599, 1449 (2003)

BRUNEAU, J. Measurements and Calculations of Photoionization Cross Sections of Multiply Charged Ions in Ground and Metastable States along the Isonuclear Series of Oxygen: O^{2+} to O^{4+}. *J.-P. Champeaux, J.-M. Bizau, D. Cubaynes, C. Blancard, S. Nahar, D. Hitz, J. Bruneau, & F. J. Wuilleumier.* 148, 583 (2003)

BRUNETTI, GIANFRANCO. See SIEMIGINOWSKA, ANETA, et al. *Chandra* Discovery of an X-Ray Jet and Extended X-Ray Structure in $z = 0.63$ Quasar B2 0738+313.

BRUNNER, R. Discovery of a Clustered Quasar Pair at $z \approx 5$: Biased Peaks in Early Structure Formation. *S. G. Djorgovski, D. Stern, A. A. Mahabal, & R. Brunner.* 596, 67 (2003)

BRUNT, CHRISTOPHER M. An Outer Galaxy Molecular Cloud Catalog. *Christopher M. Brunt, C. R. Kerton, & Caroline Pomerleau.* 144, 47 (2003)

Large-Scale Turbulence in Molecular Clouds. *Christopher M. Brunt.* 583, 280 (2003)

The Universality of Turbulence in the Molecular Interstellar Medium and Its Exploitation as a Distance Estimator. *Christopher M. Brunt.* 584, 293 (2003)

Intrinsic, Observed, and Retrieved Properties of Interstellar Turbulence. *Christopher M. Brunt, Mark H. Heyer, Enrique Vázquez-Semadeni, & Bárbara Pichardo.* 595, 824 (2003)

BRUNTHALER, A. The Flaring H_2O Megamaser and Conpact Radio Source in Markarian 348. *A. B. Peck, C. Henkel, J. S. Ulvestad, A. Brunthaler, H. Falcke, M. Elitzur, K. M. Menten, & J. F. Gallimore.* 590, 149 (2003)

BRUSA, GUIDO. See CLOSE, LAIRD M., et al. Mid-Infrared Imaging of the Post–Asymptotic Giant Branch Star AC Herculis with the Multiple Mirror Telescope Adaptive Optics System.

See CLOSE, LAIRD M., et al. High-Resolution Images of Orbital Motion in the Trapezium Cluster: First Scientific Results from the Multiple Mirror Telescope Deformable Secondary Mirror Adaptive Optics System.

BRUZUAL A., GUSTAVO. ADEMIS: A Library of Evolutionary Models for Emission-Line Galaxies. I. Dust-free Models. *Gladis Margis C., Luc Binette, & Gustavo Bruzual A.* 149, 313 (2003)

BRYAN, GREG L. Numerical Simulations of High-Redshift Star Formation in Dwarf Galaxies. *Konstantinos Tassis, Tom Abel, Greg L. Bryan, & Michael L. Norman.* 587, 13 (2003)

Eccentricity Evolution in Simulated Galaxy Clusters. *Stephan N. Floor, Adrian L. Melott, Christopher J. Miller, & Greg L. Bryan.* 591, 741 (2003)

On the Origin of Intracluster Entropy. *G. Mark Voit, Michael L. Balogh, Richard G. Bower, Cedric G. Lacey, & Greg L. Bryan.* 593, 272 (2003)

BUCKLEY, J. See AKERLOF, C. W., et al. A Search for Correlations of TeV Gamma Rays with Ultra–High-Energy Cosmic Rays.

BUCKLEY, J. H. See HOLDER, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.

See HALL, T. A., et al. Search for TeV Emissions from Pulsars in Binary Systems.

See DE LA CALLE PÉREZ, I., et al. Search for High-Energy Gamma Rays from an X-Ray–Selected Blazar Sample.

BUDAVÁRI, TAMÁS. The Evolution of the Global Stellar Mass Density at $0 < z < 3$. *Mark Dickinson, Casey Papovich, Henry C. Ferguson, & Tamás Budavári.* 587, 25 (2003)

Angular Clustering with Photometric Redshifts in the Sloan Digital Sky Survey: Bimodality in the Clustering Properties of Galaxies. *Tamás Budavári, Andrew J. Connolly, Alexander S. Szalay, István Szapudi, István Csabai, Ryan Scranton, Neta A. Bahcall, Jon Brinkmann, Daniel J. Eisenstein, Joshua A. Frieman, Masataka Fukugita, James E. Gunn, David Johnston, Stephen Kent, Jon N. Loveday, Robert H. Lupton, Max Tegmark, Aniruddha R. Thakar, Brian Yanny, Donald G. York, & Idit Zehavi.* 595, 59 (2003)

BUDIL, KIMBERLY S. The Interaction of Supernova Remnants with Interstellar Clouds: Experiments on the Nova Laser. *Richard I. Klein, Kimberly S. Budil, Theordore S. Perry, & David R. Bach.* 583, 245 (2003)

BÜHLER, F. Measurement of ^{3}He/^{4}He in the Local Interstellar Medium: The Collisa Experiment on *Mir*. *E. Salerno, F. Bühler, P. Bochsler, H. Busemann, M. L. Bassi, G. N. Zastenker, Yu. N. Agafonov, & N. A. Eismont.* 585, 840 (2003)

BULIK, TOMASZ. Constraints on the Binary Evolution from Chirp Mass Measurements. *Tomasz Bulik & Krzysztof Belczy'nski.* 589, L37 (2003)

BULLOCK, JAMES S. Faint Active Galactic Nuclei and the Ionizing Background. *Michael Schirber & James S. Bullock.* 584, 110 (2003)

The Epoch of Reionization in Models with Reduced Small-Scale Power. *Rachel S. Somerville, James S. Bullock, & Mario Livio.* 593, 616 (2003)

Halo Substructure and the Power Spectrum. *Andrew R. Zentner & James S. Bullock.* 598, 49 (2003)

BUNKER, A. See CHEN, HSIAO-WEN, et al. The Las Campanas Infrared Survey. IV. The Photometric Redshift Survey and the Rest-Frame *R*-Band Galaxy Luminosity Function at $0.5 \leq z \leq 1.5$.

See SWINBANK, A. M., et al. Galaxies under the Cosmic Microscope: A Gemini Multiobject Spectrograph Study of the Lensed Disk Galaxy 289 in A2218.

BUNKER, ANDREW J. Gemini-South + FLAMINGOS Demonstration Science: Near-IR Spectroscopy of the $z = 5.77$ Quasar SDSS J083643.85+005453.3. *Daniel Stern, Pat Hall, L. Felipe Barrientos, Andrew J. Bunker, Richard Elston, M. J. Ledlow, S. Nicholas Raines, & Jon Willis.* 596, L39 (2003)

BUONANNO, ROBERTO. Blue Straggler Stars: A Direct Comparison of Star Counts and Population Ratios in Six Galactic Globular Clusters. *Francesco R. Ferraro, Alison Sills, Robert T. Rood, Barbara Paltrinieri, & Roberto Buonanno.* 588, 464 (2003)

BUOTE, DAVID A. X-Ray Source Population in the Elliptical Galaxy NGC 720 with *Chandra*. *Tesla E. Jeltema, Claude R. Canizares, David A. Buote, & Gordon P. Garmire.* 585, 756 (2003)

Chandra Observations of A2029: The Dark Matter Profile Down to below $0.01r_{vir}$ in an Unusually Relaxed Cluster. *Aaron D. Lewis, David A. Buote, & John T. Stocke.* 586, 135 (2003)

XMM-Newton and *Chandra* Observations of the Galaxy Group NGC 5044. I. Evidence for Limited Multiphase Hot Gas. *David A. Buote, Aaron D. Lewis, Fabrizio Brighenti, & William G. Mathews.* 594, 741 (2003)

XMM-Newton and *Chandra* Observations of the Galaxy Group NGC 5044. II. Metal Abundances and Supernova Fraction. *David A. Buote, Aaron D. Lewis, Fabrizio Brighenti, & William G. Mathews.* 595, 151 (2003)

BURAS, ROBERT. Electron Neutrino Pair Annihilation: A New Source for Muon and Tau Neutrinos in Supernovae. *Robert Buras, Hans-Thomas Janka, Mathias Th. Keil, Georg G. Raffelt, & Markus Rampp.* 587, 320 (2003)

BURBIDGE, E. MARGARET. QSOs Associated with Messier 82. *E. Margaret Burbidge, Geoffrey Burbidge, Halton C. Arp, & Stefano Zibetti.* 591, 690 (2003)

BURBIDGE, G. NGC 6212, 3C 354, and Other Quasi-stellar Objects Associated with Them. *G. Burbidge.* 586, L119 (2003)

BURBIDGE, G. R. The Sources of Gamma-Ray Bursts and Their Connections with QSOs and Active Galaxies. *G. R. Burbidge.* 585, 112 (2003)

BURBIDGE, GEOFFREY. QSOs Associated with Messier 82. *E. Margaret Burbidge, Geoffrey Burbidge, Halton C. Arp, & Stefano Zibetti.* 591, 690 (2003)

BURBRIDGE, G. Inhomogeneities in the Microwave Background Radiation Interpreted within the Framework of the Quasi–Steady State Cosmology. *J. V. Narlikar, R. G. Vishwakarma, Amir Hajian, Tarun Souradeep, G. Burbridge, & F. Hoyle.* 585, 1 (2003)

BURDERI, L. Coupling between Periodic and Aperiodic Variability in SAX J1808.4−3658. *M. T. Menna, L. Burderi, L. Stella, N. Robba, & M. van der Klis.* 589, 503 (2003)

A Search for Pulsars in Quiescent Soft X-Ray Transients. I. *M. Burgay, L. Burderi, A. Possenti, N. D'Amico, R. N. Manchester, A. G. Lyne, F. Camilo, & S. Campana.* 589, 902 (2003)

BeppoSAX Serendipitous Discovery of the X-Ray Pulsar SAX J1802.7−2017. *G. Augello, R. Iaria, N. R. Robba, T. Di Salvo, L. Burderi, G. Lavagetto, & L. Stella.* 596, L63 (2003)

BUREAU, M. On the Spiral Structure of NGC 2915 and Dark Matter. *F. S. Masset & M. Bureau.* 586, 152 (2003)

BURGASSER, ADAM J. Binarity in Brown Dwarfs: T Dwarf Binaries Discovered with the *Hubble Space Telescope* Wide Field Planetary Camera 2. *Adam J. Burgasser, J. Davy Kirkpatrick, I. Neill Reid, Michael E. Brown, Cherie L. Miskey, & John E. Gizis.* 586, 512 (2003)

The First Substellar Subdwarf? Discovery of a Metal-poor L Dwarf with Halo Kinematics. *Adam J. Burgasser, J. Davy Kirkpatrick, Adam Burrows, James Liebert, I. Neill Reid, John E. Gizis, Mark R. McGovern, L. Prato, & Ian S. McLean.* 592, 1186 (2003)

The Spectra of T Dwarfs. II. Red Optical Data. *Adam J. Burgasser, J. Davy Kirkpatrick, James Liebert, & Adam Burrows.* 594, 510 (2003)

The NIRSPEC Brown Dwarf Spectroscopic Survey. I. Low-Resolution Near-Infrared Spectra. *Ian S. McLean, Mark R. McGovern, Adam J. Burgasser, J. Davy Kirkpatrick, L. Prato, & Sungsoo S. Kim.* 596, 561 (2003)

BURGAY, M. A Search for Pulsars in Quiescent Soft X-Ray Transients. I. *M. Burgay, L. Burderi, A. Possenti, N. D'Amico, R. N. Manchester, A. G. Lyne, F. Camilo, & S. Campana.* 589, 902 (2003)

Burger, R. A. Toward an ab Initio Theory of the Solar Modulation of Cosmic Rays. *S. Parhi, J. W. Bieber, W. H. Matthaeus, & R. A. Burger.* 585, 502 (2003)

Burgess, C. Large Mixing Angle Oscillations as a Probe of the Deep Solar Interior. *C. Burgess, N. S. Dzhalilov, M. Maltoni, T. I. Rashba, V. B. Semikoz, M. A. Tórtola, & J. W. F. Valle.* 588, L65 (2003)

Burgess, T. See Ahrens, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

Burke, D. See Markevitch, M., et al. *Chandra* Temperature Map of A754 and Constraints on Thermal Conduction.

Burkepile, J. T. Constraints on Coronal Mass Ejection Dynamics from Simultaneous Radio and White-Light Observations. *M. J. Reiner, A. Vourlidas, O. C. St. Cyr, J. T. Burkepile, R. A. Howard, M. L. Kaiser, N. P. Prestage, & J.-L. Bougeret.* 590, 533 (2003)

Burkert, A. Role of Clusters of Galaxies in the Evolution of the Metal Budget in the Universe. *A. Finoguenov, A. Burkert, & H. Böhringer.* 594, 136 (2003)

The Importance of Spheroidal and Mixed Mergers for Early-Type Galaxy Formation. *S. Khochfar & A. Burkert.* 597, L117 (2003)

Burkert, Andreas. The Failure of Self-Interacting Dark Matter to Solve the Overabundance of Dark Satellites and the Soft Core Question. *Elena D'Onghia & Andreas Burkert.* 586, 12 (2003)

Constraints of the Clumpiness of Dark Matter Halos through Heating of the Disk Galaxies. *Eliani Ardi, Toshio Tsuchiya, & Andreas Burkert.* 596, 204 (2003)

Statistical Properties of Collisionless Equal- and Unequal-Mass Merger Remnants of Disk Galaxies. *Thorsten Naab & Andreas Burkert.* 597, 893 (2003)

Burlaga, L. F. *Voyager 1* and *2* Observations of Magnetic Fields and Associated Cosmic-Ray Variations from 2000 through 2001: 60–87 AU. *L. F. Burlaga, N. F. Ness, F. B. McDonald, J. D. Richardson, & C. Wang.* 582, 540 (2003)

Large-Scale Magnetic Field Fluctuations and Development of the 1999–2000 Global Merged Interaction Region: 1–60 AU. *L. F. Burlaga, C. Wang, J. D. Richardson, & N. F. Ness.* 585, 1158 (2003)

Solar Wind Speed and Temperature outside 10 AU and the Termination Shock. *Y. C. Whang, L. F. Burlaga, Y.-M. Wang, & N. R. Sheeley, Jr.* 589, 635 (2003)

Evolution of Magnetic Fields in Corotating Interaction Regions from 1 to 95 AU: Order to Chaos. *L. F. Burlaga, C. Wang, J. D. Richardson, & N. F. Ness.* 590, 554 (2003)

Burleigh, M. R. An Archive of *IUE* Low-Dispersion Spectra of the White Dwarf Stars. *J. B. Holberg, M. A. Barstow, & M. R. Burleigh.* 147, 145 (2003)

Burles, Scott. See Sneden, Christopher, et al. The Extremely Metal-poor, Neutron Capture–rich Star CS 22892–052: A Comprehensive Abundance Analysis.

Prospects for the Determination of H_0 through Observation of Multiply Imaged Supernovae in Galaxy Cluster Fields. *Adam S. Bolton & Scott Burles.* 592, 17 (2003)

Burns, M. S. See Knop, R. A., et al. New Constraints on Ω_M, Ω_Λ, and w from an Independent Set of 11 High-Redshift Supernovae Observed with the *Hubble Space Telescope*.

Burrows, A. On the Indirect Detection of Sodium in the Atmosphere of the Planetary Companion to HD 209458. *J. J. Formey, D. Sudarsky, I. Hubeny, C. S. Cooper, W. B. Hubbard, A. Burrows, & J. I. Lunine.* 589, 615 (2003)

Burrows, Adam. Calculations of the Far-Wing Line Profiles of Sodium and Potassium in the Atmospheres of Substellar-Mass Objects. *Adam Burrows & Maxim Volobuyev.* 583, 985 (2003)

Modeling the Formation of Clouds in Brown Dwarf Atmospheres. *Curtis S. Cooper, David Sudarsky, John A. Milsom, Jonathan I. Lunine, & Adam Burrows.* 586, 1320 (2003)

Theoretical Spectra and Atmospheres of Extrasolar Giant Planets. *David Sudarsky, Adam Burrows, & Ivan Hubeny.* 588, 1121 (2003)

Shock Breakout in Core-Collapse Supernovae and Its Neutrino Signature. *Todd A. Thompson, Adam Burrows, & Philip A. Pinto.* 592, 434 (2003)

See Burgasser, Adam J., et al. The First Substellar Subdwarf? Discovery of a Metal-poor L Dwarf with Halo Kinematics.

The Spectra of T Dwarfs. II. Red Optical Data. *Adam J. Burgasser, J. Davy Kirkpatrick, James Liebert, & Adam Burrows.* 594, 510 (2003)

A Theory for the Radius of the Transiting Giant Planet HD 209458b. *Adam Burrows, D. Sudarsky, & W. B. Hubbard.* 594, 545 (2003)

Line Intensities and Molecular Opacities of the FeH $F\ ^4\Delta_i$–$X\ ^4\Delta_i$ Transition. *M. Dulick, C. W. Bauschlicher, Jr., Adam Burrows, C. M. Sharp, R. S. Ram, & Peter Bernath.* 594, 651 (2003)

A Possible Bifurcation in Atmospheres of Strongly Irradiated Stars and Planets. *Ivan Hubeny, Adam Burrows, & David Sudarsky.* 594, 1011 (2003)

Modeling the Formation of Clouds in Brown Dwarf Atmospheres: Erratum (ApJ, 586, 1320 [2003]). *Curtis S. Cooper, David Sudarsky, John A. Milsom, Jonathan I. Lunine, & Adam Burrows.* 595, 573 (2003) (Orig. paper in 586, 1320 (2003))

Beyond the T Dwarfs: Theoretical Spectra, Colors, and Detectability of the Coolest Brown Dwarfs. *Adam Burrows, David Sudarsky, & Jonathan I. Lunine.* 596, 587 (2003)

Burrows, C. See Tran, H. D., et al. Advanced Camera for Surveys Observations of Young Star Clusters in the Interacting Galaxy UGC 10214.

Burrows, C. J. See Bouwens, R. J., et al. Star Formation at $z \sim 6$: i-Dropouts in the Advanced Camera for Surveys Guaranteed Time Observation Fields.

See Meurer, Gerhardt R., et al. The Discovery of Globular Clusters in the Protospiral Galaxy NGC 2915: Implications for Hierarchical Galaxy Evolution.

Burrows, David N. The Radial Structure of Supernova Remnant N103B. *Karen T. Lewis, David N. Burrows, John P. Hughes, Patrick O. Slane, Gordon P. Garmire, & John A. Nousek.* 582, 770 (2003)

X-Ray Emission from Multiphase Shock in the Large Magellanic Cloud Supernova Remnant N49. *Sangwook Park, David N. Burrows, Gordon P. Garmire, John A. Nousek, John P. Hughes, & Rosa Murphy Williams.* 586, 210 (2003)

An X-Ray Pulsar in the Oxygen-rich Supernova Remnant G292.0+1.8. *John P. Hughes, Patrick O. Slane, Sangwook Park, Peter W. A. Roming, & David N. Burrows.* 591, L139 (2003)

Detection of Magnesium-rich Ejecta in the Middle-aged Supernova Remnant N49B. *Sangwook Park, John P. Hughes, Patrick O. Slane, David N. Burrows, Jessica S. Warren, Gordon P. Garmire, & John A. Nousek.* 592, L41 (2003)

0103−72.6: A New Oxygen-rich Supernova Remnant in the Small Magellanic Cloud. *Sangwook Park, John P. Hughes, David N. Burrows, Patrick O. Slane, John A. Nousek, & Gordon P. Garmire.* 598, L95 (2003)

Burstein, David. An X-Ray Atlas of Groups of Galaxies. *John S. Mulchaey, David S. Davis, Richard F. Mushotzky, & David Burstein.* 145, 39 (2003)

The Multiphase Intracluster Medium in Galaxy Groups Probed by the Lyα Forest. *Hu Zhan, Li-Zhi Fang, & David Burstein.* 592, L1 (2003)

Nitrogen Overabundance: Globular Cluster and Halo Formation. *Yong Li & David Burstein.* 598, L103 (2003)

Burud, I. See Hjorth, J., et al. Very High Column Density and Small Reddening toward GRB 020124 at $z = 3.20$.

See Greiner, J., et al. GRB 011121: A Collimated Outflow into Wind-blown Surroundings.

Burwitz, V. Discovery of a Binary Active Galaxy Nucleus in the Ultraluminous Infrared Galaxy NGC 6240 Using *CHANDRA*. *S. Komossa, V. Burwitz, G. Hasinger, P. Predehl, J. S. Kaastra, & Y. Ikebe.* 582, L15 (2003)

See Ness, J.-U., et al. A *Chandra* Low Energy Transmission Grating Spectrometer Observation of V4743 Sagittarii: A Supersoft X-Ray Source and a Violently Variable Light Curve.

Busarello, G. Age, Metallicity, and Star Formation History of Cluster Galaxies at $z \sim 0.3$. *P. Merluzzi, F. La Barbera, M. Massarotti, G. Busarello, & M. Capaccioli.* 589, 147 (2003)

On the Invariant Distribution of Galaxies in the r_e–$\langle\mu\rangle_e$ Plane out to $z = 0.64$. *F. La Barbera, G. Busarello, P. Merluzzi, M. Massarotti, & M. Capaccioli.* 595, 127 (2003)

Busemann, H. Measurement of ^{3}He/^{4}He in the Local Interstellar Medium: The Collisa Experiment on *Mir*. *E. Salerno, F. Bühler, P. Bochsler, H. Busemann, M. L. Bassi, G. N. Zastenker, Yu. N. Agafonov, & N. A. Eismont.* 585, 840 (2003)

Busha, Michael T. Future Evolution of Cosmic Structure in an Accelerating Universe. *Michael T. Busha, Fred C. Adams, Risa H. Wechsler, & August E. Evrard.* 596, 713 (2003)

Busso, M. Cool Bottom Processes on the Thermally Pulsing Asymptotic Giant Branch and the Isotopic Composition of Circumstellar Dust Grains. *Kenneth M. Nollett, M. Busso, & G. J. Wasserburg.* 582, 1036 (2003)

Bussons, J. See Atkins, R., et al. Observation of TeV Gamma Rays from the Crab Nebula with Milagro Using a New Background Rejection Technique.

Buta, Ronald J. The Extinction and Distance of Maffei 1. *Robin L. Fingerhut, Marshall L. McCall, Michael De Robertis, Robin L. Kingsburgh, Michael Komljenovic, Henry Lee, & Ronald J. Buta.* 587, 672 (2003)

Butler, N. See Crew, G. B., et al. *HETE-2* Localization and Observation of the Bright, X-Ray–rich Gamma-Ray Burst GRB 021211.

Butler, Nathanial R. The X-Ray Afterglows of GRB 020813 and GRB 021004 with *Chandra* HETGS: Possible Evidence for a Supernova prior to GRB 020813. *Nathanial R. Butler, Herman L. Marshall, George R. Ricker, Roland K. Vanderspek, Peter G. Ford, Geoffrey B. Crew, Donald Q. Lamb, & J. Garrett Jernigan.* 597, 1010 (2003)

Butler, R. Paul. Seven New Keck Planets Orbiting G and K Dwarfs. *R. Paul Butler, Geoffrey W. Marcy, Steven S. Vogt, Debra A. Fischer, Gregory W. Henry, Gregory Laughlin, & Jason T. Wright.* 582, 455 (2003)

See Fischer, Debra A., et al. A Planetary Companion to HD 40979 and Additional Planets Orbiting HD 12661 and HD 38529.

Four New Planets Orbiting Metal-Enriched Stars. *C. G. Tinney, R. Paul Butler, Geoffrey W. Marcy, Hugh R. A. Jones, Alan J. Penny, Chris McCarthy, Brad D. Carter, & Jade Bond.* 587, 423 (2003)

A Sub-Saturn Mass Planet Orbiting HD 3651. *Debra A. Fischer, R. Paul Butler, Geoffrey W. Marcy, Steven S. Vogt, & Gregory W. Henry.* 590, 1081 (2003)

A Planet in a Circular Orbit with a 6 Year Period. *Brad D. Carter, R. Paul Butler, C. G. Tinney, Hugh R. A. Jones, Geoffrey W. Marcy, Chris McCarthy, Debra A. Fischer, & Alan J. Penny.* 593, L43 (2003)

Butner, H. M. CO (3–2) Observations of Early-Type Galaxies with the Heinrich Hertz Telescope. *B. Vila-Vilaró, J. Cepa, & H. M. Butner.* 594, 232 (2003)

Butt, Y. See Markevitch, M., et al. *Chandra* Spectra of the Soft X-Ray Diffuse Background.

See Markevitch, M., et al. *Chandra* Temperature Map of A754 and Constraints on Thermal Conduction.

See Ness, J.-U., et al. A *Chandra* Low Energy Transmission Grating Spectrometer Observation of V4743 Sagittarii: A Supersoft X-Ray Source and a Violently Variable Light Curve.

Butt, Yousaf. See Drake, Jeremy J., et al. The Extraordinary X-Ray Light Curve of the Classical Nova V1494 Aquilae (1999 No. 2) in Outburst: The Discovery of Pulsations and a "Burst."

Butt, Yousaf M. Jet-induced Nucleosynthesis in Misaligned Microquasars. *Yousaf M. Butt, Thomas J. Maccarone, & Nikos Prantzos.* 587, 748 (2003)

Chandra/Very Large Array Follow-up of TeV J2032+4131, the Only Unidentified TeV Gamma-Ray Source. *Yousaf M. Butt, Paula Benaglia, Jorge A. Combi, Michael Corcoran, Thomas M. Dame, Jeremy Drake, Marina Kaufman Bernadó, Peter Milne, Francesco Miniati, Martin Pohl, Olaf Reimer, Gustavo E. Romero, & Michael Rupen.* 597, 494 (2003)

Buzasi, Derek L. Oscillations in Arcturus from *WIRE* Photometry. *Alon Retter, Timothy R. Bedding, Derek L. Buzasi, Hans Kjeldsen, & László L. Kiss.* 591, L151 (2003)

Oscillations in Arcturus from *WIRE* Photometry: Erratum (ApJ, 591, L151 [2003]). *Alon Retter, Timothy R. Bedding, Derek L. Buzasi, Hans Kjeldsen, & László L. Kiss.* 596, L125 (2003) (Orig. paper in 591, L151 (2003))

Byun, Do-Young. The Distance to the Supernova Remnant CTB 87 and the Radial Velocity of the Perseus Arm toward $l = 75°$. Derived from H I and CO Observations. *Roland Kothes, Wolfgang Reich, Tyler Foster, & Do-Young Byun.* 588, 852 (2003)

Cabrit, S. Warm Molecular Hydrogen and Ionized Neon in the HH 2 Outflow. *B. LeFloch, J. Cernicharo, S. Cabrit, A. Noriega-Crespo, A. Moro-Martín, & D. Cesarsky.* 590, L41 (2003)

Caceres, A. See Dursi, L. J., et al. The Response of Model and Astrophysical Thermonuclear Flames to Curvature and Stretch.

Cadavid, A. C. Photospheric Sources and Brightening of the Internetwork Chromosphere. *A. C. Cadavid, J. K. Lawrence, T. E. Berger, & A. Ruzmaikin.* 586, 1409 (2003)

Influence of Photospheric Magnetic Fields and Dynamics on Chromospheric K-Line Emission. *J. K. Lawrence, A. C. Cadavid, D. Miccolis, T. E. Berger, & A. Ruzmaikin.* 597, 1178 (2003)

Cagnoni, I. 1WGA J1216.9+3743: *Chandra* Finds an Extremely Steep Ultraluminous X-Ray Source. *I. Cagnoni, R. Turolla, A. Treaves, J.-S. Huang, D. W. Kim, M. Elvis, & A. Celotti.* 582, 654 (2003)

Cai, Mike J. Relativistic Singular Isothermal Toroids. *Mike J. Cai & Frank H. Shu.* 583, 391 (2003)

Cairns, R. A. Cyclotron Maser Radiation from Astrophysical Shocks. *R. Bingham, B. J. Kellett, R. A. Cairns, J. Tonge, & J. T. Mendonça.* 595, 279 (2003)

Cairós, L. M. Discovery of a Double Ring in the Dwarf Galaxy Markarian 409. *A. Gil de Paz, B. F. Madore, K. Noeske, L. M. Cairós, P. Papaderos, & S. A. Silich.* 596, L179 (2003)

Cairós, Luz M. Deep Near-Infrared Mapping of Young and Old Stars in Blue Compact Dwarf Galaxies. *Luz M. Cairós, Nicola Caon, Polychronis Papaderos, Kai Noeske, Jose M. Vílchez, Begoña García Lorenzo, & Casiana Muñoz-Tuñón.* 593, 312 (2003)

Calder, A. C. See Dursi, L. J., et al. The Response of Model and Astrophysical Thermonuclear Flames to Curvature and Stretch.

Caldwell, J. A. R. See Fields, Dale L., et al. High-Precision Limb-Darkening Measurement of a K3 Giant Using Microlensing.

Caldwell, N. See Stanek, K. Z., et al. Spectroscopic Discovery of the Supernova 2003dh Associated with GRB 030329.

See Matheson, T., et al. Photometry and Spectroscopy of GRB 03029 and Its Associated Supernova 2003dh: The First Two Months.

Caldwell, Nelson. New Low-Mass Members of the Taurus Star-forming Region. *K. L. Luhman, Cesar Briceno, John R. Stauffer, Lee Hartmann, D. Barrado y Navascues, & Nelson Caldwell.* 590, 348 (2003)

Caldwell, Robert R. Early Quintessence in Light of the *Wilkinson Microwave Anisotropy Probe*. *Robert R. Caldwell, Michael Doran, Christian M. Müller, Gregor Schäfer, & Christof Wetterich.* 591, L75 (2003)

Calitz, J. J. See Bersier, D., et al. The Unusual Optical Afterglow of the Gamma-Ray Burst GRB 021004: Color Changes and Short-Timescale Variability.

Calkins, M. L. See Matheson, T., et al. The Spectroscopic Variability of GRB 021004.

See Stanek, K. Z., et al. Spectroscopic Discovery of the Supernova 2003dh Associated with GRB 030329.

See Matheson, T., et al. Photometry and Spectroscopy of GRB 03029 and Its Associated Supernova 2003dh: The First Two Months.

Callanan, P. J. The Dynamics of M15: Observations of the Velocity Dispersion Profile and Fokker-Planck Models: Addendum (ApJ, 481, 267 [1997]). *J. D. Dull, H. N. Cohn, P. M. Lugger, B. W. Murphy, P. O. Seitzer, P. J. Callanan, R. G. M. Rutten, & P. A. Charles.* 585, 598 (2003) (Orig. paper in 481, 267 (1997))

Callerame, K. See Green, E. M., et al. Discovery of a New Class of Pulsating Stars: Gravity-Mode Pulsators among Subdwarf B Stars.

Cally, Paul S. Clamshell and Tipping Instabilities in a Two-dimensional Magnetohydrodynamic Tachocline. *Paul S. Cally, Mausumi Dikpati, & Peter A. Gilman.* 582, 1190 (2003)

Calura, Francesco. The Cosmic Evolution of the Galaxy Luminosity Density. *Francesco Calura & Francesca Matteucci.* 596, 734 (2003)

Calvani, M. Radio-loud Active Galactic Nuclei in the Context of the Eigenvector 1 Parameter Space. *J. W. Sulentic, S. Zamfir, P. Marziani, R. Bachev, M. Calvani, & D. Dultzin-Hacyan.* 597, L17 (2003)

Calvet, Nuria. A Comprehensive Study of the L1551 IRS 5 Binary System. *Mayra Osorio, Paolo D'Alessio, James Muzerolle, Nuria Calvet, & Lee Hartmann.* 586, 1148 (2003)

The Spatial Distribution of Fluorescent H_2 Emission near T Tauri. *José Saucedo, Nuria Calvet, Lee Hartmann, & John Raymond.* 591, 275 (2003)

The Effects of UV Continuum and Lyα Radiation on the Chemical Equilibrium of T Tauri Disks. *Edwin Bergin, Nuria Calvet, Paola D'Alessio, & Gregory J. Herczeg.* 591, L159 (2003)

Accretion in Young Stellar/Substellar Objects. *James Muzerolle, Lynne Hillenbrand, Nuria Calvet, César Briceño, & Lee Hartmann.* 592, 266 (2003)

Unveiling the Inner Disk Structure of T Tauri Stars. *James Muzerolle, Nuria Calvet, Lee Hartmann, & Paola D'Alessio.* 597, L149 (2003)

Calvini, M. An Optical Spectroscopic Atlas of Low-Redshift Active Galactic Nuclei. *P. Marziani, J. W. Sulentic, R. Zamanov, M. Calvini, D. Dultzin-Hacyan, R. Bachev, & T. Zwitter.* 145, 199 (2003)

CALZETTI, DANIELA. The Stellar Content of Henize 2-10 from Space Telescope Imaging Spectrograph Ultraviolet Spectroscopy. *Rupali Chandar, Claus Leitherer, Christy Tremonti, & Daniela Calzetti.* 586, 939 (2003)

CAMERON, A. G. W. Some Nucleosynthesis Effects Associated with r-Process Jets. *A. G. W. Cameron.* 587, 327 (2003)

CAMILO, F. Accurate Mass Ratio and Heating Effects in the Dual-Line Millisecond Binary Pulsar in NGC 6397. *F. R. Ferraro, E. Sabbi, R. Gratton, A. Possenti, N. D'Amico, A. Bragaglia, & F. Camilo.* 584, L13 (2003)

The Complex Hα Line Profile of the Bright Companion to PSR J1740−5340 in NGC 6397. *E. Sabbi, R. Gratton, F. R. Ferraro, A. Bragaglia, A. Possenti, N. D'Amico, & F. Camilo.* 589, L41 (2003)

A Search for Pulsars in Quiescent Soft X-Ray Transients. I. *M. Burgay, L. Burderi, A. Possenti, N. D'Amico, R. N. Manchester, A. G. Lyne, F. Camilo, & S. Campana.* 589, 902 (2003)

See MCLAUGHLIN, M. A., et al. PSR J1847−0130: A Radio Pulsar with Magnetar Spin Characteristics.

Three Binary Millisecond Pulsars in NGC 6266. *A. Possenti, N. D'Amico, R. N. Manchester, F. Camilo, A. G. Lyne, J. Sarkissian, & A. Corongiu.* 599, 475 (2003)

CAMPANA, S. The Resolved Fraction of the Cosmic X-Ray Background. *A. Moretti, S. Campana, D. Lazzati, & G. Tagliaferri.* 588, 696 (2003)

A Search for Pulsars in Quiescent Soft X-Ray Transients. I. *M. Burgay, L. Burderi, A. Possenti, N. D'Amico, R. N. Manchester, A. G. Lyne, F. Camilo, & S. Campana.* 589, 902 (2003)

See ISRAEL, G. L., et al. The Infrared Counterpart to the Anomalous X-Ray Pulsar 1RXS J170849−400910.

XMM-Newton Observation of the 5.25 Millisecond Transient Millisecond Pulsar XTE J1807−294 in Outburst. *S. Campana, M. Ravasio, G. L. Israel, V. Mangano, & T. Belloni.* 594, L39 (2003)

The Evolution of the High-Energy Tail in the Quiescent Spectrum of the Soft X-Ray Transient Aquila X-1. *S. Campana & L. Stella.* 597, 474 (2003)

See ISRAEL, G. L., et al. Unveiling the Nature of the 321 Second Modulation in RX J0806.3+1527: Near-Simultaneous *Chandra* and Very Large Telescope Observations.

CAMPANA, SERGIO. Evidence of a Cyclotron Feature in the Spectrum of the Anomalous X-Ray Pulsar 1RXS J170849−400910. *Nanda Rea, Gian Luca Israel, Luigi Stella, Tim Oosterbroek, Sandro Mereghetti, Lorella Angelini, Sergio Campana, & Stefano Covino.* 586, L65 (2003)

CAMPBELL, BRUCE. A Planetary Companion to γ Cephei A. *Artie P. Hatzes, William D. Cochran, Michael Endl, Barbara McArthur, Diane B. Paulson, Gordon A. H. Walker, Bruce Campbell, & Stephenson Yang.* 599, 1383 (2003)

CAMPION, S. D. Radio Emission Associated with Ultraluminous X-Ray Sources in the Galaxy Merger NGC 3256. *S. G. Neff, James S. Ulvestad, & S. D. Campion.* 599, 1043 (2003)

CANALIZO, GABRIELA. Adaptive Optics Imaging and Spectroscopy of Cygnus A. I. Evidence for a Minor Merger. *Gabriela Canalizo, Claire Max, David Whysong, Robert Antonucci, & Scott E. Dahm.* 597, 823 (2003)

CANDIA, PABLO. See TONRY, JOHN L., et al. Cosmological Results from High-z Supernovae.

CANE, H. V. Near-Relativistic Solar Electrons and Type III Radio Bursts. *H. V. Cane.* 598, 1403 (2003)

CANFIELD, RICHARD C. What Is the Role of the Kink Instability in Solar Coronal Eruptions? *Robert J. Leamon, Richard C. Canfield, Zachary Blehm, & Alexei A. Pevtsov.* 596, L255 (2003)

Detection of a Taylor-like Plasma Relaxation Process in the Sun. *Dibyendu Nandy, Michael Hahn, Richard C. Canfield, & Dana W. Longcope.* 597, L73 (2003)

Preflare Phenomena in Eruptive Flares. *Angela C. Des Jardins & Richard C. Canfield.* 598, 678 (2003)

CANIZARES, C. *Chandra* Observations of Variable Embedded X-Ray Sources in Orion. I. Resolving the Orion Trapezium: Erratum (ApJ, 549, 441 [2001]). *N. S. Schulz, C. Canizares, D. Huenemoerder, J. H. Kastner, S. C. Taylor, & E. J. Bergstrom.* 586, 1441 (2003) (Orig. paper in 549, 441 (2001))

X-Ray Modeling of Very Young Early-Type Stars in the Orion Trapezium: Signatures of Magnetically Confined Plasmas and Evolutionary Implications. *N. S. Schulz, C. Canizares, D. Huenemoerder, & K. Tibbets.* 595, 365 (2003)

CANIZARES, CLAUDE R. X-Ray Source Population in the Elliptical Galaxy NGC 720 with *Chandra*. *Tesla E. Jeltema, Claude R. Canizares, David A. Buote, & Gordon P. Garmire.* 585, 756 (2003)

Chandra Detection of Local O II Heα Absorption along the Sight Line toward 3C 273. *Taotao Fang, Kenneth R. Sembach, & Claude R. Canizares.* 586, L49 (2003)

The Coronae of AR Lacertae. *David P. Huenemoerder, Claude R. Canizares, Jeremy J. Drake, & Jorge Sanz-Forcada.* 595, 1131 (2003)

CANNIZZO, JOHN K. Ozone Depletion from Nearby Supernovae. *Neil Gehrels, Claude M. Laird, Charles H. Jackman, John K. Cannizzo, Barbara J. Mattson, & Wan Chen.* 585, 1169 (2003)

CANTALUPO, C. See GOLDSTEIN, J. H., et al. Estimates of Cosmological Parameters Using the Cosmic Microwave Background Angular Power Spectrum of ACBAR.

CANTO, J. Very Large Array Observations of Proper Motions in YLW 15. *S. Curiel, J. M. Girart, L. F. Rodríguez, & J. Canto.* 582, L109 (2003)

See TORRELLES, J. M., et al. Evidence for Evolution of the Outflow Collimation in Very Young Stellar Objects.

CANTÓ, JORGE. Very Large Array Observations of Proper Motions in L1551 IRS 5. *Luis F. Rodríguez, Salvador Curiel, Jorge Cantó, Laurent Loinard, Alejandro C. Raga, & Jose M. Torrelles.* 583, 330 (2003)

See TRINIDAD, MIGUEL A., et al. Observations of Water Masers and Radio Continuum Emission in AFGL 2591.

CAO, W. D. Weak Infrared Molecular Lines Reveal Rapid Outflow in Cool Magnetic Sunspot Penumbral Fibrils. *M. J. Penn, W. D. Cao, S. R. Walton, G. A. Chapman, & W. Livingston.* 590, L119 (2003)

CAO, XINWU. Jet Formation in BL Lacertae Objects with Different Accretion Models. *Xinwu Cao.* 599, 147 (2003)

CAO, Y. The Impact of Ionizing Stars on the Diffuse Interstellar Medium: A Swept-Up Shell and Ionized Halo around the W4 Chimney/Superbubble. *S. Terebey, M. Fich, R. Taylor, Y. Cao, & T. Hancock.* 590, 906 (2003)

CAON, NICOLA. Deep Near-Infrared Mapping of Young and Old Stars in Blue Compact Dwarf Galaxies. *Luz M. Cairós, Nicola Caon, Polychronis Papaderos, Kai Noeske, Jose M. Vílchez, Begoña García Lorenzo, & Casiana Muñoz-Tuñón.* 593, 312 (2003)

CAPACCIOLI, M. Polar Ring Galaxies and the Tully-Fisher Relation: Implications for the Dark Halo Shape. *E. Iodice, M. Arnaboldi, F. Bournaud, F. Combes, L. S. Sparke, W. van Driel, & M. Capaccioli.* 585, 730 (2003)

Age, Metallicity, and Star Formation History of Cluster Galaxies at $z \sim 0.3$. *P. Merluzzi, F. La Barbera, M. Massarotti, G. Busarello, & M. Capaccioli.* 589, 147 (2003)

On the Invariant Distribution of Galaxies in the r_e-$\langle\mu\rangle_e$ Plane out to $z = 0.64$. *F. La Barbera, G. Busarello, P. Merluzzi, M. Massarotti, & M. Capaccioli.* 595, 127 (2003)

CAPACCIOLI, MASSIMO. See NAPOLITANO, NICOLA R., et al. Intracluster Stellar Population Properties from N-Body Cosmological Simulations. I. Constraints at $z = 0$.

CAPAK, P. Very High Redshift X-Ray–selected Active Galactic Nuclei in the *Chandra* Deep Field–North. *A. J. Barger, L. L. Cowie, P. Capak, D. M. Alexander, F. E. Bauer, W. N. Brandt, G. P. Garmire, & A. E. Hornschemeier.* 584, L61 (2003)

See CHAPMAN, S. C., et al. The Properties of Microjansky Radio Sources in the Hubble Deep Field–North, SSA 13, and SSA 22 Fields.

CAPETTI, A. See MARCONI, A., et al. Is There Really a Black Hole at the Center of NGC 4041? Constraints from Gas Kinematics.

CAPETTI, ALESSANDRO. What Do the *Hubble Space Telescope* and *Chandra* Tell Us about the Jet and the Nuclear Region of the Radio Galaxy 3C 270? *Marco Chiaberge, Roberto Gilli, F. Duccio Macchetto, William B. Sparks, & Alessandro Capetti.* 582, 645 (2003)

The Nuclear Spectral Energy Distribution of NGC 6251: A BL Lacertae Object in the Center of an FR I Radio Galaxy. *Marco Chiaberge, Roberto Gilli, Alessandro Capetti, & F. Duccio Macchetto.* 597, 166 (2003)

CAPPELLARO, E. Determination of Primordial Metallicity and Mixing in the Type II-P Supernova 1993W. *E. Baron, Peter E. Nugent, David Branch, Peter H. Hauschildt, M. Turatto, & E. Cappellaro.* 586, 1199 (2003)

See VALENTINI, G., et al. Optical and Near-Infrared Photometry of the Type Ia Supernova 2000E in NGC 6951.

CAPUTO, F. RR Lyrae Stars in Galactic Globular Clusters. II. A Theoretical Approach to Variables in M3. *M. Marconi, F. Caputo, M. Di Criscienzo, & M. Castellani.* 596, 299 (2003)

CARANGELO, N. Black Hole Masses and the Fundamental Plane of BL Lacertae Objects. *R. Falomo, J. K. Kotilainen, N. Carangelo, & A. Treves.* 595, 624 (2003)

CARATTI O GARATTI, A. See VALENTINI, G., et al. Optical and Near-Infrared Photometry of the Type Ia Supernova 2000E in NGC 6951.

CARAVEO, P. A. Search for the Optical Counterpart of the Vela Pulsar X-Ray Nebula. *R. P. Mignani, A. De Luca, O. Kargaltsev, G. G. Pavlov, S. Zaggia, P. A. Caraveo, & W. Becker.* 594, 419 (2003)

CARBALLO, R. Decline of the Space Density of Quasars between $z = 2$ and $z = 4$. *M. Vigotti, R. Carballo, C. R. Benn, G. De Zotti, R. Fanti, J. I. Gonzalez Serrano, K.-H. Mack, & J. Holt.* 591, 43 (2003)

CARDELLI, JASON A. Further Evidence for Chemical Fractionation from Ultraviolet Observations of Carbon Monoxide. *S. R. Federman, David L. Lambert, Yaron Sheffer, Jason A. Cardelli, B.-G. Andersson, Ewine F. van Dishoeck, & J. Zsargó.* 591, 986 (2003)

CARDENA, I. DOMINGUEZ. Quiet-Sun Magnetic Fields at High Spatial Resolution. *I. Dominguez Cardena, F. Kneer, & J. Sanchez Almeida.* 582, L55 (2003)

CARDIEL, N. A Multiwavelength Approach to the Star Formation Rate Estimation in Galaxies at Intermediate Redshifts. *N. Cardiel, D. Elbaz, R. P. Schiavon, C. N. A. Willmer, D. C. Koo, A. C. Phillips, & J. Gallego.* 584, 76 (2003)

Differences in Carbon and Nitrogen Abundances between Field and Cluster Early-Type Galaxies. *P. Sánchez-Blázquez, J. Gorgas, N. Cardiel, J. Cenarro, & J. J. González.* 590, L91 (2003)

See KLOSE, S., et al. The Very Faint *K*-Band Afterglow of GRB 020819 and the Dust Extinction Hypothesis of the Dark Bursts.

CARDIEL, NICOLÁS. K_s Number Counts in the Groth and Coppi Fields. *David Cristóbal-Hornillos, Marc Balcells, Mercedes Prieto, Rafael Guzmán, Jesús Gallego, Nicolás Cardiel, Ángel Serrano, & Roser Pelló.* 595, 71 (2003)

CARDONI, P. See CRILL, B. P., et al. BOOMERANG: A Balloon-Borne Millimeter-Wave Telescope and Total Power Receiver for Mapping Anisotropy in the Cosmic Microwave Background.

CAREY, S. J. Interactions between a Bright Young Stellar Object and the *Micourse Space Experiment* Infrared-Dark Cloud G79.3+0.3: An Early Stage of Triggered Star Formation? *R. O. Redman, P. A. Feldman, F. Wyrowski, S. Côté, S. J. Carey, & M. P. Egan.* 586, 1127 (2003)

CAREY, SEAN J. The G11.11−0.12 Infrared-dark Cloud: Anomalous Dust and a Nonmagnetic Isothermal Model. *Doug Johnstone, Jason D. Fiege, R. O. Redman, P. A. Feldman, & Sean J. Carey.* 588, L37 (2003)

CARILLI, C. L. Variability of Submillijansky Radio Sources. *C. L. Carilli, R. J. Ivison, & D. A. Frail.* 590, 192 (2003)

CARILLI, CHRISTOPHER L. Very Long Baseline Array Continuum and H I Absorption Observations of the Ultraluminous Infrared Galaxy IRAS 17208−0014. *Emmanuel Momjian, Jonathan D. Romney, Christopher L. Carilli, Thomas H. Troland, & Gregory B. Taylor.* 587, 160 (2003)

Sensitive VLBI Continuum and H I Absorption Observations of NGC 7474: First Scientific Observations with the Combined Array VLBA, VLA, and Arecibo. *Emmanuel Momjian, Jonathan D. Romney, Christopher L. Carilli, & Thomas H. Troland.* 597, 809 (2003)

CARINI, M. T. See BÖTTCHER, M., et al. Coordinated Multiwavelength Observations of BL Lacertae in 2000.

CARIUS, S. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

CARLBERG, R. G. See GARNAVICH, P. M., et al. Discovery of the Low-Redshift Optical Afterglow of GRB 011121 and Its Progenitor Supernova SN 2001ke.

See CHEN, HSIAO-WEN, et al. The Las Campanas Infrared Survey. IV. The Photometric Redshift Survey and the Rest-Frame *R*-Band Galaxy Luminosity Function at $0.5 \leq z \leq 1.5$.

CARLSSON, M. Nonequilibrium CO Chemistry in the Solar Atmosphere. *A. Asensio Ramos, J. Trujillo Bueno, M. Carlsson, & J. Cernicharo.* 588, L61 (2003)

See BOGDAN, T. J., et al. Waves in the Magnetized Solar Atmosphere. II. Waves from Localized Sources in Magnetic Flux Concentrations.

CARLSSON, MATS. On the Origin of the Basal Emission from Stellar Atmospheres: Analysis of Solar C II Lines. *Philip G. Judge, Mats Carlsson, & Robert F. Stein.* 597, 1158 (2003)

CARLSTROM, J. E. See MASON, B. S., et al. The Anisotropy of the Microwave Background to $l = 3500$: Deep Field Observatons with the Cosmic Background Imager.

See PEARSON, T. J., et al. The Anisotropy of the Microwave Background to $l = 3500$: Mosaic Observations with the Cosmic Background Imager.

CARLSTROM, JOHN E. See LAROQUE, SAMUEL J., et al. Sunyaev-Zeldovich Effect Imaging of MACS Galaxy Clusters at $z > 0.5$.

CARNEY, BRUCE W. Blue Horizontal-Branch Stars in Old, Metal-rich Stellar Systems. *Ruth C. Peterson, Bruce W. Carney, Ben Dorman, Elizabeth M. Green, Wayne Landsman, James Liebert, Robert W. O'Connell, & Robert T. Rood.* 588, 299 (2003)

Chemical Substructure in the Milky Way Halo: A New Population of Old Stars. *Inese I. Ivans, Christopher Sneden, C. Renée James, George W. Preston, Jon P. Fulbright, Peter A. Höflich, Bruce W. Carney, & J. Craig Wheeler.* 592, 906 (2003)

CAROLLO, C. MARCELLA. Space Telescope Imaging Spectrograph Spectroscopy of the Emission-Line Gas in the Nuclei of Nearby FR-I Galaxies. *Jacob Noel-Storr, Stefi A. Baum, Gijs Verdoes Kleijn, Roeland P. van der Marel, Christoper P. O'Dea, Tim de Zeeuw, & C. Marcella Carollo.* 148, 419 (2003)

The Metallicities of Star-forming Galaxies at Intermediate Redshifts $0.47 < z < 0.92$. *Simon J. Lilly, C. Marcella Carollo, & Alan N. Stockon.* 597, 730 (2003)

CAROLLO, M. See MARCONI, A., et al. Is There Really a Black Hole at the Center of NGC 4041? Constraints from Gas Kinematics.

CARPENTER, J. M. Rotational Periods of Very Young Brown Dwarfs and Very Low-Mass Stars in Chamaeleon I. *V. Joergens, M. Fernández, J. M. Carpenter, & R. Neuhäuser.* 594, 971 (2003)

CARPENTER, JOHN M. Distribution of Circumstellar Disk Masses in the Young Cluster NGC 2024. *J. A. Eisner & John M. Carpenter.* 598, 1341 (2003)

CARQUILLAT, J. M. See PRIEUR, J. L., et al. Speckle Observations of Composite Spectrum Stars. II. Differential Photometry of the Binary Components.

CARR, B. J. See KERINS, E., et al. Theory of Pixel Lensing toward M31. II. The Velocity Anisotropy and Flattening of the MACHO Distribution.

CARR, JOHN S. Gas in the Terrestrial Planet Region of Disks: CO Fundamental Emission from T Tauri Stars. *Joan Najita, John S. Carr, & Robert D. Mathieu.* 589, 931 (2003)

CARR, P. The Proper Motion, Age, and Initial Spin Period of PSR J0538+2817 in S147. *M. Kramer, A. G. Lyne, G. Hobbs, O. Löhmer, P. Carr, C. Jordan, & A. Wolszczan.* 593, L31 (2003)

CARRANZA, GUSTAVO. Circumnulear Structures in the Interacting Seyfert Galaxy of NGC 1241: Kinematics and Optical/Infrared Morphology. *Rubén J. Díaz, Horacio Dottori, Nelson Vera-Villamizar, & Gustavo Carranza.* 597, 860 (2003)

CARRASCO, L. Capturing a Star Formation Burst in Galaxies Infalling onto the Cluster A1367. *G. Gavazzi, L. Cortese, A. Boselli, J. Iglesias-Paramo, J. M. Vílchez, & L. Carrasco.* 597, 210 (2003)

CARRETTI, E. Polarization Observations in a Low Synchrotron Emission Field at 1.4 GHz. *G. Bernardi, E. Carretti, S. Cortiglioni, R. J. Sault, M. J. Kesteven, & S. Poppi.* 594, L5 (2003)

CARRIERE, J. Low-Mass Neutron Stars and the Equation of State of Dense Matter. *J. Carriere, C. J. Horowitz, & J. Piekarewicz.* 593, 463 (2003)

CARSON, M. J. See HALL, T. A., et al. Search for TeV Emissions from Pulsars in Binary Systems.

CARTER, BRAD D. Four New Planets Orbiting Metal-Enriched Stars. *C. G. Tinney, R. Paul Butler, Geoffrey W. Marcy, Hugh R. A. Jones, Alan J. Penny, Chris McCarthy, Brad D. Carter, & Jade Bond.* 587, 423 (2003)

A Planet in a Circular Orbit with a 6 Year Period. *Brad D. Carter, R. Paul Butler, C. G. Tinney, Hugh R. A. Jones, Geoffrey W. Marcy, Chris McCarthy, Debra A. Fischer, & Alan J. Penny.* 593, L43 (2003)

CARTER, DAVE. See MOBASHER, BAHRAM, et al. A Photometric and Spectroscopic Study of Dwarf and Giant Galaxies in the Coma Cluster. IV. The Luminosity Function.

CARTER-LEWIS, D. A. See HOLDER, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.

See HALL, T. A., et al. Search for TeV Emissions from Pulsars in Binary Systems.

See AKERLOF, C. W., et al. A Search for Correlations of TeV Gamma Rays with Ultra–High-Energy Cosmic Rays.

See DE LA CALLE PÉREZ, I., et al. Search for High-Energy Gamma Rays from an X-Ray–Selected Blazar Sample.

CARTLEDGE, STEFAN I. B. The Homogeneity of Interstellar Krypton in the Galactic Disk. *Stefan I. B. Cartledge, David M. Meyer, & J. T. Lauroesch.* 597, 408 (2003)

CARTWRIGHT, J. K. See MASON, B. S., et al. The Anisotropy of the Microwave Background to $l = 3500$: Deep Field Observatons with the Cosmic Background Imager.

See PEARSON, T. J., et al. The Anisotropy of the Microwave Background to $l = 3500$: Mosaic Observations with the Cosmic Background Imager.

See Sievers, J. L., et al. Cosmological Parameters from Cosmic Background Imager Observations and Comparisons with BOOMERANG, DASI, and MAXIMA.

Casares, J. Evidence for Optical Flares in Quiescent Soft X-Ray Transients. *C. Zurita, J. Casares, & T. Shahbaz.* 582, 369 (2003)

The Optical Light Curves of XTE J2123−058. III. The Mass of the Binary Components and the Structure of the Quiescent Accretion Disk. *T. Shahbaz, C. Zurita, J. Casares, G. Dubus, P. A. Charles, R. Mark Wagner, & E. Ryan.* 585, 443 (2003)

Bowen Flourescence from the Companion Star in X1822−371. *J. Casares, D. Steeghs, R. I. Hynes, P. A. Charles, & K. O'Brien.* 590, 1041 (2003)

Casassus, S. See Mason, B. S., et al. The Anisotropy of the Microwave Background to $l = 3500$: Deep Field Observatons with the Cosmic Background Imager.

See Pearson, T. J., et al. The Anisotropy of the Microwave Background to $l = 3500$: Mosaic Observations with the Cosmic Background Imager.

Casertano, Stefano. Cosmic Gravitational Shear from the *Hubble Space Telescope* Medium Deep Survey. *Stefano Casertano, Kavan U. Ratnatunga, & Richard E. Griffiths.* 598, L71 (2003)

Casini, R. Improved Estimate of the Magnetic Field in a Prominence. *A. Lopez-Ariste & R. Casini.* 582, L51 (2003)

Magnetic Maps of Prominences from Full Stokes Analysis of the He I D3 Line. *R. Casini, A. López Ariste, S. Tomczyk, & B. W. Lites.* 598, L67 (2003)

Cassé, Michel. On the Baryometric Status of ^{3}He. *Elisabeth Vangioni-Flam, Keith A. Olive, Brian D. Fields, & Michel Cassé.* 585, 611 (2003)

Cassen, Patrick M. The Thermal Regulation of Gravitational Instabilities in Protoplanetary Disks. *Brian K. Pickett, Annie C. Mejía, Richard H. Durisen, Patrick M. Cassen, Donald K. Berry, & Robert P. Link.* 590, 1060 (2003)

Cassinelli, J. P. Magnetic Fields in Massive Stars. II. The Buoyant Rise of Magnetic Flux Tubes through the Radiative Interior. *K. B. MacGregor & J. P. Cassinelli.* 586, 480 (2003)

Constraints from *Infrared Space Observatory* Data on the Velocity Law and Clumpiness of WR 136. *R. Ignace, M. F. Quigley, & J. P. Cassinelli.* 596, 538 (2003)

Cassinelli, Joseph P. High-Resolution *Chandra* Spectroscopy of τ Scorpii: A Narrow-Line X-Ray Spectrum from a Hot Star. *David H. Cohen, Geneviève E. de Messières, Joseph J. MacFarlane, Nathan A. Miller, Joseph P. Cassinelli, Stanley P. Owocki, & Duane A. Liedahl.* 586, 495 (2003)

Cassisi, Santi. First Full Evolutionary Computation of the Helium Flash-induced Mixing in Population II Stars. *Santi Cassisi, Helmut Schlattl, Maurizio Salaris, & Achim Weiss.* 582, L43 (2003)

The Initial Helium Content of Galactic Globular Cluster Stars from the *R*-Parameter: Comparison with the Cosmic Microwave Background Constraint. *Santi Cassisi, Maurizio Salaris, & Alan W. Irwin.* 588, 862 (2003)

Castander, F. J. See Matheson, T., et al. The Spectroscopic Variability of GRB 021004.

Castander, Francisco J. See Gomez, Percy L., et al. Galaxy Star Formation as a Function of Environment in the Early Data Release of the Sloan Digital Sky Survey.

Detection of the Integrated Sachs-Wolfe and Sunyaev-Zel'dovich Effects from the Cosmic Microwave Background–Galaxy Correlation. *Pablo Fosalba, Enrique Gaztañaga, & Francisco J. Castander.* 597, L89 (2003)

Castellani, M. RR Lyrae Stars in Galactic Globular Clusters. II. A Theoretical Approach to Variables in M3. *M. Marconi, F. Caputo, M. Di Criscienzo, & M. Castellani.* 596, 299 (2003)

Castermans, T. See Ahrens, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

Castets, A. CO Depletion and Deuterium Fractionation in Prestellar Cores. *A. Bacmann, B. Lefloch, C. Ceccarelli, J. Steinacker, A. Castets, & L. Loinard.* 585, L55 (2003)

The Hot Core around the Low-Mass Protostar IRAS 16293−2422: Scoundrels Rule! *S. Cazaux, A. G. G. M. Tielens, C. Ceccarelli, A. Castets, V. Wakelam, E. Caux, B. Parise, & D. Teyssier.* 593, L51 (2003)

Castro, S. Keck Spectroscopy and *Hubble Space Telescope* Imaging of GRB 000926: Probing a Host Galaxy at $z = 2.038$. *S. Castro, T. J. Galama, F. A. Harrison, J. A. Holtzman, J. S. Bloom, S. G. Djorgovski, & S. R. Kulkarni.* 586, 128 (2003)

Castro, Sandra. The Age-Metallicity Relation of the Universe in Neutral Gas: The First 100 Damped Lyα Systems. *Jason X. Prochaska, Eric Gawiser, Arthur M. Wolfe, Sandra Castro, & S. G. Djorgovski.* 595, L9 (2003)

New Damped Lyα Metallicities from ESI Spectroscopy of Five Palomar Sky Survey Quasars. *Jason X. Prochaska, Sandra Castro, & S. G. Djorgovski.* 148, 317 (2003)

Castro Ceron, J. M. See Klose, S., et al. The Very Faint *K*-Band Afterglow of GRB 020819 and the Dust Extinction Hypothesis of the Dark Bursts.

See Hjorth, J., et al. Very High Column Density and Small Reddening toward GRB 020124 at $z = 3.20$.

See Greiner, J., et al. GRB 011121: A Collimated Outflow into Wind-blown Surroundings.

Castro-Tirado, A. See Mereghetti, S., et al. *Integral* and *XMM-Newton* Observations of the Weak Gamma-Ray Burst GRB 030227.

Castro-Tirado, A. J. See Klose, S., et al. The Very Faint *K*-Band Afterglow of GRB 020819 and the Dust Extinction Hypothesis of the Dark Bursts.

See Hjorth, J., et al. Very High Column Density and Small Reddening toward GRB 020124 at $z = 3.20$.

See Greiner, J., et al. GRB 011121: A Collimated Outflow into Wind-blown Surroundings.

Catalano, S. See Böttcher, M., et al. Coordinated Multiwavelength Observations of BL Lacertae in 2000.

Catanese, M. See Hall, T. A., et al. Search for TeV Emissions from Pulsars in Binary Systems.

See Akerlof, C. W., et al. A Search for Correlations of TeV Gamma Rays with Ultra–High-Energy Cosmic Rays.

Cattaneo, F. Polarization of Photospheric Lines from Turbulent Dynamo Simulations. *J. Sánchez Almeida, T. Emonet, & F. Cattaneo.* 585, 536 (2003)

Cattaneo, Fausto. On the Formation of Magnetic Structures by the Combined Action of Velocity Shear and Magnetic Boynancy. *Kelly S. Cline, Nicholas H. Brummell, & Fausto Cattaneo.* 588, 630 (2003)

On the Interaction between Convection and Magnetic Fields. *Fausto Cattaneo, Thierry Emonet, & Nigel Weiss.* 588, 1183 (2003)

Dynamo Action Driven by Shear and Magnetic Buoyancy. *Kelly S. Cline, Nicholas H. Brummell, & Fausto Cattaneo.* 599, 1449 (2003)

Caux, E. The Hot Core around the Low-Mass Protostar IRAS 16293−2422: Scoundrels Rule! *S. Cazaux, A. G. G. M. Tielens, C. Ceccarelli, A. Castets, V. Wakelam, E. Caux, B. Parise, & D. Teyssier.* 593, L51 (2003)

Cauzzi, G. *Solar and Heliospheric Observatory*/Coronal Diagnostic Spectrograph and Ground-based Observations of a Two-Ribbon Flare: Spatially Resolved Signatures of Chromospheric Evaporation. *L. Teriaca, A. Falchi, G. Cauzzi, R. Falciani, L. A. Smaldone, & V. Andretta.* 588, 596 (2003)

Cavaliere, A. Quasar Evolution Driven by Galaxy Encounters in Hierarchical Structures. *N. Menci, A. Cavaliere, A. Fontana, E. Giallongo, F. Poli, & V. Vittorini.* 587, L63 (2003)

Sunyaev-Zel'dovich Effects from Quasars in Galaxies and Groups. *A. Lapi, A. Cavaliere, & G. De Zotti.* 597, L93 (2003)

Cawley, M. F. See Akerlof, C. W., et al. A Search for Correlations of TeV Gamma Rays with Ultra–High-Energy Cosmic Rays.

Cayrel, Roger. See Barbuy, Beatriz, et al. Oxygen Abundance in the Template Halo Giant HD 122563.

Cazaux, S. The Hot Core around the Low-Mass Protostar IRAS 16293−2422: Scoundrels Rule! *S. Cazaux, A. G. G. M. Tielens, C. Ceccarelli, A. Castets, V. Wakelam, E. Caux, B. Parise, & D. Teyssier.* 593, L51 (2003)

Cazzoli, G. Precise Laboratory Frequencies of the $J = 1$–0 and $J = 2$–1 Rotational Transitions of $C^{18}O$. *G. Cazzoli, C. Puzzarini, & A. V. Lapinov.* 592, L95 (2003)

Ceccarelli, C. CO Depletion and Deuterium Fractionation in Prestellar Cores. *A. Bacmann, B. Lefloch, C. Ceccarelli, J. Steinacker, A. Castets, & L. Loinard.* 585, L55 (2003)

The Hot Core around the Low-Mass Protostar IRAS 16293−2422: Scoundrels Rule! *S. Cazaux, A. G. G. M. Tielens, C. Ceccarelli, A. Castets, V. Wakelam, E. Caux, B. Parise, & D. Teyssier.* 593, L51 (2003)

First Detection of Doubly Deuterated Hydrogen Sulfide. *C. Vastel, T. G. Phillips, C. Ceccarelli, & J. Pearson.* 593, L97 (2003)

Celik, O. See de la Calle Pérez, I., et al. Search for High-Energy Gamma Rays from an X-Ray–Selected Blazar Sample.

CELOTTI, A. 1WGA J1216.9+3743: *Chandra* Finds an Extremely Steep Ultraluminous X-Ray Source. *I. Cagnoni, R. Turolla, A. Treaves, J.-S. Huang, D. W. Kim, M. Elvis, & A. Celotti.* 582, 654 (2003)

CEN, RENYUE. The Universe Was Reionized Twice. *Renyue Cen.* 591, 12 (2003)

The Implications of *Wilkinson Microwave Anisotropy Probe* Observations for Population III Star Formation Processes. *Renyue Cen.* 591, L5 (2003)

The Probability Distribution Function of Light in the Universe: Results from Hydrodynamic Simulations. *Jeremiah P. Ostriker, Kentaro Nagamine, Renyue Cen, & Masataka Fukugita.* 597, 1 (2003)

Galaxies inside Strömgren Spheres of Luminous Quasars at $z > 6$: Detection of the First Galaxies. *Renyue Cen.* 597, L13 (2003)

A Measurement of the Temperature-Density Relation in the Intergalactic Medium Using a New Lyα Absorption Line Fitting Method: Erratum (ApJ, 562, 52 [2001]). *Patrick McDonald, Jordi Miralda-Escudé, Michael Rauch, Wallace L. W. Sargent, Tom A. Barlow, & Renyue Cen.* 598, 712 (2003) (Orig. paper in 562, 52 (2001))

Cosmological Mestel Disks and the Rossby Vortex Instability: The Origin of Supermassive Black Holes. *Stirling A. Colgate, Renyue Cen, Hui Li, Nathan Currier, & Michael S. Warren.* 598, L7 (2003)

Metallicity Evolution of Damped Lyα Systems in ΛCDM Cosmology. *Renyue Cen, Jeremiah P. Ostriker, Jason X. Prochaska, & Arthur M. Wolfe.* 598, 741 (2003)

CENARRO, J. Differences in Carbon and Nitrogen Abundances between Field and Cluster Early-Type Galaxies. *P. Sánchez-Blázquez, J. Gorgas, N. Cardiel, J. Cenarro, & J. J. González.* 590, L91 (2003)

CEPA, J. CO (3–2) Observations of Early-Type Galaxies with the Heinrich Hertz Telescope. *B. Vila-Vilaró, J. Cepa, & H. M. Butner.* 594, 232 (2003)

CERNICHARO, J. Nonequilibrium CO Chemistry in the Solar Atmosphere. *A. Asensio Ramos, J. Trujillo Bueno, M. Carlsson, & J. Cernicharo.* 588, L61 (2003)

Warm Molecular Hydrogen and Ionized Neon in the HH 2 Outflow. *B. LeFloch, J. Cernicharo, S. Cabrit, A. Noriega-Crespo, A. Moro-Martín, & D. Cesarsky.* 590, L41 (2003)

CERVINO, M. The Effect of Collisional Enhancement of Balmer Lines on the Determination of the Primordial Helium Abundance. *V. Luridiana, A. Peimbert, M. Peimbert, & M. Cervino.* 592, 846 (2003)

Nuclear Activity and Massive Star Formation in the Low-Luminosity Active Galactic Nucleus NGC 4303: *Chandra* X-Ray Observations. *E. Jiménez-Bailón, M. Santos-Lleó, J. M. Mas-Hesse, M. Guainazzi, L. Colina, M. Cerviño, & Rosa M. González Delgado.* 593, 127 (2003)

CESARES, J. Dynamical Evidence for a Black Hole in GX 339−4. *R. I. Hynes, D. Steeghs, J. Cesares, P. A. Charles, & K. O'Brien.* 583, L95 (2003)

CESARSKY, D. Warm Molecular Hydrogen and Ionized Neon in the HH 2 Outflow. *B. LeFloch, J. Cernicharo, S. Cabrit, A. Noriega-Crespo, A. Moro-Martín, & D. Cesarsky.* 590, L41 (2003)

CHABOYER, BRIAN. The Impact of Pollution on Stellar Evolution Models. *Aaron Dotter & Brian Chaboyer.* 596, 496 (2003)

Stellar Pollution and [Fe/H] in the Hyades. *Aaron Dotter & Brian Chaboyer.* 596, L101 (2003)

CHABRIER, GILLES. Equation of State and Opacities for Hydrogen Atmospheres of Neutron Stars with Strong Magnetic Fields. *Alexander Y. Potekhin & Gilles Chabrier.* 585, 955 (2003)

The Galactic Disk Mass Function: Reconciliation of the *Hubble Space Telescope* and Nearby Determinations. *Gilles Chabrier.* 586, L133 (2003)

Thermal Structure and Cooling of Superfluid Neutron Stars with Accreted Magnetized Envelopes. *Alexander Y. Potekhin, Dmitry G. Yakovlev, Gilles Chabrier, & Oleg Y. Gnedin.* 594, 404 (2003)

Atmospheres and Spectra of Strongly Magnetized Neutron Stars. III. Partially Ionized Hydrogen Models. *Wynn C. G. Ho, Dong Lai, Alexander Y. Potekhin, & Gilles Chabrier.* 599, 1293 (2003)

CHAE, JONGCHUL. The Formation of a Prominence in NOAA Active Region 8668. II. *Trace* Observations of Jets and Eruptions Associated with Canceling Magnetic Features. *Jongchul Chae.* 584, 1084 (2003)

CHAE, KYU-HYUN. Limits on the Evolution of Galaxies from the Statistics of Gravitational Lenses. *Kyu-Hyun Chae & Shude Mao.* 599, L61 (2003)

CHAFFEE, F. See COLAVITA, M., et al. Observations of DG Tauri with the Keck Interferometer.

CHAKRABARTI, S. SPINR—a Wide-Field Ultraviolet Spectral Imaging System. *T. A. Cook, V. J. Gsell, J. Golub, & S. Chakrabarti.* 585, 1177 (2003)

Branch, Spur, and Feather Formation in Spiral Galaxies. *S. Chakrabarti, G. Laughlin, & F. H. Shu.* 596, 220 (2003)

CHAKRABARTI, SANDIP K. Possible Photometric Evidence of Ejection of Bullet-like Features in the Relativistic Jet Source SS 433. *Sandip K. Chakrabarti, S. Pal, A. Nandi, B. G. Anandarao, & Soumen Mondal.* 595, L45 (2003)

CHAKRABARTY, D. See MILLER, J. M., et al. *XMM-Newton* Spectroscopy of the Accretion-driven Millisecond X-Ray Pulsar XTE J1751−305 in Outburst.

A Major Soft Gamma Repeater–like Outburst and Rotation Glitch in the No-longer-so-anomalous X-Ray Pulsar 1E 2259+586. *V. M. Kaspi, F. P. Gavriil, P. M. Woods, J. B. Jensen, M. S. E. Roberts, & D. Chakrabarty.* 588, L93 (2003)

CHAKRABARTY, DEEPTO. X-Ray Spectroscopy of the Accreting Millisecond Pulsar XTE J0929−314 in Outburst. *Adrienne M. Juett, Duncan K. Galloway, & Deepto Chakrabarty.* 587, 754 (2003)

Eddington-limited X-Ray Bursts as Distance Indicators. I. Systematic Trends and Spherical Symmetry in Bursts from 4U 1728−34. *Duncan K. Galloway, Dimitrios Psaltis, Deepto Chakrabarty, & Michael P. Muno.* 590, 999 (2003)

The Energy Dependence of Millisecond Oscillations in Thermonuclear X-Ray Bursts. *Michael P. Muno, Feryal Oezel, & Deepto Chakrabarty.* 595, 1066 (2003)

X-Ray Spectroscopy of the Low-Mass X-Ray Binaries 2S 0918−549 and 4U 1543−624: Evidence for Neon-Rich Degenerate Donors. *Adrienne M. Juett & Deepto Chakrabarty.* 599, 498 (2003)

CHAKRABORTY, H. S. Interchannel Coupling in Ionic Photoionization far above Threshold: The Neon Isoelectronic Sequence. *H. S. Chakraborty, P. C. Deshmukh, & S. T. Manson.* 595, 1307 (2003)

CHALLIS, P. See STANEK, K. Z., et al. Spectroscopic Discovery of the Supernova 2003dh Associated with GRB 030329.

See MATHESON, T., et al. Photometry and Spectroscopy of GRB 03029 and Its Associated Supernova 2003dh: The First Two Months.

CHALLIS, P. M. See BERSIER, D., et al. The Strongly Polarized Afterglow of GRB 020405.

CHALLIS, PETER. See MICHAEL, ELI, et al. *Hubble Space Telescope* Observations of High-Velocity Lyα and Hα Emission from Supernova Remnant 1987A: The Structure and Development of the Reverse Shock.

See TONRY, JOHN L., et al. Cosmological Results from High-z Supernovae.

CHAMBERS, S. See FELDMAN, H., et al. An Estimate of Ω_m without Conventional Priors.

CHAMBERS, SCOTT W. Optimal Moments for the Analysis of Peculiar Velocity Surveys. II. Testing. *Hume A. Feldman, Richard Watkins, Adrian L. Melott, & Scott W. Chambers.* 599, 820 (2003)

CHAMPEAUX, J.-P. Measurements and Calculations of Photoionization Cross Sections of Multiply Charged Ions in Ground and Metastable States along the Isonuclear Series of Oxygen: O^{2+} to O^{4+}. *J.-P. Champeaux, J.-M. Bizau, D. Cubaynes, C. Blancard, S. Nahar, D. Hitz, J. Bruneau, & F. J. Wuilleumier.* 148, 583 (2003)

CHAN, D. See COLAVITA, M., et al. Observations of DG Tauri with the Keck Interferometer.

CHAN, K. H. A Three-dimensional Spherical Nonlinear Interface Dynamo. *K. Zhang, K. H. Chan, J. Zou, X. Liao, & G. Schubert.* 596, 663 (2003)

CHAN, R. Morphological and Kinematic Properties of Disk Galaxies Perturbed by a Satellite. *R. Chan & S. Junqueira.* 586, 780 (2003)

CHANDAR, RUPALI. The Stellar Content of Henize 2-10 from Space Telescope Imaging Spectrograph Ultraviolet Spectroscopy. *Rupali Chandar, Claus Leitherer, Christy Tremonti, & Daniela Calzetti.* 586, 939 (2003)

CHANDRAN, BENJAMIN D. G. Particle Acceleration by Slow Modes in Strong Compressible Magnetohydrodynamic Turbulence, with Application to Solar Flares. *Benjamin D. G. Chandran.* 599, 1426 (2003)

CHANG, HEON-YOUNG. Probing Structures of Distant Extrasolar Planets with Microlensing. *B. Scott Gaudi, Heon-Young Chang, & Cheongho Han.* 586, 527 (2003)

CHANG, KYONGAE. Signs of Planetary Microlensing Signals. *Cheongho Han & Kyongae Chang.* 597, 1070 (2003)

CHANG, PHILIP. Diffusive Nuclear Burning in Neutron Star Envelopes. *Philip Chang & Lars Bildsten.* 585, 464 (2003)

Atomic Spectral Features during Thermonuclear Flashes on Neutron Stars. *Lars Bildsten, Philip Chang, & Frits Paerels.* 591, L29 (2003)

CHAPLIN, W. J. Does the Energy Supplied to Low-l Solar p-Modes Vary over the Activity Cycle? *W. J. Chaplin, Y. Elsworth, G. R. Isaak, B. A. Miller, R. New, & T. Toutain.* 582, L115 (2003)

A Comparison of Low-Degree Solar p-Mode Parameters from BiSON and GONG: Underlying Values and Temporal Variations. *R. Howe, W. J.*

Chaplin, Y. P. Elsworth, F. Hill, R. Komm, G. R. Isaak, & R. New. 588, 1204 (2003)

Excitation and Damping of Low-Degree Solar p-Modes during Activity Cycle 23: Analysis of GOLF and VIRGO/Sun Photometer Data. *S. J. Jiménez-Reyes, R. A. García, A. Jiménez, & W. J. Chaplin.* 595, 446 (2003)

CHAPMAN, G. A. Weak Infrared Molecular Lines Reveal Rapid Outflow in Cool Magnetic Sunspot Penumbral Fibrils. *M. J. Penn, W. D. Cao, S. R. Walton, G. A. Chapman, & W. Livingston.* 590, L119 (2003)

CHAPMAN, GARY A. The Contribution of Faculae and Network to Long-Term Changes in the Total Solar Irradiance. *Stephan R. Walton, Dora G. Preminger, & Gary A. Chapman.* 590, 1088 (2003)

CHAPMAN, S. C. The Properties of Microjansky Radio Sources in the Hubble Deep Field–North, SSA 13, and SSA 22 Fields. *S. C. Chapman, A. J. Barger, L. L. Cowie, D. Scott, C. Borys, P. Capak, E. B. Fomalont, G. F. Lewis, E. A. Richards, A. T. Steffen, G. Wilson, & M. Yun.* 585, 57 (2003)

The Bivariate Luminosity-Color Distribution of *IRAS* Galaxies and Implications for the High-Redshift Universe. *S. C. Chapman, G. Helou, G. F. Lewis, & D. A. Dale.* 588, 186 (2003)

Submillimeter Observations of a Sample of Broad Absorption Line Quasars. *Geraint F. Lewis, S. C. Chapman, & Zdenka Kuncic.* 596, L35 (2003)

See NERI, R., et al. Interferometric Observations of Powerful CO Emission from Three Submillimeter Galaxies at $z = 2.39$, 2.51, and 3.35.

Hubble Space Telescope Images of Submillimeter Sources: Large Irregular Galaxies at High Redshift. *S. C. Chapman, R. Windhorst, S. Odewahn, H. Yan, & C. Conselice.* 599, 92 (2003)

CHAPMAN, SCOTT C. The Infrared Counterparts of the Optically Unidentified Chandra Deep Field–South 1 Ms Sources. *Haojing Yan, Rogier A. Windhorst, Haub J. A. Röttgering, Seth H. Cohen, Stephen C. Odewahn, Scott C. Chapman, & William C. Keel.* 585, 67 (2003)

Evidence for a Major Merger Origin of High Redshift Sub-millimeter Galaxies. *Christopher J. Conselice, Scott C. Chapman, & Rogier A. Windhorst.* 596, L5 (2003)

CHARLES, P. A. Dynamical Evidence for a Black Hole in GX 339−4. *R. I. Hynes, D. Steeghs, J. Casares, P. A. Charles, & K. O'Brien.* 583, L95 (2003)

The Optical Light Curves of XTE J2123−058. III. The Mass of the Binary Components and the Structure of the Quiescent Accretion Disk. *T. Shahbaz, C. Zurita, J. Casares, G. Dubus, P. A. Charles, R. Mark Wagner, & E. Ryan.* 585, 443 (2003)

The Dynamics of M15: Observations of the Velocity Dispersion Profile and Fokker-Planck Models: Addendum (ApJ, 481, 267 [1997]). *J. D. Dull, H. N. Cohn, P. M. Lugger, B. W. Murphy, P. O. Seitzer, P. J. Callanan, R. G. M. Rutten, & P. A. Charles.* 585, 598 (2003) (Orig. paper in 481, 267 (1997))

Bowen Flourescence from the Companion Star in X1822−371. *J. Casares, D. Steeghs, R. I. Hynes, P. A. Charles, & K. O'Brien.* 590, 1041 (2003)

CHARLTON, JANE C. The *ASCA* X-Ray Spectrum of Arp 102B and Evaluation of Simple Models for Its Associated, Metastable Fe II Absorber. *Michael Eracleous, Jules P. Halpern, & Jane C. Charlton.* 582, 633 (2003)

A Quadruple-Phase Strong Mg II Absorber at $z \sim 0.9902$ toward PG 1634+706. *Jie Ding, Jane C. Charlton, Nicholas A. Bond, Stephanie G. Zonak, & Christopher W. Churchill.* 587, 551 (2003)

High-Resolution STIS/*Hubble Space Telescope* and HIRES/Keck Spectra of Three Weak Mg II Absorbers toward PG 1643+706. *Jane C. Charlton, Jie Ding, Stephanie G. Zonak, Christopher W. Churchill, Nicholas A. Bond, & Jane R. Rigby.* 589, 111 (2003)

The Multiphase Absorption Systems toward PG 1206+459. *Jie Ding, Jane C. Charlton, Christopher W. Churchill, & Christopher Palma.* 590, 746 (2003)

The Spatial, Ionization, and Kinematic Conditions of the $z = 1.39$ Damped Lyα Absorber in Q0957+561 A,B. *Christopher W. Churchill, Richard R. Mellon, Jane C. Charlton, & Steven S. Vogt.* 593, 203 (2003)

An Intrinsic Absorption Complex toward RX J1230.8+0115: Geometry and Photoionization Conditions. *Rajib Ganguly, Joseph Masiero, Jane C. Charlton, & Kenneth R. Sembach.* 598, 922 (2003)

CHARMANDARIS, V. See CORBETT, E. A., et al. COLA. II. Radio and Spectroscopic Diagnostics of Nuclear Activity in Galaxies.

Azimuthal and Kinematic Segregation of Neutral and Molecular Gas in Arp 118: The Yin-Yang Galaxy NGC 1144. *P. N. Appleton, V. Charmandaris, Yu Gao, Tom Jarrett, & M. A. Bransford.* 586, 112 (2003)

CHARMANDARIS, VASSILIS. The Mass Function of Supergiant Molecular Complexes and Implications for Forming Young Massive Star Clusters in the Antennae (NGC 4038/4039). *Christine D. Wilson, Nicholas Scoville, Suzanne C. Madden, & Vassilis Charmandaris.* 599, 1049 (2003)

CHARNLEY, S. B. Chemical Evolution in Protostellar Envelopes: Cocoon Chemistry. *S. D. Rodgers & S. B. Charnley.* 585, 355 (2003)

The Astrobiology of Nucleobases. *Z. Peeters, O. Botta, S. B. Charnley, R. Ruiterkamp, & P. Ehrenfreud.* 593, L129 (2003)

CHARNLEY, STEVEN B. Interstellar Glycine. *Yi-Jehng Kuan, Steven B. Charnley, Hui-Chun Huang, Wei-Ling Tseng, & Zbigniew Kisiel.* 593, 848 (2003)

CHARPINET, S. A Confirmation of the Optical Spectroscopy Approach: Discovery of Two More Pulsating DA (ZZ Ceti) White Dwarfs. *G. Fontaine, P. Bergeron, M. Billères, & S. Charpinet.* 591, 1184 (2003)

A Driving Mechanism for the Newly Discovered Long-Period Pulsating Subdwarf B Stars. *G. Fontaine, P. Brassard, S. Charpinet, E. M. Green, P. Chayer, M. Billères, & S. K. Randall.* 597, 518 (2003)

CHARRO, E. Intensities of E2 Spectral Lines in the Astrophysically Important Ion Mg II. *E. Charro & I. Martín.* 585, 1191 (2003)

CHARTAS, G. *Chandra* Observations of QSO 2237+0305. *X. Dai, G. Chartas, E. Agol, M. W. Bautz, & G. P. Garmire.* 589, 100 (2003)

XMM-Newton Reveals the Quasar Outflow in PG 1115+080. *G. Chartas, W. N. Brandt, & S. C. Gallagher.* 595, 85 (2003)

CHARTAS, GEORGE. Coronal X-Ray Emission from an Intermediate-Age Brown Dwarf. *Yohko Tsuboi, Yoshitomo Maeda, Eric D. Feigelson, Gordon P. Garmire, George Chartas, Koji Mori, & Steven H. Pravdo.* 587, L51 (2003)

A New Method to Map Flares in Quasars. *Atsunori Yonehara, Shin Mineshige, Yoh Takei, George Chartas, & Edwin L. Turner.* 594, 107 (2003)

CHASTAIN, RAYMOND J. CH, CO, and $E(B-V)$ as Molecular Gas Tracers in a Translucent Cloud. *Loris Magnani, Raymond J. Chastain, Hyekyung Clarisse Kim, Dap Hartmann, Anthony T. Truong, & Patrick Thaddeus.* 586, 1111 (2003)

CHATTERJEE, PINAKI. Effects of Wandering on the Coalescence of Black Hole Binaries in Galactic Centers. *Pinaki Chatterjee, Lars Hernquist, & Abraham Loeb.* 592, 32 (2003)

CHATTERJEE, S. A CLEAN-based Method for Deconvolving Interstellar Pulse Broadening from Radio Pulses. *N. D. R. Bhat, J. M. Cordes, & S. Chatterjee.* 584, 782 (2003)

CHAUVILLE, J. See MARCHENKO, S. V., et al. The Unusual 2001 Periastron Passage in the "Clockwork" Colliding-Wind Binary WR 140.

CHAVES, TARA. High-Latitude H I in NGC 2613: Buoyant Disk-Halo Outflow. *Judith A. Irwin & Tara Chaves.* 585, 268 (2003)

Chandra Observation of the Edge-on Galaxy NGC 3556 (M108): Violent Galactic Disk-Halo Interaction Revealed. *Q. Daniel Wang, Tara Chaves, & Judith A. Irwin.* 598, 969 (2003)

CHAVUSHYAN, V. See STEPANIAN, J. A., et al. A Multiwavelength Study of Narrow-Line Seyfert 1 Galaxies from the Second Byurakan Survey.

CHAVUSHYAN, V. H. The Leo I Cloud: Secular Nuclear Evolution of NGC 3379, NGC 3384, and NGC 3368? *O. K. Sil'chenko, A. V. Moiseev, V. L. Afanasiev, V. H. Chavushyan, & J. R. Valdes.* 591, 185 (2003)

CHAVUSHYAN, VAHRAM. See COLLEY, WESLEY N., et al. Around-the-Clock Observations of the Q9057+561A,B Gravitationally Lensed Quasar. II. Results for the Second Observing Season.

CHAYER, P. *Far Ultraviolet Spectroscopic Explorer* Survey of the Local Interstellar Medium within 200 Parsecs. *N. Lehner, E. B. Jenkins, C. Gry, H. W. Moos, P. Chayer, & S. Lacour.* 595, 858 (2003)

A Driving Mechanism for the Newly Discovered Long-Period Pulsating Subdwarf B Stars. *G. Fontaine, P. Brassard, S. Charpinet, E. M. Green, P. Chayer, M. Billères, & S. K. Randall.* 597, 518 (2003)

CHAYER, PIERRE. Interstellar Deuterium, Nitrogen, and Oxygen Abundances toward GD 246, WD 2331−475, HZ 21, and Lanning 23: Results from the *FUSE* Mission. *Cristina M. Oliveira, Guillaume Hébrard, J. Christopher Howk, Jeffrey W. Kruk, Pierre Chayer, & H. Warren Moos.* 587, 235 (2003)

Far Ultraviolet Spectroscopic Explorer Observation of the Ultramassive White Dwarf PG 1658+441. *Jean Dupuis, Pierre Chayer, Stéphane Vennes, Nicole F. Allard, & Guillaume Hébrard.* 598, 486 (2003)

CHELOUCHE, DORON. Strong Gravitational Lensing and the Structure of Quasar Outflows. *Doron Chelouche.* 596, L43 (2003)

See NETZER, HAGAI, et al. The Ionized Gas and Nuclear Environment in NGC 3783. IV. Variability and Modeling of the 900 Kilosecond *Chandra* Spectrum.

CHEN, C. H. The Low-Velocity Wind from the Circumstellar Matter around the B9 V Star σ Herculis. *C. H. Chen & M. Jura.* 582, 443 (2003)

The Mid-Infrared–emitting Dust around AB Aurigae. *C. H. Chen & M. Jura.* 591, 267 (2003)

CHEN, C.-H. ROSIE. Diffuse X-Ray Emission from the Quiescent Superbubble M17, the Omega Nebula. *Bryan C. Dunne, You-Hua Chu, C.-H. Rosie Chen, Justin D. Lowry, Leisa Townsley, Robert A. Gruendl, Martín A. Guerrero, & Margarita Rosado.* 590, 306 (2003)

CHEN, D. N. Angular Momentum Distribution of Hot Gas and Implications for Disk Galaxy Formation. *D. N. Chen, Y. P. Jing, & Kohji Yoshikawa.* 597, 35 (2003)

CHEN, DA-MING. Strong Gravitational Lensing and Galactic Bulges. *Da-Ming Chen.* 587, L55 (2003)

CHEN, GANG. Cosmological Constraints from Compact Radio Sources Angular Size versus Redshift Data. *Gang Chen & Bharat Ratra.* 582, 586 (2003)

CHEN, HSIAO-WEN. The Las Campanas Infrared Survey. IV. The Photometric Redshift Survey and the Rest-Frame *R*-Band Galaxy Luminosity Function at $0.5 \leq z \leq 1.5$. *Hsiao-Wen Chen, Ronald O. Marzke, Patrick J. McCarthy, P. Martini, R. G. Carlberg, S. E. Persson, A. Bunker, C. R. Bridge, & R. G. Abraham.* 586, 745 (2003)

The Nature of Damped Lyα Absorbing Galaxies at $z \leq 1$: A Photometric Redshift Survey of Damped Lyα Absorbers. *Hsiao-Wen Chen & Kenneth M. Lanzetta.* 597, 706 (2003)

CHEN, HUADONG. Hα Dimmings Associated with the X1.6 Flare and Halo Coronal Mass Ejection on 2001 October 19. *Yunchun Jiang, Haisheng Ji, Haimin Wang, & Huadong Chen.* 597, L161 (2003)

CHEN, J. Physical Parameters of the 2000 February 11 Coronal Mass Ejection: Ultraviolet Spectra versus White-Light Images. *A. Ciaravella, J. C. Raymond, A. van Ballegooijen, L. Strachan, A. Vourlidas, J. Li, J. Chen, & A. Panasyuk.* 597, 1118 (2003)

CHEN, JACQUELINE. Lensing Optical Depths for Substructure and Isolated Dark Matter Halos. *Jacqueline Chen, Andrey V. Kravtsov, & Charles R. Keeton.* 592, 24 (2003)

CHEN, L. Does the Iron Kα Line of Active Galactic Nuclei Arise from the Cerenkov Line-like Radiation? *J. H. You, D. B. Liu, W. P. Chen, L. Chen, & S. N. Zhang.* 599, 164 (2003)

CHEN, M. H. Assessment of the Fluorescence and Auger Database used in Plasma Modeling. *T. W. Gorczyca, C. N. Kodituwakku, K. T. Korista, O. Zatsarinny, N. R. Badnell, E. Behar, M. H. Chen, & D. W. Savin.* 592, 636 (2003)

See SAVIN, D. W., et al. Dielectronic Recombination of the Fe XXI and Fe XXII via $N = 2 \rightarrow N' = 2$ Core Excitations.

CHEN, M. L. See ATKINS, R., et al. The High-Energy Gamma-Ray Fluence and Energy Spectrum of GRB 970417A from Observations with Milagrito.

See FALCONE, A., et al. Observation of GeV Solar Energetic Particles from the 1997 November 6 Event Using Milagrito.

CHEN, P. F. Hα and Hard X-Ray Observations of a Two-Ribbon Flare Associated with a Filament Eruption. *M. D. Ding, Q. R. Chen, J. P. Li, & P. F. Chen.* 598, 683 (2003)

CHEN, Q. R. Hα and Hard X-Ray Observations of a Two-Ribbon Flare Associated with a Filament Eruption. *M. D. Ding, Q. R. Chen, J. P. Li, & P. F. Chen.* 598, 683 (2003)

CHEN, W. P. Does the Iron Kα Line of Active Galactic Nuclei Arise from the Cerenkov Line-like Radiation? *J. H. You, D. B. Liu, W. P. Chen, L. Chen, & S. N. Zhang.* 599, 164 (2003)

CHEN, WAN. Ozone Depletion from Nearby Supernovae. *Neil Gehrels, Claude M. Laird, Charles H. Jackman, John K. Cannizzo, Barbara J. Mattson, & Wan Chen.* 585, 1169 (2003)

CHEN, XUELEI. Tracing the Warm-Hot Intergalactic Medium at Low Redshift: X-Ray Forest Observations toward H1821+643. *Smita Mathur, David H. Weinberg, & Xuelei Chen.* 582, 82 (2003)

Corrective Lenses for High-Redshift Supernovae. *Neal Dalal, Daniel E. Holz, Xuelei Chen, & Joshua A. Frieman.* 585, L11 (2003)

X-Ray Absorption by the Low-Redshift Intergalactic Medium: A Numerical Study of the Λ Cold Dark Matter Model. *Xuelei Chen, David H. Weinberg, Neal Katz, & Romeel Davé.* 594, 42 (2003)

CHEN, Y. Formation of Minor-Ion Charge States in the Fast Solar Wind: Roles of Differential Flow Speeds of Ions of the Same Element. *Y. Chen, R. Esser, & Y. Hu.* 582, 467 (2003)

CHEN, Y. Q. Chemical Abundances of Old Metal-rich Stars in the Solar Neighborhood. *Y. Q. Chen, G. Zhao, P. E. Nissen, G. S. Bai, & H. M. Qiu.* 591, 925 (2003)

CHEN, YANG. Supernova Remnant Crossing a Density Jump: A Thin-Shell Model. *Yang Chen, Fan Zhang, Rosa M. Williams, & Q. Daniel Wang.* 595, 227 (2003)

CHENG, C. Z. Flux Rope Acceleration and Enhanced Magnetic Reconnection Rate. *C. Z. Cheng, Y. Ren, G. S. Choe, & Y.-J. Moon.* 596, 1341 (2003)

CHENG, E. See TRAN, H. D., et al. Advanced Camera for Surveys Observations of Young Star Clusters in the Interacting Galaxy UGC 10214.

CHENG, E. S. See BOUWENS, R. J., et al. Star Formation at $z \sim 6$: i-Dropouts in the Advanced Camera for Surveys Guaranteed Time Observation Fields.

See AGUIRRE, J. E., et al. The Spectrum of Integrated Millimeter Flux of the Magellanic Clouds and 30 Doradus from TopHat and DIRBE Data.

See MEURER, GERHARDT R., et al. The Discovery of Globular Clusters in the Protospiral Galaxy NGC 2915: Implications for Hierarchical Galaxy Evolution.

CHENG, FUHUA. *Hubble Space Telescope* STIS Spectroscopy of the White Dwarfs in the Ultrashort-Period Dwarf Novae VY Aquarii and WX Ceti. *Edward M. Sion, Paula Szkody, Fuhua Cheng, Boris T. Gänsicke, & Steve B. Howell.* 583, 907 (2003)

CHENG, FU-HUA. See SION, EDWARD M., et al. *Hubble Space Telescope* Spectroscopy of the Unexpected 2001 July Outburst of the Dwarf Nova WZ Sagittae.

CHENG, K. S. An Accretion Model for the Growth of the Central Black Hole Associated with Ionization Instability in Quasars. *Y. Lu, K. S. Cheng, & S. N. Zhang.* 590, 52 (2003)

The Radio Afterglow from the Giant Flare of SGR 1900+14: The Same Mechanism as Afterglows from Classic Gamma-Ray Bursts? *K. S. Cheng & X. Y. Wang.* 593, L85 (2003)

Gamma-Ray Bursts from Neutron Star Kicks. *Y. F. Huang, Z. G. Dai, T. Lu, K. S. Cheng, & X. F. Wu.* 594, 919 (2003)

Surface Photon Emissivity of Bare Strange Stars. *K. S. Cheng & T. Harko.* 596, 451 (2003)

On the Origin of X-Ray Emission from Millisecond Pulsars in 47 Tucanae. *K. S. Cheng & Ronald E. Taam.* 598, 1207 (2003)

CHEUNG, C. C. Near-Infrared Observations of BL Lacertae Host Galaxies. *C. C. Cheung, C. Megan Urry, Riccardo Scarpa, & Mauro Giavalisco.* 599, 155 (2003)

CHEVALIER, R. A. See PRICE, P. A., et al. GRB 010921: Strong Limits on an Underlying Supernova from the *Hubble Space Telescope*.

See PRICE, P. A., et al. Discovery of GRB 020405 and Its Late Red Bump.

CHEVALIER, ROGER. See MICHAEL, ELI, et al. *Hubble Space Telescope* Observations of High-Velocity Lyα and Hα Emission from Supernova Remnant 1987A: The Structure and Development of the Reverse Shock.

CHEVALIER, ROGER A. Wind-Interaction Models for the Early Afterglows of Gamma-Ray Bursts: The Case of GRB 021004. *Zhi-Yun Li & Roger A. Chevalier.* 589, L69 (2003)

Cassiopeia A and Its Clumpy Presupernova Wind. *Roger A. Chevalier & Jeffrey Oishi.* 593, L23 (2003)

X-Ray Emission from a Sample of Young Supernovae. *Joel N. Bregman, John C. Houck, Roger A. Chevalier, & Morton S. Roberts.* 596, 323 (2003)

CHEVRETON, M. A Search for Small Kuiper Belt Objects by Stellar Occultations. *F. Roques, M. Moncuquet, N. Lavillonière, M. Auvergne, M. Chevreton, F. Colas, & J. Lecacheux.* 594, L63 (2003)

See MUKADEM, ANJUM S., et al. Constraining the Evolution of ZZ Ceti.

CHIABERGE, MARCO. What Do the *Hubble Space Telescope* and *Chandra* Tell Us about the Jet and the Nuclear Region of the Radio Galaxy 3C 270? *Marco Chiaberge, Roberto Gilli, F. Duccio Macchetto, William B. Sparks, & Alessandro Capetti.* 582, 645 (2003)

The Nuclear Spectral Energy Distribution of NGC 6251: A BL Lacertae Object in the Center of an FR I Radio Galaxy. *Marco Chiaberge, Roberto Gilli, Alessandro Capetti, & F. Duccio Macchetto.* 597, 166 (2003)

CHIANG, E. I. Excitation of Orbital Eccentricities by Repeated Resonance Crossings: Requirements. *E. I. Chiang.* 584, 465 (2003)

CHIANG, EUGENE I. Three-dimensional Dynamics of Narrow Planetary Rings. *Eugene I. Chiang & Christopher J. Culter.* 599, 675 (2003)

CHIANG, JAMES. Using Multiwavelength Observations to Determine the Black Hole Mass and Accretion Rate in the Type 1 Seyfert Galaxy NGC 5548. *James Chiang & Omer Blaes.* 586, 97 (2003)

CHIANG, LUNG-YIH. Non-Gaussianity of the Derived Maps from the First-Year *Wilkinson Microwave Anisotropy Probe* Data. *Lung-Yih Chiang, Pavel D. Naselsky, Oleg V. Verkhodanov, & Michael J. Way.* 590, L65 (2003)

CHIAR, J. E. A Test Case for the Organic Refractory Model of Interstellar Dust. *S. S. Shenoy, D. C. B. Whittet, J. E. Chiar, A. J. Adamson, W. G. Roberge, & G. E. Hassel.* 591, 962 (2003)

CHIARENZA, CLAUDIA A. T. C. See ESKRIDGE, PAUL B., et al. Ultraviolet-Optical Pixel Maps of Face-on Spiral Galaxies: Clues for Dynamics and Star Formation Histories.

CHIBA, MASASHI. Kinematics of Tidal Debris from ω Centauri's Progenitor Galaxy. *Arihiro Mizutani, Masashi Chiba, & Tsuyoshi Sakamoto.* 589, L89 (2003)

See IYE, MASANORI, et al. ERO R1 in the Field of Cl 0939+4713: Evidence for an S0-Like Galaxy at $z \sim 1.5$.

Direct Mapping of Massive Compact Objects in Extragalactic Dark Halos. *Kaiki Taro Inoue & Masashi Chiba.* 591, L83 (2003)

CHIEFFI, ALESSANDRO. Evolution, Explosion, and Nucleosynthesis of Core-Collapse Supernovae. *Marco Limongi & Alessandro Chieffi.* 592, 404 (2003)

On the Origin of HE 0107−5240, the Most Iron-deficient Star Presently Known. *Marco Limongi, Alessandro Chieffi, & Piercarlo Bonifacio.* 594, L123 (2003)

CHIGAI, TAKESHI. Are TiC Grains a Carrier of the 21 Micron Emission Band Observed around Post–Asympiotic Giant Branch Objects? *Takeshi Chigai, Tetsuo Yamamoto, Chihiro Kaito, & Yuki Kimura.* 587, 771 (2003)

CHILINGARIAN, A. Detection of the High-Energy Cosmic Rays from the Monogem Ring. *A. Chilingarian, H. Martirosia, & G. Gharagyozyan.* 597, L129 (2003)

CHILLIER, XAVIER D.F. Luminescence from Vacuum-Ultraviolet–irradiated Cosmic Ice Analogs and Residues. *Murthy S. Gudipati, Jason P. Dworkin, Xavier D.F. Chillier, & Louis J. Allamandola.* 583, 514 (2003)

CHINARRO, LUIS. See COLLEY, WESLEY N., et al. Around-the-Clock Observations of the Q9057+561A,B Gravitationally Lensed Quasar. II. Results for the Second Observing Season.

CHIRKIN, D. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

CHISHOLM, JAMES R. Stellar-Mass Black Holes in the Solar Neighborhood. *James R. Chisholm, Scott Dodelson, & Edward W. Kolb.* 596, 437 (2003)

CHIU, WEIHSUEH A. Combining *Wilkinson Microwave Anisotropy Probe* and Sloan Digital Sky Survey Quasar Data on Reionization Constrains Cosmological Parameters and Star Formation Efficiency. *Weihsueh A. Chiu, Xiaohui Fan, & Jeremiah P. Ostriker.* 599, 759 (2003)

CHO, JAMES Y-K. "Weather" Variability of Close-in Extrasolar Giant Planets. *Kristen Menou, James Y-K. Cho, Sara Seager, & Bradley M. S. Hansen.* 587, L113 (2003)

The Changing Face of the Extrasolar Giant Planet HD 209458b. *Kristen Menou, James Y-K. Cho, Bradley M. S. Hansen, & Sara Seager.* 587, L117 (2003)

CHO, JUNGYEON. Thermal Conduction in Magnetized Turbulent Gas. *Jungyeon Cho, A. Lazarian, Albert Honein, Bernard Knaepen, Stavros Kassinos, & Parviz Moin.* 589, L77 (2003)

Ordinary and Viscosity-damped Magnetohydrodynamic Turbulence. *Jungyeon Cho, A. Lazarian, & Ethan T. Vishniac.* 595, 812 (2003)

CHOCK, J. See COLAVITA, M., et al. Observations of DG Tauri with the Keck Interferometer.

CHODAS, PAUL W. Peculiar Pair of Distant Periodic Comets C/2002 A1 and C/2002 A2 (LINEAR). *Zdenek Sekanina, Paul W. Chodas, Miloš Tichý, Jana Tichá, & Michal Kočer.* 591, L67 (2003)

CHOE, G. S. Periodic Motion along a Solar Filament Initiated by a Subflare. *Ju Jing, Jeongwoo Lee, Thomas J. Spirock, Yan Xu, Haimin Wang, & G. S. Choe.* 584, L103 (2003)

Hα, Extreme-Ultraviolet, and Microwave Observations of the 2000 March 22 Solar Flare and Spontaneous Magnetic Reconnection. *Jeongwoo Lee, Peter T. Gallagher, Dale E. Gary, Gelu M. Nita, G. S. Choe, Su-Chan Bong, & Hong Sik Yun.* 585, 524 (2003)

Sympathetic Coronal Mass Ejections. *Y.-J. Moon, G. S. Choe, Haimin Wang, & Y. D. Park.* 588, 1176 (2003)

Flux Rope Acceleration and Enhanced Magnetic Reconnection Rate. *C. Z. Cheng, Y. Ren, G. S. Choe, & Y.-J. Moon.* 596, 1341 (2003)

CHORNOCK, R. See MATHESON, T., et al. Photometry and Spectroscopy of GRB 03029 and Its Associated Supernova 2003dh: The First Two Months.

CHORNOCK, RYAN. The Early Light Curve of the Optical Afterglow of GRB 021211. *Weidong Li, Alexei V. Filippenko, Ryan Chornock, & Saurabh Jha.* 586, L9 (2003)

See MIRABAL, N., et al. GRB 021004: A Possible Shell Nebula around a Wolf-Rayet Star Gamma-Ray Burst Progenitor.

CHOU, Y. X-Ray Dip Monitoring of XB 1916−053. *T. Narita, J. E. Grindlay, P. F. Bloser, & Y. Chou.* 593, 1007 (2003)

CHOUDHURY, M. Correlated Radio:X-Ray Emission in the Hard States of Galactic Microquasars. *M. Choudhury, A. R. Rao, S. V. Vadawale, & A. K. Jain.* 593, 452 (2003)

CHRISTENSEN-DALSGAARD, J. A Comparison of Solar p-Mode Parameters from MDI and GONG: Mode Frequencies and Structure Inversion. *S. Basu, J. Christensen-Dalsgaard, R. Howe, J. Schou, M. J. Thompson, F. Hill, & R. Komm.* 591, 432 (2003)

CHRISTIAN, D. J. A Multiwavelength Study of the High-Field Magnetic White Dwarf EUVE J0317−85.5 (=RE J0317−853). *Stéphane Vennes, G. D. Schmidt, L. Ferrario, D. J. Christian, D. T. Wickramasinghe, & A. Kawka.* 593, 1040 (2003)

The Extreme-Ultraviolet Continuum of a Strong Stellar Flare. *D. J. Christian, M. Mathioudakis, D. Jevremović, J. Dupuis, S. Vennes, & A. Kawka.* 593, L105 (2003)

CHRISTIAN, E. R. See SLOCUM, P. L., et al. Elemental Fractionation in Small Solar Energetic Particle Events.

CHRISTIANSEN, J. See FOX, D. W., et al. Discovery of Early Optical Emission from GRB 021211.

CHRISTIANSEN, W. A. Probing Planck-Scale Physics with Extragalactic Sources? *Y. Jack Ng, W. A. Christiansen, & H. van Dam.* 591, L87 (2003)

CHRISTLEIN, DANIEL. Galaxy Luminosity Functions from Deep Spectroscopic Samples of Rich Clusters. *Daniel Christlein & Ann I. Zabludoff.* 591, 764 (2003)

CHRISTLIEB, NORBERT. Abundance Analysis of HE 2146−1247, a Star with Extremely Enhanced Neutron Capture Elements. *Judith G. Cohen, Norbert Christlieb, Y.-Z. Qian, & G. J. Wasserburg.* 588, 1082 (2003)

CHRISTODOULOU, DIMITRIS M. Interchange Method in Compressible Magnetized Couette Flow: Magnetorotational and Magnetoconvective Instabilities. *Dimitris M. Christodoulou, John Contopoulos, & Demosthenes Kazanas.* 586, 372 (2003)

CHRISTOPHER, M. The Host Galaxies of Optically Bright Quasi-stellar Objects: Molecular Gas in $z \leq 0.1$ Palomar-Green Quasi-stellar Objects. *N. Z. Scoville, D. T. Frayer, E. Schinnerer, & M. Christopher.* 585, L105 (2003)

Hubble Space Telescope Paα and 1.9 Micron Imaging of Sagittarius A West. *N. Z. Scoville, S. R. Stolovy, M. Rieke, M. Christopher, & F. Yusef-Zadeh.* 594, 294 (2003)

CHRISTOPOULOU, E. B. Temporal Behavior of the Evershed Effect. *A. A. Georgakilas & E. B. Christopoulou.* 584, 509 (2003)

Wavelet Analysis of Umbral Oscillations. *E. B. Christopoulou, A. Skodras, A. A. Georgakilas, & S. Koutchmy.* 591, 416 (2003)

CHU, MIKE. Probing the Reionization History of the Universe using the Cosmic Microwave Background Polarization. *Manoj Kaplinghat, Mike Chu, Zoltan Haiman, Gilbert P. Holder, Lloyd Knox, & Constantinos Skordis.* 583, 24 (2003)

Normal Parameters for an Analytic Description of the Cosmic Microwave Background Cosmological Parameter Likelihood. *Mike Chu, Manoj Kaplinghat, & Lloyd Knox.* 596, 725 (2003)

CHU, YOU-HUA. Far-Ultraviolet and Hα Spectroscopy of SNR 0057−7226 in the Small Magellanic Cloud H II Region N66. *Charles W. Danforth, Ravi Sankrit, William P. Blair, J. Christopher Howk, & You-Hua Chu.* 586, 1179 (2003)

Diffuse X-Ray Emission from the Quiescent Superbubble M17, the Omega Nebula. *Bryan C. Dunne, You-Hua Chu, C.-H. Rosie Chen, Justin D. Lowry, Leisa Townsley, Robert A. Gruendl, Martín A. Guerrero, & Margarita Rosado.* 590, 306 (2003)

10 MK Gas in M17 and the Rosette Nebula: X-Ray Flows in Galactic H II Regions. *Leisa K. Townsley, Eric D. Feigelson, Thierry Montmerle, Patrick S. Broos, You-Hua Chu, & Gordon P. Garmire.* 593, 874 (2003)

A Neutral Hydrogen Survey of the Large Magellanic Cloud: Aperture Synthesis and Multibeam Data Combined. *Sungeun Kim, Lister Staveley-Smith, Michael A. Dopita, Robert J. Sault, Youngung Lee, & You-Hua Chu.* 148, 473 (2003)

Hot Gas in the Circumstellar Bubble S308. *You-Hua Chu, Martín A. Guerrero, Robert A. Gruendl, Guillermo García-Segura, & Heinrich J. Wendker.* 599, 1189 (2003)

CHURAZOV, E. *XMM-Newton* Observations of the Perseus Cluster. I. The Temperature and Surface Brightness Structure. *E. Churazov, W. Forman, C. Jones, & H. Boehringer.* 590, 225 (2003)

X-Ray Emission from the Hot Interstellar Medium and Southwest Radio Lobe of the Nearby Radio Galaxy Centaurus A. *R. P. Kraft, S. E. Vázquez, W. R. Forman, C. Jones, S. S. Murray, M. J. Hardcastle, D. M. Worrall, & E. Churazov.* 592, 129 (2003)

CHURCH, S. E. See BENSON, B. A., et al. Peculiar Velocity Limits from Measurements of the Spectrum of the Sunyaev-Zeldovich Effect in Six Clusters of Galaxies.

See CRILL, B. P., et al. BOOMERANG: A Balloon-Borne Millimeter-Wave Telescope and Total Power Receiver for Mapping Anisotropy in the Cosmic Microwave Background.

CHURCH, SARAH. The Effect of Bandpass Uncertainities on Component Separation. *Sarah Church, Lloyd Knox, & Martin White.* 582, L63 (2003)

CHURCHILL, CHRISTOPHER W. A Quadruple-Phase Strong Mg II Absorber at $z \sim 0.9902$ toward PG 1634+706. *Jie Ding, Jane C. Charlton, Nicholas A. Bond, Stephanie G. Zonak, & Christopher W. Churchill.* 587, 551 (2003)

High-Resolution STIS/*Hubble Space Telescope* and HIRES/Keck Spectra of Three Weak Mg II Absorbers toward PG 1643+706. *Jane C. Charlton, Jie Ding, Stephanie G. Zonak, Christopher W. Churchill, Nicholas A. Bond, & Jane R. Rigby.* 589, 111 (2003)

The Multiphase Absorption Systems toward PG 1206+459. *Jie Ding, Jane C. Charlton, Christopher W. Churchill, & Christopher Palma.* 590, 746 (2003)

The Spatial, Ionization, and Kinematic Conditions of the $z = 1.39$ Damped Lyα Absorber in Q0957+561 A,B. *Christopher W. Churchill, Richard R. Mellon, Jane C. Charlton, & Steven S. Vogt.* 593, 203 (2003)

CHURCHWELL, E. Resolution of Distance Ambiguities of Inner Galaxy Massive Star Formation Regions. I. *C. Watson, E. Araya, M. Sewilo, E. Churchwell, P. Hofner, & S. Kurtz.* 587, 714 (2003)

CHURCHWELL, ED. H I Absorption toward Ultracompact H II Regions: Distances and Galactic Structure. *Vincent L. Fish, Mark J. Reid, David J. Wilner, & Ed Churchwell.* 587, 701 (2003)

Detection of a Near-Infrared Counterpart to the Massive Protostar G192.16−3.82. *Rémy Indebetouw, Christer Watson, Kelsey E. Johnson, Barbara Whitney, & Ed Churchwell.* 596, L83 (2003)

CHUSS, D. T. See NOVAK, G., et al. First Results from the Submillimeter Polarimeter for Antarctic Remote Observations: Evidence of Large-Scale Toroidal Magnetic Fields in the Galactic Center.

CHUSS, DAVID T. Magnetic Fields in Cool Clouds within the Central 50 Parsecs of the Galaxy. *David T. Chuss, Jacqueline A. Davidson, Jessie L. Dotson, C. Darren Dowell, Roger H. Hildebrand, Giles Novak, & John E. Vaillancourt.* 599, 1116 (2003)

CHUYCHAI, P. Trapping of Solar Energetic Particles by the Small-Scale Topology of Solar Wind Turbulence. *D. Ruffolo, W. H. Matthaeus, & P. Chuychai.* 597, L169 (2003)

CIARAVELLA, A. Ultraviolet Spectroscopy of Narrow Coronal Mass Ejections. *D. Dobrzycka, J. C. Raymond, D. A. Biesecker, J. Li, & A. Ciaravella.* 588, 586 (2003)

Far-Ultraviolet Spectra of Fast Coronal Mass Ejections Associated with X-Class Flares. *J. C. Raymond, A. Ciaravella, D. Dobrzycka, L. Strachan, Y.-K. Ko, & M. Uzzo.* 597, 1106 (2003)

Physical Parameters of the 2000 February 11 Coronal Mass Ejection: Ultraviolet Spectra versus White-Light Images. *A. Ciaravella, J. C. Raymond, A. van Ballegooijen, L. Strachan, A. Vourlidas, J. Li, J. Chen, & A. Panasyuk.* 597, 1118 (2003)

CIARDI, BENEDETTA. Probing beyond the Epoch of Hydrogen Reionization with 21 Centimeter Radiation. *Benedetta Ciardi & Piero Madau.* 596, 1 (2003)

CIARDI, DAVID R. Mid-Infrared Imaging of the Protostellar Binary L1448N IRS 3(A,B). *David R. Ciardi, Charles M. Telesco, Jonathan P. Williams, R. Scott Fisher, Chris Packham, Robert Piña, & James Radomski.* 585, 392 (2003)

CIARDULLO, ROBIN. Kinematics of Planetary Nebulae in M51's Tidal Debris. *Patrick R. Durrell, J. Christopher Mihos, John J. Feldmeier, George H. Jacoby, & Robin Ciardullo.* 582, 170 (2003)

Intracluster Planetary Nebulae in the Virgo Cluster. II. Imaging Catalog. *John J. Feldmeier, Robin Ciardullo, George H. Jacoby, & Patrick R. Durrell.* 145, 65 (2003)

CIMATTI, A. See GILLI, R., et al. Tracing the Large-Scale Structure in the *Chandra* Deep Field South.

See POLI, F., et al. The Evolution of the Galaxy Luminosity Function in the Rest-Frame Blue Band up to $z = 3.5$.

CIPRINI, S. See BÖTTCHER, M., et al. Coordinated Multiwavelength Observations of BL Lacertae in 2000.

CIROI, S. Analysis of the Interaction Effects in the Southern Galaxy Pair Tol 1238−364 and ESO 381-G009. *S. Temporin, S. Ciroi, P. Rafanelli, M. Radovich, J. Vennik, G. M. Richter, & K. Birkle.* 148, 353 (2003)

CIRTAIN, J. W. The Effect of Background Subtraction on the Temperature of EIT Coronal Loops. *J. T. Schmelz, J. E. Beene, K. Nasraoui, H. T. Blevins, P. C. H. Martens, & J. W. Cirtain.* 599, 604 (2003)

CISNEROS, C. See AGUILAR, A., et al. Absolute Photoionization Cross Section Measurements of O II Ions from 29.7 to 46.2 eV.

CLAMPIN, M. See TRAN, H. D., et al. Advanced Camera for Surveys Observations of Young Star Clusters in the Interacting Galaxy UGC 10214.

See BOUWENS, R. J., et al. Star Formation at $z \sim 6$: i-Dropouts in the Advanced Camera for Surveys Guaranteed Time Observation Fields.

See BLAKESLEE, JOHN P., et al. Advanced Camera for Surveys Photometry of the Cluster RDCS 1252.9−2927: The Color-Magnitude Relation at $z = 1.24$.

See MEURER, GERHARDT R., et al. The Discovery of Globular Clusters in the Protospiral Galaxy NGC 2915: Implications for Hierarchical Galaxy Evolution.

CLAMPIN, MARK. See BLAKESLEE, JOHN P., et al. Discovery of Two Distant Type Ia Supernovae in the Hubble Deep Field–North with the Advanced Camera for Surveys.

CLARET, A. Fundamental Properties and Distances of Large Magellanic Cloud Eclipsing Binaries. IV. HV 5936. *E. L. Fitzpatrick, I. Ribas, E. F. Guinan, F. P. Maloney, & A. Claret.* 587, 685 (2003)

CLARKE, DAVID A. Three-Dimensional Simulations of Jets from Keplerian Disks: Self-Regulatory Stability. *Rachid Ouyed, David A. Clarke, & Ralph E. Pudritz.* 582, 292 (2003)

CLARKE, T. E. Are the Faraday Rotating Magnetic Fields Local to Intracluster Radio Galaxies? *Torsten A. Ensslin, Corina Vogt, T. E. Clarke, & Greg B. Taylor.* 597, 870 (2003)

CLAUSSEN, M. J. The Sizes of OH (1720 MHz) Supernova Remnant Masers: MERLIN and Very Long Baseline Array Observations of IC 443. *I. M. Hoffman, W. M. Goss, C. L. Brogan, M. J. Claussen, & A. M. S. Richards.* 583, 272 (2003)

CLAUSSEN, MARK J. Water Maser Survey toward Low-Mass Young Stellar Objects in the Northern Sky with the Nobeyama 45 Meter Telescope and the Very Large Array. *Ray S. Furuya, Yoshimi Kitamura, Alwyn Wooten, Mark J. Claussen, & Ryohei Kawabe.* 144, 71 (2003)

The Binary Jet in L1551 IRS 5. *Luis F. Rodríguez, Alicia Porras, Mark J. Claussen, Salvador Curiel, David J. Wilner, & Paul T. P. Ho.* 586, L137 (2003)

CLAY, R. W. See BIGNALL, H. E., et al. Rapid Variability and Annual Cycles in the Characteristic Timescale of the Scintillating Source PKS 1257−326.

See ENOMOTO, R., et al. Search for TeV Gamma Rays from SN 1987A in 2001.

CLAYTON, DONALD D. Supernova Reverse Shocks: SiC Growth and Isotopic Composition. *Ethan A.-N. Deneault, Donald D. Clayton, & Alexander Heger.* 594, 312 (2003)

A Presolar Galactic Merger Spawned the SiC-Grain Mainstream. *Donald D. Clayton.* 598, 313 (2003)

CLAYTON, GEOFFREY C. Dust Grain Size Distributions from MRN to MEM. *Geoffrey C. Clayton, Michael J. Wolff, Ulysses J. Sofia, K. D. Gordon, & K. A. Misselt.* 588, 871 (2003)

The Role of Polycyclic Aromatic Hydrocarbons in Ultraviolet Extinction. I. Probing Small Molecular Polycyclic Aromatic Hydrocarbons. *Geoffrey C. Clayton, Karl D. Gordon, F. Salama, L. J. Allamandola, Peter G. Martin, T. P. Snow, D. C. B. Whittet, A. N. Witt, & Michael J. Wolff.* 592, 947 (2003)

A Quantitative Comparison of Small Magellanic Cloud, Large Magellanic Cloud, and Milky Way Ultraviolet to Near-Infrared Extinction Curves. *Karl D. Gordon, Geoffrey C. Clayton, K. A. Misselt, Arlo U. Landolt, & Michael J. Wolff.* 594, 279 (2003)

Winds in R Coronae Borealis Stars. *Geoffrey C. Clayton, T. R. Geballe, & Luciana Bianchi.* 595, 412 (2003)

Small Magellanic Cloud–Type Interstellar Dust in the Milky Way. *Lynne A. Valencic, Geoffrey C. Clayton, Karl Gordon, & Tracy L. Smith.* 598, 369 (2003)

CLEMENS, D. P. Resolving the Kinematic Distance Ambiguity toward Galactic H II Regions. *Michal A. Kolpak, James M. Jackson, T. M. Bania, D. P. Clemens, & John M. Dickey.* 582, 756 (2003)

CLEMENS, DAN P. See KRAEMER, KATHLEEN E., et al. Five Star-forming Cores in the Galactic Ring Survey: A Mid-Infrared Study.

CLEMENS, J. C. High-Resolution Spectroscopy of the Pulsating White Dwarf G29-38. *Susan E. Thompson, J. C. Clemens, M. H. van Kerkwijk, & D. Koester.* 589, 921 (2003)

CLEMENT, D. New Laboratory Spectra of Isolated β-SiC Nanoparticles: Comparison with Spectra Taken by the *Infrared Space Observatory*. *D. Clément, H. Mutschke, R. Klein, & Th. Henning.* 594, 642 (2003)

CLEMENTINI, GISELLA. RR Lyrae and Short-Period Variable Stars in the Dwarf Irregular Galaxy NGC 6822. *Gisella Clementini, Enrico V. Held, Lara Baldacci, & Luca Rizzi.* 588, L85 (2003)

CLEMENTS, D. L. See WEBB, T. M., et al. The Canada–United Kingdom Deep Submillimeter Survey. V. The Submillimeter Properties of Lyman Break Galaxies.

See WEBB, T. M., et al. The Canada-UK Deep Submillimeter Survey. VI. The 3 Hour Field.

See MCDOWELL, J. C., et al. *Chandra* Observations of Extended X-Ray Emission in Arp 220.

The Canada-UK Deep Submillimeter Survey. VII. Optical and Near-Infrared Identifications for the 14 Hour Field. *T. M. A. Webb, S. J. Lilly, D. L. Clements, S. Eales, M. Yun, M. Brodwin, L. Dunne, & W. K. Gear.* 597, 680 (2003)

CLENET, Y. See GENZEL, R., et al. The Stellar Cusp around the Supermassive Black Hole in the Galactic Center.

CLINE, KELLY S. On the Formation of Magnetic Structures by the Combined Action of Velocity Shear and Magnetic Boyancy. *Kelly S. Cline, Nicholas H. Brummell, & Fausto Cattaneo.* 588, 630 (2003)

Dynamo Action Driven by Shear and Magnetic Buoyancy. *Kelly S. Cline, Nicholas H. Brummell, & Fausto Cattaneo.* 599, 1449 (2003)

CLINE, T. See PRICE, P. A., et al. Discovery of GRB 020405 and Its Late Red Bump.

Observations of Giant Outbursts from Cygnus X-1. *S. Golenetskii, R. Aptekar, D. Frederiks, E. Mazets, V. Palshin, K. Hurley, T. Cline, & B. Stern.* 596, 1113 (2003)

See CREW, G. B., et al. *HETE-2* Localization and Observation of the Bright, X-Ray–rich Gamma-Ray Burst GRB 021211.

CLIVER, E. W. Coronal Mass Ejections, the Tail of the Solar Wind Magnetic Field Distribution, and 11 Year Cosmic-Ray Modulation at 1 AU. *E. W. Cliver, A. G. Ling, & I. G. Richardson.* 592, 574 (2003)

CLIVER, EDWARD W. Low Coronal Signatures of Large Solar Energetic Particle Events. *Nariaki V. Nitta, Edward W. Cliver, & Allan J. Tylka.* 586, L103 (2003)

CLOCCHIATTI, ALEJANDRO. See TONRY, JOHN L., et al. Cosmological Results from High-z Supernovae.

CLOSE, L. M. Near-Infrared Adaptive Optics Imaging of the Embedded Cluster NGC 2024. *Tracy L. Beck, M. Simon, & L. M. Close.* 583, 358 (2003)

CLOSE, LAIRD M. Discovery of a Tight Brown Dwarf Companion to the Low-Mass Star LHS 2397a. *Melanie Freed, Laird M. Close, & Nick Siegler.* 584, 453 (2003)

Detection of Nine M8.0-L0.5 Binaries: The Very Low-Mass Binary Population and Its Implications for Brown Dwarf and Very Low Mass Star Formation. *Laird M. Close, Nick Siegler, Melanie Freed, & Beth Biller.* 587, 407 (2003)

Mid-Infrared Imaging of the Post–Asymptotic Giant Branch Star AC Herculis with the Multiple Mirror Telescope Adaptive Optics System. *Laird M. Close, Beth Biller, William F. Hoffman, Phil M. Hinz, John H. Bieging, Francois Wildi, Michael Lloyd-Hart, Guido Brusa, Don Fisher, Doug Miller, & Roger Angel.* 598, L35 (2003)

An Adaptive Optics Survey of M6.0–M7.5 Stars: Discovery of Three Very Low Mass Binary Systems Including Two Probably Hyades Members. *Nick Siegler, Laird M. Close, Eric E. Mamajek, & Melanie Freed.* 598, 1265 (2003)

High-Resolution Images of Orbital Motion in the Trapezium Cluster: First Scientific Results from the Multiple Mirror Telescope Deformable Secondary Mirror Adaptive Optics System. *Laird M. Close, Francois Wildi, Michael Lloyd-Hart, Guido Brusa, Don Fisher, Doug Miller, Armando Riccardi, Piero Salinari, Donald McCarthy, Roger Angel, Rich Allen, H. M. Martin, Richard G. Sosa, Manny Montoya, Matt Rademacher, Mario Rascon, Dylan Curley, Nick Siegler, & Wolfgang J. Duschl.* 599, 537 (2003)

CLOWE, DOUG. The Mass, Baryonic Fraction, and X-Ray Temperature of the Luminous, High-Redshift Cluster of Galaxies MS 0451.6−0305. *Megan Donahue, Jessica A. Gaskin, Sandeep K. Patel, Marshall Joy, Doug Clowe, & John P. Hughes.* 598, 190 (2003)

COBLE, K. Cosmic Microwave Background Anisotropy Measurement from Python V. *K. Coble, S. Dodelson, M. Dragovan, K. Ganga, L. Knox, J. Kovac, B. Ratra, & T. Souradeep.* 584, 585 (2003)

See CRILL, B. P., et al. BOOMERANG: A Balloon-Borne Millimeter-Wave Telescope and Total Power Receiver for Mapping Anisotropy in the Cosmic Microwave Background.

COBLE, KIM. Galactic Foreground Constraints from the Python V Cosmic Microwave Background Anisotropy Data. *Pia Mukherjee, Kim Coble, Mark Dragovan, Ken Ganga, John Kovac, Bharat Ratra, & Tarun Souradeep.* 592, 692 (2003)

COCHRAN, WILLIAM D. A Planetary Companion to γ Cephei A. *Artie P. Hatzes, William D. Cochran, Michael Endl, Barbara McArthur, Diane B. Paulson, Gordon A. H. Walker, Bruce Campbell, & Stephenson Yang.* 599, 1383 (2003)

COE, M. J. XTE J1946+271 = GRO J1944+26: An Enigmatic Be/X-Ray Binary. *Colleen A. Wilson, Mark H. Finger, M. J. Coe, & Ignacio Negueruela.* 584, 996 (2003)

COGNARD, I. A 3 Year Long Extreme Scattering Event in the Direction of the Millisecond Pulsar J1643−1224. *V. Maitia, J.-F. Lestrade, & I. Cognard.* 582, 972 (2003)

COHEN, A. S. The Low-Frequency Radio Counterpart of the *XMM* Large-Scale Structure Survey. *A. S. Cohen, H. J. A. Roettgering, N. E. Kassim, W. D. Cotton, R. A. Perley, R. Wilman, P. Best, M. Pierre, M. Birkinshaw, M. Bremer, & A. Zanichelli.* 591, 640 (2003)

COHEN, C. M. S. See SLOCUM, P. L., et al. Elemental Fractionation in Small Solar Energetic Particle Events.

COHEN, DAVID H. High-Resolution *Chandra* Spectroscopy of τ Scorpii: A Narrow-Line X-Ray Spectrum from a Hot Star. *David H. Cohen, Geneviève E. de Messières, Joseph J. MacFarlane, Nathan A. Miller, Joseph P. Cassinelli, Stanley P. Owocki, & Duane A. Liedahl.* 586, 495 (2003)

X-Ray Emission-Line Profile Modeling of O Stars: Fitting a Spherically Symmetric Analytic Wind-Shock Model to the *Chandra* Spectrum of ζ Puppis. *Roban H. Kramer, David H. Cohen, & Stanley P. Owocki.* 592, 532 (2003)

COHEN, J. G. Weak Lensing Discovery and Tomography of a Cluster at $z = 0.68$. *D. Wittman, V. E. Margoniner, J. A. Tyson, J. G. Cohen, A. C. Becker, & I. P. Dell'Antonio.* 597, 218 (2003)

COHEN, JUDITH G. The Redshift of the Lensed Object in the Einstein Ring B0218+357. *Judith G. Cohen, Charles R. Lawrence, & Roger D. Blandford.* 583, 67 (2003)

Abundance Analysis of HE 2146−1247, a Star with Extremely Enhanced Neutron Capture Elements. *Judith G. Cohen, Norbert Christlieb, Y.-Z. Qian, & G. J. Wasserburg.* 588, 1082 (2003)

Dynamics of the Globular Cluster System Associated with M49 (NGC 4472): Cluster Orbital Properties and the Distribution of Dark Matter. *Patrick Côté, Dean E. McLaughlin, Judith G. Cohen, & John P. Blakeslee.* 591, 850 (2003)

The Ages and Abundances of a Sample of Globular Clusters in M49 (NGC 4472). *Judith G. Cohen, J. P. Blakeslee, & P. Côté.* 592, 866 (2003)

Star Formation and X-Ray Emission in Distant Star-Forming Galaxies. *Judith G. Cohen.* 598, 288 (2003)

COHEN, M. H. 4C +12.50: A Superluminal Precessing Jet in the Recent Merger System IRAS 13451+1232. *M. L. Lister, K. I. Kellermann, R. C. Vermeulen, M. H. Cohen, J. A. Zensus, & E. Ros.* 584, 135 (2003)

Jet Collimation in Action: Realignment on Kiloparsec Scales in 3C 279. *D. C. Homan, M. L. Lister, K. I. Kellermann, M. H. Cohen, E. Ros, J. A. Zensus, M. Kadler, & R. C. Vermeulen.* 589, L9 (2003)

COHEN, MARSHALL H. See BARTH, AARON J., et al. Optical Spectropolarimetry of the GRB 020813 Afterglow.

COHEN, MARTIN. The Large-Scale Bipolar Wind in the Galactic Center. *Joss Bland-Hawthorn & Martin Cohen.* 582, 246 (2003)

Two-dimensional Radiative Transfer in Protostellar Envelopes. II. An Evolutionary Sequence. *Barbara A. Whitney, Kenneth Wood, J. E. Bjorkman, & Martin Cohen.* 598, 1079 (2003)

Cohen, R. See Colavita, M., et al. Observations of DG Tauri with the Keck Interferometer.

Cohen, Roger E. An Unusual Eclipse of a Pre–Main-Sequence Star in IC 348. *William Herbst, Roger E. Cohen, & Eric C. Williams.* 596, L243 (2003)

Cohen, Seth H. The Infrared Counterparts of the Optically Unidentified Chandra Deep Field–South 1 Ms Sources. *Haojing Yan, Rogier A. Windhorst, Huub J. A. Röttgering, Seth H. Cohen, Stephen C. Odewahn, Scott C. Chapman, & William C. Keel.* 585, 67 (2003)

Searching for $z \simeq 6$ Objects with the *Hubble Space Telescope* Advanced Camera for Surveys: Preliminary Analysis of a Deep Parallel Field. *Haojing Yan, Rogier A. Windhorst, & Seth H. Cohen.* 585, L93 (2003)

Cohn, H. N. The Dynamics of M15: Observations of the Velocity Dispersion Profile and Fokker-Planck Models: Addendum (ApJ, 481, 267 [1997]). *J. D. Dull, H. N. Cohn, P. M. Lugger, B. W. Murphy, P. O. Seitzer, P. J. Callanan, R. G. M. Rutten, & P. A. Charles.* 585, 598 (2003) (Orig. paper in 481, 267 (1997))

A *Chandra* X-Ray Study of the Dense Globular Cluster Terzan 5. *C. O. Heinke, P. D. Edmonds, J. E. Grindlay, D. A. Lloyd, H. N. Cohn, & P. M. Lugger.* 590, 809 (2003)

Analysis of the Quiescent Low-Mass X-Ray Binary Populaton in Galactic Globular Clusters. *C. O. Heinke, J. E. Grindlay, P. M. Lugger, H. N. Cohn, P. D. Edmonds, D. A. Lloyd, & A. M. Cool.* 598, 501 (2003)

A *Chandra* X-Ray Study of the Globular Cluster M80. *C. O. Heinke, J. E. Grindlay, P. M. Lugger, H. N. Cohn, P. D. Edmonds, D. A. Lloyd, & S. S. Murray.* 598, 516 (2003)

Coil, Alison L. See Tonry, John L., et al. Cosmological Results from High-z Supernovae.

See Madgwick, Darren S., et al. The DEEP2 Galaxy Redshift Survey: Spectral Classification of Galaxies at $z \sim 1$.

Colafrancesco, S. See Siemiginowska, Aneta, et al. *Chandra* Discovery of an X-Ray Jet and Extended X-Ray Structure in $z = 0.63$ Quasar B2 0738+313.

See Battistelli, E. S., et al. Triple Experiment Spectrum of the Sunyaev-Zel'dovich Effect in the Coma Cluster: H_0.

Colafrancesco, Sergio. A *BeppoSAX* Observation of the IC 1262 Galaxy Cluster. *Daniel S. Hudson, Mark J. Henriksen, & Sergio Colafrancesco.* 583, 706 (2003)

Colas, F. A Search for Small Kuiper Belt Objects by Stellar Occultations. *F. Roques, M. Moncuquet, N. Lavillonière, M. Auvergne, M. Chevreton, F. Colas, & J. Lecacheux.* 594, L63 (2003)

Colavita, M. Observations of DG Tauri with the Keck Interferometer. *M. Colavita, R. Akeson, P. Wizinowich, M. Shao, S. Acton, J. Beletic, J. Bell, J. Berlin, A. Boden, A. Booth, R. Boutell, F. Chaffee, D. Chan, J. Chock, R. Cohen, S. Crawford, M. Creech-Eakman, G. Eychaner, C. Felizardo, J. Gathright, G. Hardy, H. Henderson, J. Herstein, M. Hess, E. Hovland, M. Hrynevych, R. Johnson, J. Kelley, R. Kendrick, C. Koresko, P. Kurpis, D. Le Mignant, H. Lewis, E. Ligon, W. Lupton, D. McBride, B. Mennesson, R. Millan-Gabet, J. Monnier, J. Moore, C. Nance, C. Neyman, A. Niessner, D. Palmer, L. Reder, A. Rudeen, T. Saloga, A. Sargent, E. Serabyn, R. Smythe, P. Stomski, K. Summers, M. Swain, P. Swanson, R. Thompson, K. Tsubota, A. Tumminello, G. van Belle, G. Vasisht, J. Vause, J. Walker, K. Wallace, & U. Wehmeier.* 592, L83 (2003)

See Swain, Mark, et al. Interferometer Observations of Subparsec-Scale Infrared Emission in the Nucleus of NGC 4151.

Cole, Andrew A. Deep *Hubble Space Telescope* Imaging of IC 1613. II. The Star Formation History. *Evan D. Skillman, Eline Tolstoy, Andrew A. Cole, Andrew E. Dolphin, Abhijit Saha, J. S. Gallagher, R. C. Dohm-Palmer, & Mario Mateo.* 596, 253 (2003)

Cole, S. What Shapes the Luminosity Function of Galaxies? *A. J. Benson, R. G. Bower, C. S. Frenk, C. G. Lacey, C. M. Baugh, & S. Cole.* 599, 38 (2003)

Cole, Shaun. See Berlind, Andreas A., et al. The Halo Occupation Distribution and the Physics of Galaxy Formation.

Coles, Peter. Universal Behavior of Phase Correlations in Nonlinear Gravitational Clustering. *Peter Watts, Peter Coles, & Adrian Melott.* 589, L61 (2003)

Colgate, Stirling A. Cosmological Mestel Disks and the Rossby Vortex Instability: The Origin of Supermassive Black Holes. *Stirling A. Colgate, Renyue Cen, Hui Li, Nathan Currier, & Michael S. Warren.* 598, L7 (2003)

Rotation of a Pulsed Jet, or Plume in a Rotation Flow: A Source of Helicity for an α-ω Astrophysical Dynamo. *Howard F. Beckley, Stirling A. Colgate, Van D. Romero, & Ragnar Ferrel.* 599, 702 (2003)

Colín, Pedro. The Effects of Non-Gaussian Initial Conditions on the Structure and Substructure of Cold Dark Matter Halos. *Vladimir Avila-Reese, Pedro Colín, Gabriella Piccinelli, & Claudio Firmani.* 598, 36 (2003)

Colina, L. See McDowell, J. C., et al. *Chandra* Observations of Extended X-Ray Emission in Arp 220.

Nuclear Activity and Massive Star Formation in the Low-Luminosity Active Galactic Nucleus NGC 4303: *Chandra* X-Ray Observations. *E. Jiménez-Bailón, M. Santos-Lleó, J. M. Mas-Hesse, M. Guainazzi, L. Colina, M. Cerviño, & Rosa M. González Delgado.* 593, 127 (2003)

Colina, Luis. Detection of a Super–Star Cluster as the Ionizing Source in the Low-Luminosity Active Galactic Nucleus NGC 4303: Erratum (ApJ, 579, 545 [2002]). *Luis Colina, Rosa Gonzalez Delgado, J. Miguel Mas-Hesse, Claus Leitherer, & Elena Jiménez Bailón.* 582, 1269 (2003) (Orig. paper in 579, 545 (2002))

Detection of a Super–Star Cluster as the Ionizing Source in the Low-Luminosity Active Galactic Nucleus NGC 4303: Erratum (ApJ, 582, 1269 [2003]). *Luis Colina, Rosa Gonzalez-Delgado, J. Miguel Mas-Hesse, Claus Leitherer, & Elena Jiménez-Bailón.* 586, 692 (2003) (Orig. paper in 582, 1269 (2003))

INTEGRAL Spectroscopy of IRAS 17208−0014: Implications for the Evolutionary Scenarios of Ultraluminous Infrared Galaxies. *Santiago Arribas & Luis Colina.* 591, 791 (2003)

Coll, Patrice. Oxirane: An Exotic Oxygenated Organic Compound in Titan? *Patrice Coll, Jean-Michel Bernard, Rafael Navarro-González, & François Raulin.* 598, 700 (2003)

Collados, M. Magnetoacoustic Waves in Sunspots. *E. V. Khomenko, M. Collados, & L. R. Bellot Rubio.* 588, 606 (2003)

Colless, Matthew. See Mobasher, Bahram, et al. A Photometric and Spectroscopic Study of Dwarf and Giant Galaxies in the Coma Cluster. IV. The Luminosity Function.

Colley, Wesley N. Around-the-Clock Observations of the Q9057+561A,B Gravitationally Lensed Quasar. II. Results for the Second Observing Season. *Wesley N. Colley, Rudolph E. Schild, Cristina Abajas, David Alcalde, Zeki Aslan, Ilfan Bikmaev, Vahram Chavushyan, Luis Chinarro, Jean-Philippe Cournoyer, Richard Crowe, Vladimir Dudinov, Anna Kathinka Dalland Evans, Young-Beom Jeon, Luis J. Goicoechea, Orhun Golbasi, Irek Khamitov, Kjetil Kjernsmo, Hyun Ju Lee, Jonghwan Lee, Ki Won Lee, Myung Gyoon Lee, Omar Lopez-Cruz, Evenvio Mediavilla, Anthony F. J. Moffat, Raul Mujica, Aurora Ullan, José Muñoz, Alexander Oscoz, Myeong-Gu Park, Norman Purves, Oyvind Sæanum, Nail Sakhibullin, Miquel Serra-Ricart, Igor Sinelnikov, Rolf Stabell, Alan Stockton, Jan Teuber, Roy Thompson, Hwa-Sung Woo, & Alexander Zheleznyak.* 587, 71 (2003)

Rapid Brightness Fluctuations in Q0957+561A,B: Microlensing or Seeing? *Wesley N. Colley, Irwin I. Shapiro, Jennifer Pegg, Edwin L. Turner, Tomislav Kundić, Karen Loomis, N. C. Hastings, & Russet McMillan.* 588, 711 (2003)

A Rapid Microlensing Event in the Q0957+561A, B Gravitational Lens System. *Wesley N. Colley & Rudolph E. Schild.* 594, 97 (2003)

Collings, M. P. Carbon Monoxide Entrapment in Interstellar Ice Analogs. *M. P. Collings, J. W. Dever, H. J. Fraser, M. R. S. McCoustra, & D. A. Williams.* 583, 1058 (2003)

Collins, Benjamin F. *Chandra* X-Ray Imaging Spectroscopy of the Young Supernova Remnant Kesteven 75. *David J. Helfand, Benjamin F. Collins, & E. V. Gotthelf.* 582, 783 (2003)

Collins, C. The *ROSAT* All-Sky Survey: A Catalog of Clusters of Galaxies in a Region of 1 Steradian around the South Galactic Pole: Erratum (ApJS, 140, 239 [2002]). *R. Cruddace, W. Voges, H. Böhringer, C. Collins, D. Yentis, & H. MacGillivray.* 144, 299 (2003) (Orig. paper in 140, 239 (2002))

Collins, Joseph A. A Survey of *Far Ultraviolet Spectroscopic Explorer* and *Hubble Space Telescope* Sight Lines through High-Velocity Cloud Complex C. *Joseph A. Collins, J. Michael Shull, & Mark L. Giroux.* 585, 336 (2003)

Collins, Nicholas R. Emission-Line Galaxies in the STIS Parallel Survey. II. Star Formation Density. *Harry I. Teplitz, Nicholas R. Collins, Jonathan P. Gardner, Robert S. Hill, & Jason Rhodes.* 589, 704 (2003)

Emission-Line Galaxies in the Space Telescope Imaging Spectrograph Parallel Survey. I. Observations and Data Analysis. *Harry I. Teplitz, Nicholas R. Collins, Jonathan P. Gardner, Robert S. Hill, Sara R. Heap, Don J. Lindler, Jason Rhodes, & Bruce E. Woodgate.* 146, 209 (2003)

COLLMAR, W. See GRANDI, P., et al. *BeppoSAX* Observations of Centaurus A: The Hard Continuum and the Iron-Line Feature.

COLLOBERT, MAELA. The Magnesium–Velocity Dispersion Relation and the Genesis of Early-Type Galaxies. *Guy Worthey & Maela Collobert.* 586, 17 (2003)

COLOMBI, STÉPHANE. The Clustering of Intergalactic Metals. *Christophe Pichon, Evan Scannapieco, Bastien Aracil, Patrick Petitjean, Dominique Aubert, Jacqueline Bergeron, & Stéphane Colombi.* 597, L97 (2003)

COLÓN, C. Transitions from Autoionized Single-Ionized Tin States: A Theoretical Study of the $5s5p\ (^3P^o)\ nl$ (nl = $5d$, $6s$) Levels of Sn II. *A. Alonso-Medina, C. Colón, & C. Herrán Martínez.* 595, 550 (2003)

COLPI, MONICA. Probing the Presence of a Single or Binary Black Hole in the Globular Cluster NGC 6752 with Pulsar Dynamics. *Monica Colpi, Michela Mapelli, & Andrea Possenti.* 599, 1260 (2003)

COMASTRI, A. The Nuclear Accretion in the FR I Radio Galaxy IC 4296 from *Chandra* and Very Long Baseline Array Observations. *S. Pellegrini, T. Venturi, A. Comastri, G. Fabbiano, F. Fiore, C. Vignali, R. Morganti, & G. Trinchieri.* 585, 677 (2003)

COMBES, F. Polar Ring Galaxies and the Tully-Fisher Relation: Implications for the Dark Halo Shape. *E. Iodice, M. Arnaboldi, F. Bournaud, F. Combes, L. S. Sparke, W. van Driel, & M. Capaccioli.* 585, 730 (2003)

COMBI, J. A. Discovery of a New Radio Galaxy within the Error Box of the Unidentified Gamma-Ray Source 3EG J1735−1500. *J. A. Combi, G. E. Romero, J. M. Paredes, D. F. Torres, & M. Ribó.* 588, 731 (2003)

COMBI, JORGE A. See BUTT, YOUSAF M., et al. *Chandra*/Very Large Array Follow-up of TeV J2032+4131, the Only Unidentified TeV Gamma-Ray Source.

COMITO, CLAUDIO. First Detection of Vibrationally Excited HNC in Space. *Peter Schilke, Claudio Comito, & Sven Thorwirth.* 582, L101 (2003)

CONDON, J. J. Nascent Starbursts in Synchrotron-deficient Galaxies with Hot Dust. *H. Roussel, G. Helou, R. Beck, J. J. Condon, A. Bosma, K. Matthews, & T. H. Jarrett.* 593, 733 (2003)

Physical Conditions and Star Formation Activity in the Intragroup Medium of Stephan's Quintet. *C. K. Xu, N. Lu, J. J. Condon, M. Dopita, & R. J. Tuffs.* 595, 665 (2003)

CONLEY, A. See KNOP, R. A., et al. New Constraints on Ω_M, Ω_Λ, and w from an Independent Set of 11 High-Redshift Supernovae Observed with the *Hubble Space Telescope*.

CONNAUGHTON, V. See AKERLOF, C. W., et al. A Search for Correlations of TeV Gamma Rays with Ultra–High-Energy Cosmic Rays.

CONNELLY, ANDREW. See SZALAY, ALEXANDER S., et al. Karhunen-Loève Estimation of the Power Spectrum Parameters from the Angular Distribution of Galaxies in Early Sloan Digital Sky Survey Data.

CONNOLLY, A. J. See HOPKINS, A. M., et al. Star Formation Rate Indicators in the Sloan Digital Sky Survey.

CONNOLLY, ANDREW. See GLAZEBROOK, KARL, et al. The Sloan Digital Sky Survey: The Cosmic Spectrum and Star Formation History.

CONNOLLY, ANDREW J. See GOMEZ, PERCY L., et al. Galaxy Star Formation as a Function of Environment in the Early Data Release of the Sloan Digital Sky Survey.

See EISENSTEIN, DANIEL J., et al. Average Spectra of Massive Galaxies in the Sloan Digital Sky Survey.

See BLANTON, MICHAEL R., et al. The Galaxy Luminosity Function and Luminosity Density at Redshift $z = 0.1$.

See BUDAVÁRI, TAMÁS, et al. Angular Clustering with Photometric Redshifts in the Sloan Digital Sky Survey: Bimodality in the Clustering Properties of Galaxies.

CONRAD, J. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

CONSELICE, C. *Hubble Space Telescope* Images of Submillimeter Sources: Large Irregular Galaxies at High Redshift. *S. C. Chapman, R. Windhorst, S. Odewahn, H. Yan, & C. Conselice.* 599, 92 (2003)

CONSELICE, CHRISTOPHER J. See ESKRIDGE, PAUL B., et al. Ultraviolet-Optical Pixel Maps of Face-on Spiral Galaxies: Clues for Dynamics and Star Formation Histories.

Galaxy Populations and Evolution in Clusters. IV. Deep H I Observations of Dwarf Elliptical Galaxies in the Virgo Cluster. *Christopher J. Conselice, Karen O'Neil, John S. Gallagher, & Rosemary F. G. Wyse.* 591, 167 (2003)

The Relationship between Stellar Light Distributions of Galaxies and Their Formation Histories. *Christopher J. Conselice.* 147, 1 (2003)

Evidence for a Major Merger Origin of High Redshift Sub-millimeter Galaxies. *Christopher J. Conselice, Scott C. Chapman, & Rogier A. Windhorst.* 596, L5 (2003)

The Internal Ultraviolet–Optical Color Dispersion: Quantifying the Morphological K-Correction. *Casey Papovich, Mauro Giavalisco, Mark Dickinson, Christopher J. Conselice, & Henry C. Ferguson.* 598, 827 (2003)

See MADGWICK, DARREN S., et al. The DEEP2 Galaxy Redshift Survey: Spectral Classification of Galaxies at $z \sim 1$.

CONSOLMAGNO, G. J., S.J. Color Patterns in the Kuiper Belt: A Possible Primordial Origin. *S. C. Tegler, W. Romanishin, & G. J. Consolmagno, S.J.* 599, L49 (2003)

CONSTANTIN, A. Quasar Elemental Abundances at High Redshifts. *M. Dietrich, F. Hamann, J. C. Shields, A. Constantin, J. Heidt, K. Jäger, M. Vestergaard, & S. J. Wagner.* 589, 722 (2003)

CONTALDI, C. R. See MASON, B. S., et al. The Anisotropy of the Microwave Background to l = 3500: Deep Field Observatons with the Cosmic Background Imager.

See PEARSON, T. J., et al. The Anisotropy of the Microwave Background to l = 3500: Mosaic Observations with the Cosmic Background Imager.

See MYERS, S. T., et al. A Fast Gridded Method for the Estimation of the Power Spectrum of the Cosmic Microwave Background from Interferometer Data with Application to the Cosmic Background Imager.

See SIEVERS, J. L., et al. Cosmological Parameters from Cosmic Background Imager Observations and Comparisons with BOOMERANG, DASI, and MAXIMA.

See GOLDSTEIN, J. H., et al. Estimates of Cosmological Parameters Using the Cosmic Microwave Background Angular Power Spectrum of ACBAR.

See RUHL, J. E., et al. Improved Measurement of the Angular Power Spectrum of Temperature Anisotropy in the Cosmic Microwave Background from Two New Analyses of BOOMERANG Observations.

CONTOPOULOS, JOHN. Interchange Method in Compressible Magnetized Couette Flow: Magnetorotational and Magnetoconvective Instabilities. *Dimitris M. Christodoulou, John Contopoulos, & Demosthenes Kazanas.* 586, 372 (2003)

COOK, JAMES N. Magnetic Braking and Viscous Damping of Differential Rotation in Cylindrical Stars. *James N. Cook, Stuart L. Shapiro, & Branson C. Stephens.* 599, 1272 (2003)

COOK, K. H. See BERSIER, D., et al. The Unusual Optical Afterglow of the Gamma-Ray Burst GRB 021004: Color Changes and Short-Timescale Variability.

A Search for Stellar Obscuration Events Due to Dark Clouds. *A. J. Drake & K. H. Cook.* 589, 281 (2003)

See ALCOCK, C., et al. The MACHO Project Large Magellanic Cloud Variable Star Inventory. XI. Frequency Analysis of the Fundamental Mode RR Lyrae Stars.

COOK, T. A. SPINR—a Wide-Field Ultraviolet Spectral Imaging System. *T. A. Cook, V. J. Gsell, J. Golub, & S. Chakrabarti.* 585, 1177 (2003)

COOKE, JEFF. The ESI/Keck II Damped Lyα Abundance Database. *Jason X. Prochaska, Eric Gawiser, Arthur M. Wolfe, Jeff Cooke, & Dawn Gelino.* 147, 227 (2003)

COOKSY, A. L. Rotational Spectra of the Nitrogen-Sulfur Carbon NC_nS, n = 1–7. *M. C. McCarthy, A. L. Cooksy, S. Mohamed, V. D. Gordon, & P. Thaddeus.* 144, 287 (2003)

COOL, A. M. Analysis of the Quiescent Low-Mass X-Ray Binary Populaton in Galactic Globular Clusters. *C. O. Heinke, J. E. Grindlay, P. M. Lugger, H. N. Cohn, P. D. Edmonds, D. A. Lloyd, & A. M. Cool.* 598, 501 (2003)

COOL, ADRIENNE M. A Probable Dwarf Nova Outburst in the Core of the Globular Cluster M22. *Jay Anderson, Adrienne M. Cool, & Ivan R. King.* 597, L137 (2003)

COOL, R. J. Expansion of the R4 H_2O Maser Arc near Cepheus A HW2. *J. F. Gallimore, R. J. Cool, M. D. Thornley, & J. McMullin.* 586, 306 (2003)

COOLEY, J. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

COOPER, C. S. On the Indirect Detection of Sodium in the Atmosphere of the Planetary Companion to HD 209458. *J. J. Fortney, D. Sudarsky, I. Hubeny, C. S. Cooper, W. B. Hubbard, A. Burrows, & J. I. Lunine.* 589, 615 (2003)

COOPER, CURTIS S. Modeling the Formation of Clouds in Brown Dwarf Atmospheres. *Curtis S. Cooper, David Sudarsky, John A. Milsom, Jonathan I. Lunine, & Adam Burrows.* 586, 1320 (2003)

Modeling the Formation of Clouds in Brown Dwarf Atmospheres: Erratum (ApJ, 586, 1320 [2003]). *Curtis S. Cooper, David Sudarsky, John A. Milsom, Jonathan I. Lunine, & Adam Burrows.* 595, 573 (2003) (Orig. paper in 586, 1320 (2003))

COOPER, MICHAEL C. See MADGWICK, DARREN S., et al. The DEEP2 Galaxy Redshift Survey: Spectral Classification of Galaxies at $z \sim 1$.

COOPERSTOCK, F. I. On the Total Energy of Open Friedmann-Robertson-Walker Universes. *V. Faraoni & F. I. Cooperstock.* 587, 483 (2003)

COORAY, ASANTHA. Occultation Searches for Kuiper Belt Objects. *Asantha Cooray & Alison J. Farmer.* 587, L125 (2003)

Kuiper Belt Object Sizes and Distances from Occultation Observations. *Asantha Cooray.* 589, L97 (2003)

The Far-Infrared Background Correlation with Cosmic Microwave Background Lensing. *Yong-Seon Song, Asantha Cooray, Lloyd Knox, & Matias Zaldarriaga.* 590, 664 (2003)

Distances and Cosmology from Galaxy Cluster Cosmic Microwave Background Data. *Asantha Cooray.* 596, L127 (2003)

Small-Scale Cosmic Microwave Background Temperature and Polarization Anisotropies due to Patchy Reionization. *Mário G. Santos, Asantha Cooray, Zoltán Haiman, Lloyd Knox, & Chung-Pei Ma.* 598, 756 (2003)

COORAY, ASANTHA R. Scintillation Caustics in Planetary Occultation Light Curves. *Asantha R. Cooray & J. L. Elliot.* 587, L121 (2003)

COPPI, B. Ballooning Modes in Thin Accretion Disks: Limits for Their Excitation. *B. Coppi & E. A. Keyes.* 595, 1000 (2003)

CORBARD, T. The Rotation of the Deep Solar Layers. *S. Couvidat, R. A. García, S. Turck-Chièze, T. Corbard, C. J. Henney, & S. Jiménez-Reyes.* 597, L77 (2003)

CORBEL, S. X-Ray Emission from the Jets of XTE J1550−564. *P. Kaaret, S. Corbel, J. A. Tomsick, R. Fender, J. M. Miller, J. A. Orosz, T. Tzioumis, & R. Wijnands.* 582, 945 (2003)

X-Ray Temporal Properties of XTE J1650−500 during Outburst Decay. *E. Kalemci, J. A. Tomsick, R. E. Rothschild, K. Pottschmidt, S. Corbel, R. Wijnands, J. M. Miller, & P. Kaaret.* 586, 419 (2003)

Spectral Evolution of the Microquasar XTE J1550−564 over Its Entire 2000 Outburst. *J. Rodriguez, S. Corbel, & J. A. Tomsick.* 595, 1032 (2003)

CORBEL, STÉPHANE. X-Ray Jet Emission from the Black Hole X-Ray Binary XTE J1550−564 with *Chandra* in 2000. *John A. Tomsick, Stéphane Corbel, Rob Fender, Jon M. Miller, Jerome A. Orosz, Tasso Tzioumis, Rudy Wijnands, & Philip Kaaret.* 582, 933 (2003)

X-Ray Flares and Oscillations from the Black Hole Candidate X-Ray Transient XTE J1650−500 at Low Luminosity. *John A. Tomsick, Emrah Kalemci, Stephane Corbel, & Philip Kaaret.* 592, 1100 (2003)

See TOMSICK, JOHN A., et al. *Chandra* Detections of Two Quiescent Black Hole X-Ray Transients.

CORBET, ROBIN H. D. Long-Term X-Ray Variability in GX 13+1: Energy-dependent Periodic Modulation. *Robin H. D. Corbet.* 595, 1086 (2003)

CORBETT, E. A. COLA. II. Radio and Spectroscopic Diagnostics of Nuclear Activity in Galaxies. *E. A. Corbett, L. Kewley, P. N. Appleton, V. Charmandaris, M. A. Dopita, C. A. Heisler, R. P. Norris, A. Zezas, & A. Marston.* 583, 670 (2003)

CORBIN, MICHAEL R. Iron Emission in $z \approx 6$ QSOs. *Wolfram Freudling, Michael R. Corbin, & Kirk T. Korista.* 587, L67 (2003)

CORCORAN, M. F. An X-Ray Investigation of the NGC 346 Field in the Small Magellanic Cloud. II. The Field Population. *Y. Nazé, J. M. Hartwell, I. R. Stevens, J. Manfroid, S. Marchenko, M. F. Corcoran, A. F. J. Moffat, & G. Skalkowski.* 586, 983 (2003)

CORCORAN, MICHAEL. *Chandra* Grating Spectroscopy of the X-Ray Binary 4U 1700−37 in a Flaring State. *Bram Boroson, Saeqa Dil Vrtilek, Timothy Kallman, & Michael Corcoran.* 592, 516 (2003)

See BUTT, YOUSAF M., et al. *Chandra*/Very Large Array Follow-up of TeV J2032+4131, the Only Unidentified TeV Gamma-Ray Source.

CORDES, J. M. A CLEAN-based Method for Deconvolving Interstellar Pulse Broadening from Radio Pulses. *N. D. R. Bhat, J. M. Cordes, & S. Chatterjee.* 584, 782 (2003)

Searches for Giant Pulses from Extragalactic Pulsars. *M. A. McLaughlin & J. M. Cordes.* 596, 982 (2003)

Searches for Fast Radio Transients. *J. M. Cordes & M. A. McLaughlin.* 596, 1142 (2003)

CORDES, JAMES M. A New Search Technique for Short Orbital Period Binary Pulsars. *Scott M. Ransom, James M. Cordes, & Stephen S. Eikenberry.* 589, 911 (2003)

CORDES, O. See GREEN, E. M., et al. Discovery of a New Class of Pulsating Stars: Gravity-Mode Pulsators among Subdwarf B Stars.

CORDONE, S. S. See AGUIRRE, J. E., et al. The Spectrum of Integrated Millimeter Flux of the Magellanic Clouds and 30 Doradus from TopHat and DIRBE Data.

CÓRDOVA, F. A. See MASON, K. O., et al. The X-Ray Spectrum of the Seyfert 1 Galaxy Markarian 766: Dusty Warm Absorber or Relativistic Emission Lines?

Detection of Pulsed X-Ray Emission from *XMM-Newton* Observations of PSR J0538+2817. *K. E. McGowan, J. A. Kennea, S. Zane, F. A. Córdova, M. Cropper, C. Ho, T. Sasseen, & W. T. Vestrand.* 591, 380 (2003)

CORONGIU, A. Three Binary Millisecond Pulsars in NGC 6266. *A. Possenti, N. D'Amico, R. N. Manchester, F. Camilo, A. G. Lyne, J. Sarkissian, & A. Corongiu.* 599, 475 (2003)

CORRADI, ROMANO L. M. The Physical Parameters, Excitation, and Chemistry of the Rim, Jets, and Knots of the Planetary Nebula NGC 7009. *Denise R. Goncalves, Romano L. M. Corradi, Antonio Mampaso, & Mario Perinotto.* 597, 975 (2003)

CORRAL, L. J. See MARCHENKO, S. V., et al. The Unusual 2001 Periastron Passage in the "Clockwork" Colliding-Wind Binary WR 140.

CORSINI, E. M. Direct Confirmation of Two Pattern Speeds in the Double-barred Galaxy NGC 2950. *E. M. Corsini, Victor P. Debattista, & J. A. L. Aguerri.* 599, L29 (2003)

CORTESE, L. Capturing a Star Formation Burst in Galaxies Infalling onto the Cluster A1367. *G. Gavazzi, L. Cortese, A. Boselli, J. Iglesias-Paramo, J. M. Vílchez, & L. Carrasco.* 597, 210 (2003)

CORTIGLIONI, S. Polarization Observations in a Low Synchrotron Emission Field at 1.4 GHz. *G. Bernardi, E. Carretti, S. Cortiglioni, R. J. Sault, M. J. Kesteven, & S. Poppi.* 594, L5 (2003)

COSTA, A. F. M. See MUKADEM, ANJUM S., et al. Constraining the Evolution of ZZ Ceti.

COSTA, E. See PRICE, P. A., et al. GRB 010921: Strong Limits on an Underlying Supernova from the *Hubble Space Telescope*.

See PRICE, P. A., et al. Discovery of GRB 020405 and Its Late Red Bump.

See DE PASQUALE, M., et al. A Comparative Study of the X-Ray Afterglow Properties of Optically Bright and Dark Gamma-Ray Bursts.

See FEROCI, M., et al. The 2001 April Burst Activation of SGR 1900+14: X-Ray Afterglow Emission.

CÔTÉ, P. The Ages and Abundances of a Sample of Globular Clusters in M49 (NGC 4472). *Judith G. Cohen, J. P. Blakeslee, & P. Côté.* 592, 866 (2003)

CÔTÉ, PATRICK. Dynamics of the Globular Cluster System Associated with M49 (NGC 4472): Cluster Orbital Properties and the Distribution of Dark Matter. *Patrick Côté, Dean E. McLaughlin, Judith G. Cohen, & John P. Blakeslee.* 591, 850 (2003)

Hubble Space Telescope Observations of Novae in M49. *Laura Ferrarese, Patrick Côté, & Andrés Jordán.* 599, 1302 (2003)

CÔTÉ, S. Interactions between a Bright Young Stellar Object and the *Micourse Space Experiment* Infrared-Dark Cloud G79.3+0.3: An Early Stage of Triggered Star Formation? *R. O. Redman, P. A. Feldman, F. Wyrowski, S. Côté, S. J. Carey, & M. P. Egan.* 586, 1127 (2003)

COTTAM, J. *Chandra* and *XMM* Observations of the Accretion Disk Corona Source 0921−63. *T. R. Kallman, L. Angelini, B. Boroson, & J. Cottam.* 583, 861 (2003)

COTTIN, HERVÉ. Photodestruction of Relevant Interstellar Molecules in Ice Mixtures. *Hervé Cottin, Marla H. Moore, & Yves Bénilan.* 590, 874 (2003)

COTTINGHAM, D. A. See AGUIRRE, J. E., et al. The Spectrum of Integrated Millimeter Flux of the Magellanic Clouds and 30 Doradus from TopHat and DIRBE Data.

COTTON, W. D. See COHEN, A. S., et al. The Low-Frequency Radio Counterpart of the *XMM* Large-Scale Structure Survey.

COUCH, WARRICK J. Starbursts from the Strong Compression of Galactic Molecular Clouds due to the High Pressure of the Intracluster Medium. *Kenji Bekki & Warrick J. Couch.* 596, L13 (2003)

COUETDIC, JOCELYN. Stable 1:2 Resonant Periodic Orbits in Elliptic Three-Body Systems. *Nader Haghighipour, Jocelyn Couetdic, Ferenc Varadi, & William B. Moore.* 596, 1332 (2003)

COULSON, I. M. See HOLLAND, W. S., et al. Submillimeter Observations of an Asymmetric Dust Disk around Fomalhaut.

COURNOYER, JEAN-PHILIPPE. See COLLEY, WESLEY N., et al. Around-the-Clock Observations of the Q9057+561A,B Gravitationally Lensed Quasar. II. Results for the Second Observing Season.

COURTEAU, STÉPHANE. The Tully-Fisher Relation of Barred Galaxies. *Stéphane Courteau, David R. Andersen, Matthew A. Bershady, Lauren A. MacArthur, & Hans-Walter Rix.* 594, 208 (2003)

COURTEAU, STEPHANIE. Structure of Disk-dominated Galaxies. II. Bulge/Disk Parameters, Simulations, and Secular Evolution. *Lauren A. MacArthur, Stephanie Courteau, & Jon A. Holtzman.* 582, 689 (2003)

COURVOISIER, T.J.-L. See MEREGHETTI, S., et al. *Integral* and *XMM-Newton* Observations of the Weak Gamma-Ray Burst GRB 030227.

COUVIDAT, S. The Rotation of the Deep Solar Layers. *S. Couvidat, R. A. García, S. Turck-Chièze, T. Corbard, C. J. Henney, & S. Jiménez-Reyes.* 597, L77 (2003)

Solar Seismic Models and the Neutrino Predictions. *S. Couvidat, S. Turck-Chièze, & A. G. Kosovichev.* 599, 1434 (2003)

COVARRUBIAS, RICARDO. See SZKODY, PAULA, et al. Two Rare Magnetic Cataclysmic Variables with Extreme Cyclotron Features Identified in the Sloan Digital Sky Survey.

COVEY, K. See TEEGARDEN, B. J., et al. Discovery of a New Nearby Star.

COVEY, KEVIN. See SZKODY, PAULA, et al. Two Rare Magnetic Cataclysmic Variables with Extreme Cyclotron Features Identified in the Sloan Digital Sky Survey.

COVINGTON, A. M. See AGUILAR, A., et al. Absolute Photoionization Cross Section Measurements of O II Ions from 29.7 to 46.2 eV.

COVINO, S. See ISRAEL, G. L., et al. The Infrared Counterpart to the Anomalous X-Ray Pulsar 1RXS J170849−400910.

See ISRAEL, G. L., et al. Unveiling the Nature of the 321 Second Modulation in RX J0806.3+1527: Near-Simultaneous *Chandra* and Very Large Telescope Observations.

COVINO, STEFANO. Evidence of a Cyclotron Feature in the Spectrum of the Anomalous X-Ray Pulsar 1RXS J170849−400910. *Nanda Rea, Gian Luca Israel, Luigi Stella, Tim Oosterbroek, Sandro Mereghetti, Lorella Angelini, Sergio Campana, & Stefano Covino.* 586, L65 (2003)

COWAN, J. J. Improved Laboratory Transition Probabilities for Nd II and Application to the Neodymium Abundances of the Sun and Three Metal-Poor Stars. *E. A. Den Hartog, J. E. Lawler, C. Sneden, & J. J. Cowan.* 148, 543 (2003)

COWAN, JOHN J. See SNEDEN, CHRISTOPHER, et al. The Extremely Metal-poor, Neutron Capture–rich Star CS 22892−052: A Comprehensive Abundance Analysis.

Binary Blue Metal-Poor Stars: Evidence for Asymptotic Giant Branch Mass Transfer. *Christopher Sneden, George W. Preston, & John J. Cowan.* 592, 504 (2003)

COWEN, D. F. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

COWIE, L. L. The Hawaii+Anglo-Australian Observatory *K*-Band Galaxy Redshift Survey. I. The Local *K*-Band Luminosity Function. *J.-S. Huang, K. Glazebrook, L. L. Cowie, & C. Tinney.* 584, 203 (2003)

The Redshift Evolution of the 2–8 keV X-Ray Luminosity Function. *L. L. Cowie, A. J. Barger, M. Bautz, W. N. Brandt, & G. P. Garmire.* 584, L57 (2003)

Very High Redshift X-Ray–selected Active Galactic Nuclei in the *Chandra* Deep Field–North. *A. J. Barger, L. L. Cowie, P. Capak, D. M. Alexander, F. E. Bauer, W. N. Brandt, G. P. Garmire, & A. E. Hornschemeier.* 584, L61 (2003)

See CHAPMAN, S. C., et al. The Properties of Microjansky Radio Sources in the Hubble Deep Field–North, SSA 13, and SSA 22 Fields.

Imaging Large-Scale Structure in the X-Ray Sky. *Yuxuan Yang, R. F. Mushotzky, A. J. Barger, L. L. Cowie, D. B. Sanders, & A. T. Steffen.* 585, L85 (2003)

A Submillimeter and Radio Survey of Gamma-Ray Burst Host Galaxies: A Glimpse into the Future of Star Formation Studies. *E. Berger, L. L. Cowie, S. R. Kulkarni, D. A. Frail, H. Aussel, & A. J. Barger.* 588, 99 (2003)

The Changing Active Galactic Nucleus Population. *A. T. Steffen, A. J. Barger, L. L. Cowie, R. F. Mushotzky, & Y. Yang.* 596, L23 (2003)

COX, ARTHUR N. A Pulsation Mechanism for GW Virginis Variables. *Arthur N. Cox.* 585, 975 (2003)

COX, DONALD P. Flux-Tube Dynamics and a Model for the Origin of the Local Fluff. *Donald P. Cox & Louise Helenius.* 583, 205 (2003)

COX, P. Multiple Molecular H_2 Outflows in AFGL 618. *P. Cox, P. J. Huggins, J.-P. Maillard, C. Muthu, R. Bachiller, & T. Forveille.* 586, L87 (2003)

See NERI, R., et al. Interferometric Observations of Powerful CO Emission from Three Submillimeter Galaxies at $z = 2.39$, 2.51, and 3.35.

COX, PIERRE. Spatially Resolved Millimeter Interferometry of SMM J02399−0136: A Very Massive Galaxy at $z = 2.8$. *Reinhard Genzel, Andrew J. Baker, Linda J. Tacconi, Dieter Lutz, Pierre Cox, Stéphane Guilloteau, & Alain Omont.* 584, 633 (2003)

COYNE, D. G. See ATKINS, R., et al. The High-Energy Gamma-Ray Fluence and Energy Spectrum of GRB 970417A from Observations with Milagrito.

See FALCONE, A., et al. Observation of GeV Solar Energetic Particles from the 1997 November 6 Event Using Milagrito.

See ATKINS, R., et al. Observation of TeV Gamma Rays from the Crab Nebula with Milagro Using a New Background Rejection Technique.

CRAIG, I. J. D. Fast Magnetic Reconnection via Jets and Current Microsheets. *P. G. Watson & I. J. D. Craig.* 590, L57 (2003)

Toward a Reconnection Model for Solar Flare Statistics. *M. S. Wheatland & I. J. D. Craig.* 595, 458 (2003)

CRAIG, W. W. See BERSIER, D., et al. The Unusual Optical Afterglow of the Gamma-Ray Burst GRB 021004: Color Changes and Short-Timescale Variability.

CRANE, JEFFREY D. Tracing the Galactic Anticenter Stellar Stream with 2MASS M Giants. *Helio J. Rocha-Pinto, Steven R. Majewski, M. F. Skrutskie, & Jeffrey D. Crane.* 594, L115 (2003)

Exploring Halo Substructure with Giant Stars: Spectroscopy of Stars in the Galactic Anticenter Stellar Structure. *Jeffrey D. Crane, Steven R. Majewski, Helio J. Rocha-Pinto, Peter M. Frinchaboy, Michael F. Skrutskie, & David R. Law.* 594, L119 (2003)

CRANMER, S. R. Alfvénic Turbulence in the Extended Solar Corona: Kinetic Effects and Proton Heating. *S. R. Cranmer & A. A. van Ballegooijen.* 594, 573 (2003)

Empirically Determined Anisotropic Velocity Distributions and Outflows of O^{5+} Ions in a Coronal Streamer at Solar Minimum. *R. A. Frazin, S. R. Cranmer, & J. L. Kohl.* 597, 1145 (2003)

CRAWFORD, F. X-Ray Observations of the Compact Central Object in Supernova Remnant G347.3−0.5. *J. S. Lazendic, P. O. Slane, B. M. Gaensler, P. P. Plucinsky, J. P. Hughes, D. K. Galloway, & F. Crawford.* 593, L27 (2003)

CRAWFORD, FRONEFIELD. Radio Polarization of the Young High-Magnetic-Field Pulsar PSR J1119−6127. *Fronefield Crawford & Nathan C. Keim.* 590, 1020 (2003)

A Comparison of Measured Crab and Vela Glitch Healing Parameters with Predictions of Neutron Star Models. *Fronefield Crawford & Marek Demiański.* 595, 1052 (2003)

CRAWFORD, S. See COLAVITA, M., et al. Observations of DG Tauri with the Keck Interferometer.

CRAWFORD, T. M. See AGUIRRE, J. E., et al. The Spectrum of Integrated Millimeter Flux of the Magellanic Clouds and 30 Doradus from TopHat and DIRBE Data.

CREECH-EAKMAN, M. See COLAVITA, M., et al. Observations of DG Tauri with the Keck Interferometer.

See SWAIN, MARK, et al. Interferometer Observations of Subparsec-Scale Infrared Emission in the Nucleus of NGC 4151.

CRENSHAW, D. M. The Kinematics and Physical Conditions of the Ionized Gas in Markarian 509. II. STIS Echelle Observations. *S. B. Kraemer, D. M. Crenshaw, T. Yaqoob, B. McKernan, J. R. Gabel, I. M. George, T. J. Turner, & J. P. Dunn.* 582, 125 (2003)

Simultaneous Ultraviolet and X-Ray Spectroscopy of the Seyfert 1 Galaxy NGC 5548. I. Physical Conditions in the Ultraviolet Absorbers. *D. M. Crenshaw, S. B. Kraemer, J. R. Gabel, J. S. Kaastra, K. C. Steenbrugge, A. C. Brinkman, J. P. Dunn, I. M. George, D. A. Liedahl, F. B. S. Paerels, T. J. Turner, & T. Yaqoob.* 594, 116 (2003)

CRENSHAW, D. MICHAEL. The Kinematics and Physical Conditions of the Ionized Gas in Markarian 509. I. *Chandra* High Energy Grating Spectroscopy. *Tahir Yaqoob, Barry McKernan, Steven B. Kraemer, D. Michael Crenshaw, Jack R. Gabel, Ian M. George, & T. Jane Turner.* 582, 105 (2003)

See GABEL, JACK R., et al. The Ionized Gas and Nuclear Environment in NGC 3783. II. Averaged *Hubble Space Telescope*/STIS and *Far Ultraviolet Spectroscopic Explorer* Spectra.

See GABEL, JACK R., et al. The Ionized Gas and Nuclear Environment in NGC 3783. III. Detection of a Decreasing Radial Velocity in an Intrinsic Ultraviolet Absorber.

See NETZER, HAGAI, et al. The Ionized Gas and Nuclear Environment in NGC 3783. IV. Variability and Modeling of the 900 Kilosecond *Chandra* Spectrum.

CREW, G. B. *HETE-2* Localization and Observation of the Bright, X-Ray–rich Gamma-Ray Burst GRB 021211. *G. B. Crew, D. Q. Lamb, G. R. Ricker, J.-L. Atteia, N. Kawai, R. Vanderspek, J. Villasenor, J. Doty, G. Prigozhin, J. G. Jernigan, C. Graziani, Y. Shirasaki, T. Sakamoto, M. Suzuki, N. Butler, K. Hurley, T. Tamagawa, A. Yoshida, M. Matsuoka, E. E. Fenimore, M. Galassi, C. Barraud, M. Boer, J.-P. Dezalay, J.-F. Olive, A. Levine, G. Monnelly, F. Martel, E. Morgan, T. Q. Donaghy, K. Torii, S. E. Woosley, T. Cline, J. Braga, R. Manchanda, G. Pizzichini, K. Takagishi, & M. Yamauchi.* 599, 387 (2003)

CREW, GEOFFREY B. The X-Ray Afterglows of GRB 020813 and GRB 021004 with *Chandra* HETGS: Possible Evidence for a Supernova prior to GRB 020813. *Nathanial R. Butler, Herman L. Marshall, George R. Ricker, Roland K. Vanderspek, Peter G. Ford, Geoffrey B. Crew, Donald Q. Lamb, & J. Garrett Jernigan.* 597, 1010 (2003)

CRIGGER, LARA. *ROSAT* X-Ray Spectral Properties of Nearby Young Associations: TW Hydrae, Tucana-Horologium, and the β Pictoris Moving Group. *Joel H. Kastner, Lara Crigger, Margaret Rich, & David A. Weintraub.* 585, 878 (2003)

CRILL, B. P. BOOMERANG: A Balloon-Borne Millimeter-Wave Telescope and Total Power Receiver for Mapping Anisotropy in the Cosmic Microwave Background. *B. P. Crill, P. A. R. Ade, D. R. Artusa, R. S. Bhatia, J. J. Bock, A. Boscaleri, P. Cardoni, S. E. Church, K. Coble, P. deBernardis, G. deTroia, P. Farese, K. M. Ganga, M. Giacometti, C. V. Haynes, E. Hivon, V. V. Hristov, A. Iacoangeli, W. C. Jones, A. E. Lange, L. Martinis, S. Masi, P. V. Mason, P. D. Mauskopf, L. Miglio, T. Montroy, C. B. Netterfield, C. G. Paine, E. Pascale, F. Paicentini, G. Polenta, F. Pongetti, G. Romeo, J. E. Ruhl, F. Scaramuzzi, D. Sforna, & A. D. Turner.* 148, 527 (2003)

See RUHL, J. E., et al. Improved Measurement of the Angular Power Spectrum of Temperature Anisotropy in the Cosmic Microwave Background from Two New Analyses of BOOMERANG Observations.

CRISTIANI, S. A European Southern Observatory Very Large Telescope Survey of Near-Infrared ($Z \leq 25$) Selected Galaxies at Redshifts $4.5 < z < 6$: Constraining the Cosmic Star Formation Rate near the Reionization Epoch. *A. Fontana, F. Poli, N. Menci, M. Nonino, E. Giallongo, S. Cristiani, & S. D'Odorico.* 587, 544 (2003)

See POLI, F., et al. The Evolution of the Galaxy Luminosity Function in the Rest-Frame Blue Band up to $z = 3.5$.

See FONTANA, A., et al. The Assembly of Massive Galaxies from Near-Infrared Observations of the Hubble Deep Field–South.

CRISTÓBAL-HORNILLOS, DAVID. K_s Number Counts in the Groth and Coppi Fields. *David Cristóbal-Hornillos, Marc Balcells, Mercedes Prieto, Rafael Guzmán, Jesús Gallego, Nicolás Cardiel, Ángel Serrano, & Roser Pelló.* 595, 71 (2003)

CROFT, RUPERT A. C. Black Hole Growth and Activity in a Λ Cold Dark Matter Universe. *Tiziana Di Matteo, Rupert A. C. Croft, Volker Springel, & Lars Hernquist.* 593, 56 (2003)

CROPPER, M. Detection of Pulsed X-Ray Emission from *XMM-Newton* Observations of PSR J0538+2817. *K. E. McGowan, J. A. Kennea, S. Zane, F. A. Córdova, M. Cropper, C. Ho, T. Sasseen, & W. T. Vestrand.* 591, 380 (2003)

CROSS, N. See TRAN, H. D., et al. Advanced Camera for Surveys Observations of Young Star Clusters in the Interacting Galaxy UGC 10214.

CROSS, N. J. G. See BOUWENS, R. J., et al. Star Formation at $z \sim 6$: i-Dropouts in the Advanced Camera for Surveys Guaranteed Time Observation Fields.

See BLAKESLEE, JOHN P., et al. Advanced Camera for Surveys Photometry of the Cluster RDCS 1252.9−2927: The Color-Magnitude Relation at $z = 1.24$.

See MEURER, GERHARDT R., et al. The Discovery of Globular Clusters in the Protospiral Galaxy NGC 2915: Implications for Hierarchical Galaxy Evolution.

CROSS, NICHOLAS. See BLAKESLEE, JOHN P., et al. Discovery of Two Distant Type Ia Supernovae in the Hubble Deep Field–North with the Advanced Camera for Surveys.

CROTTS, ARLIN. Event Rates and Timescale Distributions from Realistic Microlensing Models of M31. *Edward A. Baltz, Geza Gyuk, & Arlin Crotts.* 582, 30 (2003)

See MICHAEL, ELI, et al. *Hubble Space Telescope* Observations of High-Velocity Lyα and Hα Emission from Supernova Remnant 1987A: The Structure and Development of the Reverse Shock.

CROWE, RICHARD. See COLLEY, WESLEY N., et al. Around-the-Clock Observations of the Q9057+561A,B Gravitationally Lensed Quasar. II. Results for the Second Observing Season.

CRUDDACE, R. The *ROSAT* All-Sky Survey: A Catalog of Clusters of Galaxies in a Region of 1 Steradian around the South Galactic Pole: Erratum (ApJS, 140, 239 [2002]). *R. Cruddace, W. Voges, H. Böhringer, C. Collins, D. Yentis, & H. MacGillivray.* 144, 299 (2003) (Orig. paper in 140, 239 (2002))

CRUTCHER, RICHARD M. Interferometric Mapping of Magnetic Fields in Star-Forming Regions. III. Dust and CO Polarization in DR 21(OH). *Shih-Ping Lai, José M. Girart, & Richard M. Crutcher.* 598, 392 (2003)

CRUZ, KELLE L. The Discovery of Two Nearby Carbon Dwarfs. *Patrick J. Lowrance, J. Davy Kirkpatrick, I. Neill Reid, Kelle L. Cruz, & James Liebert.* 584, L95 (2003)

CRUZ-GONZÁLEZ, I. See STEPANIAN, J. A., et al. A Multiwavelength Study of Narrow-Line Seyfert 1 Galaxies from the Second Byurakan Survey.

CSABAI, I. See PRADA, FRANCISCO, et al. Observing the Dark Matter Density Profile of Isolated Galaxies.

CSABAI, ISTVAN. See HOGG, DAVID W., et al. The Overdensities of Galaxy Environments as a Function of Luminosity and Color.

See EISENSTEIN, DANIEL J., et al. Average Spectra of Massive Galaxies in the Sloan Digital Sky Survey.

See GLAZEBROOK, KARL, et al. The Sloan Digital Sky Survey: The Cosmic Spectrum and Star Formation History.

See SZALAY, ALEXANDER S., et al. Karhunen-Loève Estimation of the Power Spectrum Parameters from the Angular Distribution of Galaxies in Early Sloan Digital Sky Survey Data.

See BLANTON, MICHAEL R., et al. The Galaxy Luminosity Function and Luminosity Density at Redshift $z = 0.1$.

See BLANTON, MICHAEL R., et al. The Broadband Optical Properties of Galaxies with Redshifts $0.02 < z < 0.22$.

See BUDAVÁRI, TAMÁS, et al. Angular Clustering with Photometric Redshifts in the Sloan Digital Sky Survey: Bimodality in the Clustering Properties of Galaxies.

CSAK, B. See GIES, D. R., et al. Wind Accretion and State Transitions in Cygnus X-1.

CUBAYNES, D. Measurements and Calculations of Photoionization Cross Sections of Multiply Charged Ions in Ground and Metastable States along the Isonuclear Series of Oxygen: O^{2+} to O^{4+}. *J.-P. Champeaux, J.-M. Bizau, D. Cubaynes, C. Blancard, S. Nahar, D. Hitz, J. Bruneau, & F. J. Wuilleumier.* 148, 583 (2003)

CUBY, JEAN-GABRIEL. Hα Spectroscopy of Galaxies at $z > 2$: Kinematics and Star Formation. *Dawn K. Erb, Alice E. Shapley, Charles C. Steidel, Max Pettini, Kurt L. Adelberger, Matthew P. Hunt, Alan F. M. Moorwood, & Jean-Gabriel Cuby.* 591, 101 (2003)

CUI, S. W. See AMENOMORI, M., et al. Multi-TeV Gamma-Ray Flares from Markarian 421 in 2000 and 2001 Observed with the Tibet Air Shower Array.

CUI, W. See HOLDER, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.

See BAGANOFF, F. K., et al. *Chandra* X-Ray Spectroscopic Imaging of Sagittarius A* and the Central Parsec of the Galaxy.

See DE LA CALLE PÉREZ, I., et al. Search for High-Energy Gamma Rays from an X-Ray–Selected Blazar Sample.

CUILLANDRE, JEAN-CHARLES. A Turbulent Origin for Flocculent Spiral Structure in Galaxies. II. Observations and Models of M33. *Bruce G. Elmegreen, Samuel N. Leitner, Debra Meloy Elmegreen, & Jean-Charles Cuillandre.* 593, 333 (2003)

CULTER, CHRISTOPHER J. Three-dimensional Dynamics of Narrow Planetary Rings. *Eugene I. Chiang & Christopher J. Culter.* 599, 675 (2003)

CUMMING, ANDREW. Photodisintegration-triggered Nuclear Energy Release in Superbursts. *Hendrik Schatz, Lars Bildsten, & Andrew Cumming.* 583, L87 (2003)

Models of Type I X-Ray Bursts from 4U 1820−30. *Andrew Cumming.* 595, 1077 (2003)

CUMMINGS, A. C. See SLOCUM, P. L., et al. Elemental Fractionation in Small Solar Energetic Particle Events.

CUNHA, KATIA. See SMITH, VERNE V., et al. High-Resolution Infrared Spectroscopy of the Brown Dwarf ϵ Indi Ba.

CUNHA, M. S. See MUKADEM, ANJUM S., et al. Constraining the Evolution of ZZ Ceti.

CUNTZ, M. Acoustic Heating Models for the Basal Flux Star τ Ceti Including Time-dependent Ionization: Results for Ca II and Mg II Emission. *W. Rammacher & M. Cuntz.* 594, L51 (2003)

CURDT, W. Mass Motions and Plasma Properties in the 10^7 K Flare Solar Corona. *E. Landi, U. Feldman, D. E. Innes, & W. Curdt.* 582, 506 (2003)

Nonthermal Mass Motions within the High-Temperature Plasmas above a Complex Solar Active Region. *U. Feldman, E. Landi, & W. Curdt.* 585, 1087 (2003)

Free-Free Emission in the Far-Ultraviolet Spectral Range: A Resource for Diagnosing Solar and Stellar Flare Plasmas. *U. Feldman, E. Landi, G. A. Doschek, I. Dammasch, & W. Curdt.* 593, 1226 (2003)

CURIEL, S. Very Large Array Observations of Proper Motions in YLW 15. *S. Curiel, J. M. Girart, L. F. Rodríguez, & J. Cantó.* 582, L109 (2003)

See TORRELLES, J. M., et al. Evidence for Evolution of the Outflow Collimation in Very Young Stellar Objects.

CURIEL, SALVADOR. Very Large Array Observations of Proper Motions in L1551 IRS 5. *Luis F. Rodríguez, Salvador Curiel, Jorge Cantó, Laurent Loinard, Alejandro C. Raga, & Jose M. Torrelles.* 583, 330 (2003)

Far-Ultraviolet Spectra of a Nonradiative Shock Wave in the Cygnus Loop. *John C. Raymond, Parviz Ghavamian, Ravi Sankrit, William P. Blair, & Salvador Curiel.* 584, 770 (2003)

The Binary Jet in L1551 IRS 5. *Luis F. Rodríguez, Alicia Porras, Mark J. Claussen, Salvador Curiel, David J. Wilner, & Paul T. P. Ho.* 586, L137 (2003)

See TRINIDAD, MIGUEL A., et al. Observations of Water Masers and Radio Continuum Emission in AFGL 2591.

CURIR, A. Dark and Luminous Matter Connections from Smoothed Particle Hydrodynamic Simulations of Isolated Triaxial Collapsing Systems. *P. Mazzei & A. Curir.* 591, 784 (2003)

CURLEY, DYLAN. See CLOSE, LAIRD M., et al. High-Resolution Images of Orbital Motion in the Trapezium Cluster: First Scientific Results from the Multiple Mirror Telescope Deformable Secondary Mirror Adaptive Optics System.

CURRIER, NATHAN. Cosmological Mestel Disks and the Rossby Vortex Instability: The Origin of Supermassive Black Holes. *Stirling A. Colgate, Renyue Cen, Hui Li, Nathan Currier, & Michael S. Warren.* 598, L7 (2003)

CUSHING, MICHAEL. FeH Absorption in the Near-Infared Spectra of Late M and L Dwarfs. *Michael Cushing, John T. Rayner, Sumner P. Davis, & William D. Vacca.* 582, 1066 (2003)

CUTLER, CURT. The Crustal Rigidity of a Neutron Star, and Implications for PSR 1828−11 and Other Precession Candidates. *Curt Cutler, Greg Ushomirsky, & Bennett Link.* 588, 975 (2003)

CUTRI, R. M. Analysis of the Diffuse Near-Infrared Emission from Two-Micron All-Sky Survey Deep Integration Data: Foregrounds versus the Cosmic Infrared Background. *S. Odenwald, A. Kashlinsky, J. C. Mather, M. F. Skrutskie, & R. M. Cutri.* 583, 535 (2003)

CUTRI, ROC M. A *Hubble Space Telescope*/WFPC2 Snapshot Survey of 2MASS-selected Red QSOs. *Andrew R. Marble, Dean C. Hines, Gary D. Schmidt, Paul S. Smith, Jason A. Surace, Lee Armus, Roc M. Cutri, & Brant O. Nelson.* 590, 707 (2003)

CYGANOWSKI, C. J. Dual Cometary H II Regions in DR 21: Bow Shocks or Champagne Flows? *C. J. Cyganowski, M. J. Reid, V. L. Fish, & P. T. P. Ho.* 596, 344 (2003)

CZERNY, BOŻENA. See BECHTOLD, JILL, et al. *Chandra* Survey of Radio-quiet, High-Redshift Quasars.

CZOSKE, OLIVER. A Wide-Field *Hubble Space Telescope* Study of the Cluster Cl 0024+16 at $z = 0.4$. I. Morphological Distributions to 5 Mpc Radius. *Tommaso Treu, Richard S. Ellis, Jean-Paul Kneib, Alan Dressler, Ian Smail, Oliver Czoske, Augustus Oemler, & Priyamvada Natarajan.* 591, 53 (2003)

See KNEIB, JEAN-PAUL, et al. A Wide-Field *Hubble Space Telescope* Study of the Cluster Cl 0024+1654 at $z = 0.4$. II. The Cluster Mass Distribution.

DA COSTA, L. See FELDMAN, H., et al. An Estimate of Ω_m without Conventional Priors.

DADDI, E. Detection of Strong Clustering of Red *K*-selected Galaxies at $2 < z_{\rm phot} < 4$ in the Hubble Deep Field–South. *E. Daddi, H. J. A. Röttgering, I. Labbé, G. Rudnick, M. Franx, A. F. M. Moorwood, H. W. Rix, P. P. van der Werf, & P. G. van Dokkum.* 588, 50 (2003)

See GILLI, R., et al. Tracing the Large-Scale Structure in the *Chandra* Deep Field South.

See POLI, F., et al. The Evolution of the Galaxy Luminosity Function in the Rest-Frame Blue Band up to $z = 3.5$.

DADDI, EMANUELE. See FRANX, MARIJN, et al. A Significant Population of Red, Near-Infrared–selected High-Redshift Galaxies.

See VAN DOKKUM, PIETER G., et al. Spectroscopic Confirmation of a Substantial Population of Luminous Red Galaxies at Redshifts $z \gtrsim 2$.

See LABBÉ, IVO, et al. Large Disklike Galaxies at High Redshift.

See RUDNICK, GREGORY, et al. The Rest-Frame Optical Luminosity Density, Color, and Stellar Mass Density of the Universe from $z = 0$ to $z = 3$.

DADO, SHLOMO. Is the Afterglow of Gamma-Ray Burst GRB 021004 Unusual? *Shlomo Dado, Arnon Dar, & A. De Rújula.* 585, L15 (2003)

On the X-Ray Lines in the Afterglows of Gamma-Ray Bursts. *Shlomo Dado, Arnon Dar, & A. De Rújula.* 585, 890 (2003)

What We Learn from the Afterglow of GRB 021211. *Shlomo Dado, Arnon Dar, & A. De Rújula.* 593, 961 (2003)

The Supernova Associated with GRB 030329. *Shlomo Dado, Arnon Dar, & A. De Rújula.* 594, L89 (2003)

DAHLE, HAAKON. Weak Gravitational Lensing by a Sample of X-Ray–luminous Clusters of Galaxies. III. Serendipitous Weak Lensing Detections of Dark and Luminous Mass Concentrations. *Haakon Dahle, Kristian Pedersen, Per B. Lilje, Steve J. Maddox, & Nick Kaiser.* 591, 662 (2003)

DAHLE, HÅKON. The Density Profile of Cluster-Scale Dark Matter Halos. *Håkon Dahle, Steen Hannestad, & Jesper Sommer-Larsen.* 588, L73 (2003)

DAHM, SCOTT. A *Hubble Space Telescope* Wide Field Planetary Camera 2 Survey for Brown Dwarf Binaries in the α Persei and the Pleiades Open Clusters. *Eduardo L. Martín, David Barrado y Navascués, Isabelle Baraffe, Hervé Bouy, & Scott Dahm.* 594, 525 (2003)

DAHM, SCOTT E. Adaptive Optics Imaging and Spectroscopy of Cygnus A. I. Evidence for a Minor Merger. *Gabriela Canalizo, Claire Max, David Whysong, Robert Antonucci, & Scott E. Dahm.* 597, 823 (2003)

DAI, X. *Chandra* Observations of QSO 2237+0305. *X. Dai, G. Chartas, E. Agol, M. W. Bautz, & G. P. Garmire.* 589, 100 (2003)

DAI, Z. G. GRB 030226 in a Density-Jump Medium. *Z. G. Dai & X. F. Wu.* 591, L21 (2003)

External Shock Model for the Large-Scale, Relativistic X-Ray Jets from the Microquasar XTE J1550−564. *X. Y. Wang, Z. G. Dai, & T. Lu.* 592, 347 (2003)

Gamma-Ray Bursts from Neutron Star Kicks. *Y. F. Huang, Z. G. Dai, T. Lu, K. S. Cheng, & X. F. Wu.* 594, 919 (2003)

High-Energy Neutrinos from Magnetars. *Bing Zhang, Z. G. Dai, P. Mészáros, E. Waxman, & A. K. Harding.* 595, 346 (2003)

Pair Loading in Gamma-Ray Burst Fireballs and Prompt Emission from Pair-rich Reverse Shocks. *Zhuo Li, Z. G. Dai, T. Lu, & L. M. Song.* 599, 380 (2003)

DAIGNE, F. A New X-Ray Flare from the Galactic Nucleus Detected with the *XMM-Newton* Photon Imaging Cameras. *A. Goldwurm, E. Brion, P. Goldoni, P. Ferrando, F. Daigne, A. Decourchelle, R. S. Warwick, & P. Predehl.* 584, 751 (2003)

DALAL, NEAL. Corrective Lenses for High-Redshift Supernovae. *Neal Dalal, Daniel E. Holz, Xuelei Chen, & Joshua A. Frieman.* 585, L11 (2003)

Bringing Closure to Microlensing Mass Measurement. *Neal Dalal & Benjamin F. Lane.* 589, 199 (2003)

DALE, D. A. The Bivariate Luminosity-Color Distribution of *IRAS* Galaxies and Implications for the High-Redshift Universe. *S. C. Chapman, G. Helou, G. F. Lewis, & D. A. Dale.* 588, 186 (2003)

DALE, DANIEL A. See LU, NANYAO, et al. Infrared Emission of Normal Galaxies from 2.5 to 12 Microns: *Infrared Space Observatory* Spectra, Near-Infrared Continuum, and Mid-Infrared Emission Features.

D'ALESSIO, F. See VALENTINI, G., et al. Optical and Near-Infrared Photometry of the Type Ia Supernova 2000E in NGC 6951.

D'ALESSIO, PAOLA. See TRINIDAD, MIGUEL A., et al. Observations of Water Masers and Radio Continuum Emission in AFGL 2591.

The Effects of UV Continuum and Lyα Radiation on the Chemical Equilibrium of T Tauri Disks. *Edwin Bergin, Nuria Calvet, Paola D'Alessio, & Gregory J. Herczeg.* 591, L159 (2003)

Unveiling the Inner Disk Structure of T Tauri Stars. *James Muzerolle, Nuria Calvet, Lee Hartmann, & Paola D'Alessio.* 597, L149 (2003)

D'ALESSIO, PAOLO. A Comprehensive Study of the L1551 IRS 5 Binary System. *Mayra Osorio, Paolo D'Alessio, James Muzerolle, Nuria Calvet, & Lee Hartmann.* 586, 1148 (2003)

DALGARNO, A. Charge Abundances of the Solar Wind Ions Inferred from Cometary X-Ray Spectra. *V. Kharchenko, Matt Rigazio, A. Dalgarno, & V. A. Krasnopolsky.* 585, L73 (2003)

DALGARNO, ALEXANDER. Editorial: ApJ Letters Transitions. *Alexander Dalgarno.* 582, L1 (2003)

DALL'OSSO, S. The Glitches of the Anomalous X-Ray Pulsar 1RXS J170849.0−400910. *S. Dall'Osso, G. L. Israel, L. Stella, A. Possenti, & E. Perozzi.* 599, 485 (2003)

DALTON, GAVIN B. See OHTA, KOUJI, et al. Optical Identification of the *ASCA* Lynx Deep Survey: An Association of Quasi-Stellar Objects and a Supercluster at $z = 1.3$?

DALY, RUTH A. Radio Galaxy Redshift–Angular Size Data Constraints on Dark Energy. *Silviu Podariu, Ruth A. Daly, Matthew P. Mory, & Bharat Ratra.* 584, 577 (2003)

Constraints on the Cluster Environments and Hot Spot Magnetic Field Strengths of the Radio Sources 3C 280 and 3C 254. *Megan Donahue, Ruth A. Daly, & Donald J. Horner.* 584, 643 (2003)

A Model-Independent Determination of the Expansion and Acceleration Rates of the Universe as a Function of Redshift and Constraints on Dark Energy. *Ruth A. Daly & S. G. Djorgovski.* 597, 9 (2003)

DAME, THOMAS M. See BUTT, YOUSAF M., et al. *Chandra*/Very Large Array Follow-up of TeV J2032+4131, the Only Unidentified TeV Gamma-Ray Source.

DAMIANI, F. *Chandra* X-Ray Observation of the Orion Nebula Cluster. I. Detection, Identification, and Determination of X-Ray Luminosities. *E. Flaccomio, F. Damiani, G. Micela, S. Sciortino, F. R. Harnden, Jr., S. S. Murray, & S. J. Wolk.* 582, 382 (2003)

Chandra X-Ray Observation of the Orion Nebula Cluster. II. Relationship between X-Ray Activity Indicators and Stellar Parameters. *E. Flaccomio, F. Damiani, G. Micela, S. Sciortino, F. R. Harnden, Jr., S. S. Murray, & S. J. Wolk.* 582, 398 (2003)

Spectral Visibility of the Nucleus of M33 in a *Chandra*/ACIS Observation. *V. La Parola, F. Damiani, G. Fabbiano, & G. Peres.* 583, 758 (2003)

Chandra Observations of the Young Open Cluster NGC 2516. *F. Damiani, E. Flaccomio, G. Micela, S. Sciortino, F. R. Harnden, Jr., S. S. Murray, S. J. Wolk, & R. D. Jeffries.* 588, 1009 (2003)

D'AMICO, N. Accurate Mass Ratio and Heating Effects in the Dual-Line Millisecond Binary Pulsar in NGC 6397. *F. R. Ferraro, E. Sabbi, R. Gratton, A. Possenti, N. D'Amico, A. Bragaglia, & F. Camilo.* 584, L13 (2003)

The Complex Hα Line Profile of the Bright Companion to PSR J1740−5340 in NGC 6397. *E. Sabbi, R. Gratton, F. R. Ferraro, A. Bragaglia, A. Possenti, N. D'Amico, & F. Camilo.* 589, L41 (2003)

A Search for Pulsars in Quiescent Soft X-Ray Transients. I. *M. Burgay, L. Burderi, A. Possenti, N. D'Amico, R. N. Manchester, A. G. Lyne, F. Camilo, & S. Campana.* 589, 902 (2003)

See MCLAUGHLIN, M. A., et al. PSR J1847−0130: A Radio Pulsar with Magnetar Spin Characteristics.

The Puzzling Dynamical Status of the Core of the Globular Cluster NGC 6752. *F. R. Ferraro, A. Possenti, E. Sabbi, P. Lagani, R. T. Rood, N. D'Amico, & L. Origlia.* 595, 179 (2003)

Three Binary Millisecond Pulsars in NGC 6266. *A. Possenti, N. D'Amico, R. N. Manchester, F. Camilo, A. G. Lyne, J. Sarkissian, & A. Corongiu.* 599, 475 (2003)

D'AMICO, NICHI. The Helium White Dwarf Orbiting the Millisecond Pulsar in the Halo of the Globular Cluster NGC 6752. *Francesco R. Ferraro, Andrea Possenti, Elena Sabbi, & Nichi D'Amico.* 596, L211 (2003)

DAMINELI, AUGUSTO. See BARBUY, BEATRIZ, et al. Oxygen Abundance in the Template Halo Giant HD 122563.

DAMMASCH, I. Free-Free Emission in the Far-Ultraviolet Spectral Range: A Resource for Diagnosing Solar and Stellar Flare Plasmas. *U. Feldman, E. Landi, G. A. Doschek, I. Dammasch, & W. Curdt.* 593, 1226 (2003)

DANCHI, WILLIAM C. Detection of Close-In Extrasolar Giant Planets Using the Fourier-Kelvin Stellar Interferometer. *William C. Danchi, Drake Deming, Marc J. Kuchner, & Sara Seager.* 597, L57 (2003)

DANFORTH, CHARLES W. Far-Ultraviolet and Hα Spectroscopy of SNR 0057−7226 in the Small Magellanic Cloud H II Region N66. *Charles W. Danforth, Ravi Sankrit, William P. Blair, J. Christopher Howk, & You-Hua Chu.* 586, 1179 (2003)

D'ANGELO, GENNARO. Orbital Migration and Mass Accretion of Protoplanets in Three-dimensional Global Computations with Nested Grids. *Gennaro D'Angelo, Willy Kley, & Thomas Henning.* 586, 540 (2003)

Thermohydrodynamics of Circumstellar Disks with High-Mass Planets. *Gennaro D'Angelo, Thomas Henning, & Willy Kley.* 599, 548 (2003)

DANZENGLUOBU. See AMENOMORI, M., et al. Multi-TeV Gamma-Ray Flares from Markarian 421 in 2000 and 2001 Observed with the Tibet Air Shower Array.

DANZIGER, I. J. See VALENTINI, G., et al. Optical and Near-Infrared Photometry of the Type Ia Supernova 2000E in NGC 6951.

DAR, ARNON. Is the Afterglow of Gamma-Ray Burst GRB 021004 Unusual? *Shlomo Dado, Arnon Dar, & A. De Rújula.* 585, L15 (2003)

On the X-Ray Lines in the Afterglows of Gamma-Ray Bursts. *Shlomo Dado, Arnon Dar, & A. De Rújula.* 585, 890 (2003)

What We Learn from the Afterglow of GRB 021211. *Shlomo Dado, Arnon Dar, & A. De Rújula.* 593, 961 (2003)

The Supernova Associated with GRB 030329. *Shlomo Dado, Arnon Dar, & A. De Rújula.* 594, L89 (2003)

DAS, MOUSUMI. Central Mass Concentration and Bar Dissolution in Nearby Spiral Galaxies. *Mousumi Das, Peter J. Teuben, Stuart N. Vogel, Michael W. Regan, Kartik Sheth, Andrew I. Harris, & William H. Jefferys.* 582, 190 (2003)

Millimeter Observations of GRB 030329: Continued Evidence for a Two-Component Jet. *Kartik Sheth, Dale A. Frail, Stephen White, Mousumi Das, Frank Bertoldi, Fabian Walter, Shri R. Kulkarni, & Edo Berger.* 595, L33 (2003)

DAS, TAPAS K. Role of Shocked Accretion Flows in Regulating the Quasi-Periodic Oscillation of Galactic Black Hole Candidates. *Tapas K. Das.* 588, L89 (2003)

Multitransonic Black Hole Accretion Disks with Isothermal Standing Shocks. *Tapas K. Das, Jayant K. Pendharkar, & Sanjit Mitra.* 592, 1078 (2003)

DASTGEER, S. Anisotropic Turbulence in Two-dimensional Electrom Magnetohydrodynamics. *S. Dastgeer & G. P. Zank.* 599, 715 (2003)

DAUB, M. D. See RUNYAN, M. C., et al. ACBAR: The Arcminute Cosmology Bolometer Array Receiver.

See GOLDSTEIN, J. H., et al. Estimates of Cosmological Parameters Using the Cosmic Microwave Background Angular Power Spectrum of ACBAR.

DAVÉ, ROMEEL. See BERLIND, ANDREAS A., et al. The Halo Occupation Distribution and the Physics of Galaxy Formation.

X-Ray Absorption by the Low-Redshift Intergalactic Medium: A Numerical Study of the Λ Cold Dark Matter Model. *Xuelei Chen, David H. Weinberg, Neal Katz, & Romeel Davé.* 594, 42 (2003)

Lyman Break Galaxies and the Lyα Forest. *Juna A. Kollmeier, David H. Weinberg, Romeel Davé, & Neal Katz.* 594, 75 (2003)

DAVID, L. See MARKEVITCH, M., et al. *Chandra* Temperature Map of A754 and Constraints on Thermal Conduction.

DAVID, LAURENCE P. Observed Non–Steady State Cooling and the Moderate Cluster Cooling Flow Model. *Noam Soker & Laurence P. David.* 589, 770 (2003)

DAVIDGE, T. J. The Asymptomatic Giant Branch of NGC 205: The Characteristics of Carbon Stars and M Giants Identified From JHK' Images. *T. J. Davidge.* 597, 289 (2003)

DAVIDSON, J. A. CO $J = 7 \rightarrow 6$ Observations of NGC 253: Cosmic-Ray–heated Warm Molecular Gas. *C. M. Bradford, T. Nikola, G. J. Stacey, A. D. Bolatto, J. M. Jackson, M. L. Savage, J. A. Davidson, & S. J. Higdon.* 586, 891 (2003)

DAVIDSON, JACQUELINE A. Magnetic Fields in Cool Clouds within the Central 50 Parsecs of the Galaxy. *David T. Chuss, Jacqueline A. Davidson, Jessie L. Dotson, C. Darren Dowell, Roger H. Hildebrand, Giles Novak, & John E. Vaillancourt.* 599, 1116 (2003)

DAVIDSON, KRIS. Latitude-dependent Effects in the Stellar Wind of η Carinae. *Nathan Smith, Kris Davidson, Theodore R. Gull, Kazunori Ishibashi, & D. John Hillier.* 586, 432 (2003)

DAVIES, R. I. The Collimated Wind in NGC 253. *H. Sugai, R. I. Davies, & M. J. Ward.* 584, L9 (2003)

Molecular Hydrogen Excitation in Ultraluminous Infrared Galaxies. *R. I. Davies, A. Sternberg, M. Lehnert, & L. E. Tacconi-Garman.* 597, 907 (2003)

DAVILA, JOSEPH M. Electron Temperature and Speed Measurements in the Low Solar Corona: Results From the 2001 June Eclipse. *Nelson L. Reginald, O. C. St. Cyr, Joseph M. Davila, & Jeffrey W. Brosius.* 599, 596 (2003)

DAVIS, ANDREW M. Isotopic Compositions of Strontium, Zirconium, Molybdenum, and Barium in Single Presolar SiC Grains and Asymptotic Giant Branch Stars. *Maria Lugaro, Andrew M. Davis, Roberto Gallino, Michael J. Pellin, Oscar Straniero, & Franz Käppeler.* 593, 486 (2003)

DAVIS, C. J. A Ring-Shaped Embedded Young Stellar (Proto)Cluster. *M. S. Nanda Kumar, D. K. Ojha, & C. J. Davis.* 598, 1107 (2003)

DAVIS, DAVID S. An X-Ray Atlas of Groups of Galaxies. *John S. Mulchaey, David S. Davis, Richard F. Mushotzky, & David Burstein.* 145, 39 (2003)

Chandra Observations of Point Sources in A2255. *David S. Davis, Neal A. Miller, & Richard F. Mushotzky.* 597, 202 (2003)

DAVIS, M. See FELDMAN, H., et al. An Estimate of Ω_m without Conventional Priors.

DAVIS, MARC. See MADGWICK, DARREN S., et al. The DEEP2 Galaxy Redshift Survey: Spectral Classification of Galaxies at $z \sim 1$.

DAVIS, S. See MASON, K. O., et al. The X-Ray Spectrum of the Seyfert 1 Galaxy Markarian 766: Dusty Warm Absorber or Relativistic Emission Lines?

DAVIS, SANFORD S. A Simplified Model for an Evolving Protoplanetary Nebula. *Sanford S. Davis.* 592, 1193 (2003)

DAVIS, SUMNER P. FeH Absorption in the Near-Infared Spectra of Late M and L Dwarfs. *Michael Cushing, John T. Rayner, Sumner P. Davis, & William D. Vacca.* 582, 1066 (2003)

DAVOUR, A. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

DAWSON, J. M. Interpenetrating Plasma Shells: Near-Equipartition Magnetic Field Generation and Nonthermal Particle Acceleration. *L. O. Silva, R. A. Fonseca, J. W. Tonge, J. M. Dawson, W. B. Mori, & M. V. Medvedev.* 596, L121 (2003)

DAWSON, KYLE S. See LAROQUE, SAMUEL J., et al. Sunyaev-Zeldovich Effect Imaging of MACS Galaxy Clusters at $z > 0.5$.

DAYAL, ADITYA. See KRAEMER, KATHLEEN E., et al. Five Star-forming Cores in the Galactic Ring Survey: A Mid-Infrared Study.

DEAN, A. J. *BeppoSAX* Average Spectra of Seyfert Galaxies. *A. Malizia, L. Bassani, J. B. Stephen, G. Di Cocco, F. Fiore, & A. J. Dean.* 589, L17 (2003)

DEBATTISTA, VICTOR P. Direct Confirmation of Two Pattern Speeds in the Double-barred Galaxy NGC 2950. *E. M. Corsini, Victor P. Debattista, & J. A. L. Aguerri.* 599, L29 (2003)

DEBERNARDIS, P. See CRILL, B. P., et al. BOOMERANG: A Balloon-Borne Millimeter-Wave Telescope and Total Power Receiver for Mapping Anisotropy in the Cosmic Microwave Background.

See RUHL, J. E., et al. Improved Measurement of the Angular Power Spectrum of Temperature Anisotropy in the Cosmic Microwave Background from Two New Analyses of BOOMERANG Observations.

DE BLOK, W. J. G. A Limit on the Cosmological Mass Density and Power Spectrum from the Rotation Curves of Low Surface Brightness Galaxies. *Stacy S. McGaugh, Michael K. Barker, & W. J. G. de Blok.* 584, 566 (2003)

DE BREUK, CARLOS. An Obscured Radio Galaxy at High Redshift. *Michiel Reuland, Wil van Breugel, Huub Röttgering, Wim de Vries, Carlos De Breuk, & Daniel Stern.* 582, L71 (2003)

DE BRUYN, A. G. See KOOPMANS, L. V. E., et al. Extrinsic Radio Variability of JVAS/CLASS Gravitational Lenses.

DE BUIZER, J. M. A Search for Mid-Infrared Emission from Hot Molecular Core Candidates. *J. M. De Buizer, J. T. Radomski, C. M. Telesco, & R. K. Piña.* 598, 1127 (2003)

DE BUIZER, JAMES M. Resolved Mid-Infrared Emission in the Narrow-Line Region of NGC 4151. *James T. Radomski, Robert K. Piña, Christopher Packham, Charles M. Telesco, James M. De Buizer, R. Scott Fisher, & A. Robinson.* 587, 117 (2003)

DECIN, G. The Age Dependence of the Vega Phenomenon: Theory. *C. Dominik & G. Decin.* 598, 626 (2003)

Age Dependence of the Vega Phenomenon: Observations. *G. Decin, C. Dominik, L. B. F. M. Waters, & C. Waelkens.* 598, 636 (2003)

DE CLERCQ, C. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

DECOURCHELLE, A. A New X-Ray Flare from the Galactic Nucleus Detected with the *XMM-Newton* Photon Imaging Cameras. *A. Goldwurm, E. Brion, P. Goldoni, P. Ferrando, F. Daigne, A. Decourchelle, R. S. Warwick, & P. Predehl.* 584, 751 (2003)

DE DIEGO, J. A. See STEPANIAN, J. A., et al. A Multiwavelength Study of Narrow-Line Seyfert 1 Galaxies from the Second Byurakan Survey.

See BÖTTCHER, M., et al. Coordinated Multiwavelength Observations of BL Lacertae in 2000.

DE GRANDI, SABRINA. SMAUG: A New Technique for the Deprojection of Galaxy Clusters. *Fabio Pizzolato, Silvano Molendi, Simona Ghizzardi, & Sabrina De Grandi.* 592, 62 (2003)

DE GRIJS, RICHARD. The Missing Link in Star Cluster Evolution. *Richard de Grijs, Nate Bastian, & Henney J. G. L. M. Lamers.* 583, L17 (2003)

See ESKRIDGE, PAUL B., et al. Ultraviolet-Optical Pixel Maps of Face-on Spiral Galaxies: Clues for Dynamics and Star Formation Histories.

DEGUCHI, SHUJI. Linear Polarization Observations of Water Masers in W3 IRS 5. *Hiroshi Imai, Shinji Horiuchi, Shuji Deguchi, & Osamu Kameya.* 595, 285 (2003)

DEHNEN, WALTER. The Oort Constants Measured from Proper Motions. *Rob P. Olling & Walter Dehnen.* 599, 274 (2003)

DE JAGER, C. See LOBEL, A., et al. High-Resolution Spectroscopy of the Yellow Hypergiant ρ Cassiopeiae from 1993 through the Outburst of 2000–2001.

DE JAGER, O. C. Modeling the TeV Gamma-Ray Spectra of Two Low-Redshift Active Galactic Nuclei: Markarian 501 and Markarian 421. *A. Konopelko, A. Mastichiadis, J. Kirk, O. C. de Jager, & F. W. Stecker.* 597, 851 (2003)

DE JAGER, OCKER C. Constraints on Pulsar Magnetospheric and Wind Parameters for the Compact Nebulae of Vela and PSR B1706−44. *Ramotholo R. Sefako & Ocker C. de Jager.* 593, 1013 (2003)

DEJONGHE, H. The Puzzlingly Large Ca II Triplet Absorption in Dwarf Elliptical Galaxies. *D. Michielsen, S. De Rijcke, H. Dejonghe, W. W. Zeilinger, & G. K. T. Hau.* 597, L21 (2003)

DE JULI, M. C. Dusty Molecular Cloud Collapse in the Presence of Alfvén Waves. *D. Falceta-Goncalves, M. C. de Juli, & V. Jatenco-Pereira.* 597, 970 (2003)

DEKEL, AVISHAI. Dark Halo Cusp: Asymptotic Convergence. *Avishai Dekel, Itai Arad, Jonathan Devor, & Yuval Birnboim.* 588, 680 (2003)

DE KOOL, MARTIJN. Contrasting the Ultraviolet and X-Ray O VI Column Density Inferred for the Outflow in NGC 5548. *Nahum Arav, Jelle Kaastra, Katrien Steenbrugge, Bert Brinkman, Rick Edelson, Kirk T. Korista, & Martijn de Kool.* 590, 174 (2003)

DE LA CALLE PEREZ, I. See HOLDER, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.

Search for High-Energy Gamma Rays from an X-Ray–Selected Blazar Sample. *I. de la Calle Pérez, I. H. Bond, P. J. Boyle, S. M. Bradbury, J. H. Buckley, D. A. Carter-Lewis, O. Celik, W. Cui, C. Dowdall, C. Duke, A. Falcone, D. J. Fegan, S. J. Fegan, J. P. Finley, L. Fortson, J. A. Gaidos, K. Gibbs, S. Gammell, J. Hall, T. A. Hall, A. M. Hillas, J. Holder, D. Horan, M. Jordan, M. Kertzman, D. Kieda, J. Kildea, J. Knapp, K. Kosack, H. Krawczynski, F. Krennrich, S. LeBohec, E. T. Linton, J. Lloyd-Evans, P. Moriarty, D. Müller, T. N. Nagai, R. A. Ong, M. Page, R. Pallassini, D. Petry, B. Power-Mooney, J. Quinn, P. Rebillot, P. T. Reynolds, H. J. Rose, M. Schroedter, G. H. Sembroski, S. P. Swordy, V. V. Vassiliev, S. P. Wakely, G. Walker, & T. C. Weekes.* 599, 909 (2003)

DE LA FUENTE, ANTON. Detection of OH Absorption against PSR B1849+00. *Snežana Stanimirović, Joel M. Weisberg, John M. Dickey, Anton de la Fuente, Kathryn Devine, Abigail Hedden, & Stuart B. Anderson.* 592, 953 (2003)

DELAIN, K. M. X-Ray Point Sources in the Sombrero Galaxy: Supersoft Sources, the Globular Cluster/Low-Mass X-Ray Binary Connection, and an Overview. *R. DiStefano, A. K. H. Kong, M. L. VanDalfsen, W. E. Harris, S. S. Murray, & K. M. Delain.* 599, 1067 (2003)

DELAIN, KISHA M. See KURASZKIEWICZ, JOANNA K., et al. The Far-Infrared Spectral Energy Distributions of X-Ray–selected Active Galaxies.

DELANEY, T. The Identification of Infrared Synchrotron Radiation from Cassiopeia A. *T. J. Jones, L. Rudnick, T. DeLaney, & J. Bowden.* 587, 227 (2003)

DELANEY, TRACEY. The First Measurement of Cassiopeia A's Forward Shock Expansion Rate. *Tracey DeLaney & Lawrence Rudnick.* 589, 818 (2003)

DELAY, R. S. See ATKINS, R., et al. Observation of TeV Gamma Rays from the Crab Nebula with Milagro Using a New Background Rejection Technique.

DELLA CECA, R. See RISALITI, G., et al. Revealing the Active Galactic Nucleus in the Superantennae through *L*-Band Spectroscopy.

DELL'ANTONIO, I. P. Weak Lensing Discovery and Tomography of a Cluster at $z = 0.68$. *D. Wittman, V. E. Margoniner, J. A. Tyson, J. G. Cohen, A. C. Becker, & I. P. Dell'Antonio.* 597, 218 (2003)

DELLA VALLE, M. See DRAKE, JEREMY J., et al. The Extraordinary X-Ray Light Curve of the Classical Nova V1494 Aquilae (1999 No. 2) in Outburst: The Discovery of Pulsations and a "Burst."

DELLA VALLE, MASSIMO. The Rate and the Origin of Type Ia Supernovae in Radio Galaxies. *Massimo Della Valle & Nino Panagia.* 587, L71 (2003)

DELLO RUSSO, NEIL. CO Emission from Disks around AB Aurigae and HD 141569: Implications for Disk Structure and Planet Formation Timescales. *Sean D. Brittain, Terrence W. Rettig, Theodore Simon, Craig Kulesa, Michael A. DiSanti, & Neil Dello Russo.* 588, 535 (2003)

DELOYE, CHRISTOPHER J. White Dwarf Donors in Ultracompact Binaries: The Stellar Structure of Finite-Entropy Objects. *Christopher J. Deloye & Lars Bildsten.* 598, 1217 (2003)

DEL POPOLO, A. Improvements in the *M-T* Relation, Mass Function, and Measured Value of Ω_m through Cluster Evolution. *A. Del Popolo.* 599, 723 (2003)

DEL SORDO, S. Spectral and Temporal Behavior of the Black Hole Candidate XTE J1118+480 as Observed with *BeppoSAX*. *F. Frontera, L. Amati, A. A. Zdziarski, T. Belloni, S. Del Sordo, N. Masetti, M. Orlandini, & E. Palazzi.* 592, 1110 (2003)

DE LUCA, A. Search for the Optical Counterpart of the Vela Pulsar X-Ray Nebula. *R. P. Mignani, A. De Luca, O. Kargaltsev, G. G. Pavlov, S. Zaggia, P. A. Caraveo, & W. Becker.* 594, 419 (2003)

DELUCA, E. E. Constraints on Active Region Coronal Heating. *S. K. Antiochos, J. T. Karpen, E. E. DeLuca, L. Golub, & P. Hamilton.* 590, 547 (2003)

DE LUCIA, FRANK C. Trans-Ethyl Methyl Ether: Assignments and Predictions up to 400 GHz for the Vibrational-Torsional Ground State. *Ulrike Fuchs, Gisbert Winnewisser, Peter Groner, Frank C. De Lucia, & Eric Herbst.* 144, 277 (2003)

See MEDVEDEV, IVAN, et al. The Millimeter- and Submillimeter-Wave Spectrum of the Trans-Trans Conformer of Diethyl Ether ($C_2H_5OC_2H_5$).

DEL ZANNA, G. CHIANTI—An Atomic Database for Emission Lines. IV. Proton Rates and Other Improvements. *P. R. Young, G. del Zanna, E. Landi, K. P. Dere, H. E. Mason, & M. Landini.* 144, 135 (2003)

DE MARCO, DANIEL. On the Generation of Ultra–High-Energy Cosmic Rays in Gamma-Ray Bursts: A Reappraisal. *Mario Vietri, Daniel De Marco, & Dafne Guetta.* 592, 378 (2003)

DEMARCO, R. See BLAKESLEE, JOHN P., et al. Advanced Camera for Surveys Photometry of the Cluster RDCS 1252.9−2927: The Color-Magnitude Relation at $z = 1.24$.

DEMARINO, CHRISTINE. Stability of Standing Accretion Shocks, with an Eye toward Core-Collapse Supernovae. *John M. Blondin, Anthony Mezzacappa, & Christine DeMarino.* 584, 971 (2003)

DEMARQUE, P. Global Parameter and Helioseismic Tests of Solar Variability Models. *L. H. Li, S. Basu, S. Sofia, F. J. Robinson, P. Demarque, & D. B. Guenther.* 591, 1267 (2003)

DEMARQUE, PIERRE. The Y^2 Stellar Evolutionary Tracks. *Sukyoung K. Yi, Yong-Cheol Kim, & Pierre Demarque.* 144, 259 (2003)

DE MARTINO, DOMITILLA. See GÄNSICKE, BORIS T., et al. Anomalous Ultraviolet Line Flux Ratios in the Cataclysmic variables 1RXS J232953.9+062814, CE 315, BZ Ursae Majoris, and EY Cygni observed with the *Hubble Space Telescope* Space Telescope Imaging Spectrograph.

DEMERS, H. See MARCHENKO, S. V., et al. The Unusual 2001 Periastron Passage in the "Clockwork" Colliding-Wind Binary WR 140.

DE MESSIÈRES, GENEVIÈVE E. High-Resolution *Chandra* Spectroscopy of τ Scorpii: A Narrow-Line X-Ray Spectrum from a Hot Star. *David H. Cohen, Geneviève E. de Messières, Joseph J. MacFarlane, Nathan A. Miller, Joseph P. Cassinelli, Stanley P. Owocki, & Duane A. Liedahl.* 586, 495 (2003)

DEMIANSKI, M. Observational Estimates of the Initial Power Spectrum at Small Scale from Lyα Absorbers. *M. Demianski & A. Doroshkevich.* 597, 81 (2003)

DEMIAŃSKI, MAREK. A Comparison of Measured Crab and Vela Glitch Healing Parameters with Predictions of Neutron Star Models. *Fronefield Crawford & Marek Demiański.* 595, 1052 (2003)

DEMING, DRAKE. Infrared Observations during the Secondary Eclipse of HD 209458b. I. 3.6 Micron Occultation Spectroscopy Using the Very Large Telescope. *L. Jeremy Richardson, Drake Deming, Guenter Wiedemann, Cedric Goukenleuque, David Steyert, Joseph Harrington, & Larry W. Esposito.* 584, 1053 (2003)

Infrared Observations During the Secondary Eclipse of HD 209458b. II. Strong Limits on the Infrared Spectrum near 2.2 Microns. *L. Jeremy Richardson, Drake Deming, & Sara Seager.* 597, 581 (2003)

Detection of Close-In Extrasolar Giant Planets Using the Fourier-Kelvin Stellar Interferometer. *William C. Danchi, Drake Deming, Marc J. Kuchner, & Sara Seager.* 597, L57 (2003)

DÉMOULIN, P. The Long-Term Evolution of AR 7978: The Scalings of the Coronal Plasma Parameters with the Mean Photospheric Magnetic Field. *L. van Driel-Gesztelyi, P. Démoulin, C. H. Mandrini, L. Harra, & J. A. Klimchuk.* 586, 579 (2003)

The Long-Term Evolution of AR 7978: Testing Coronal Heating Models. *P. Démoulin, L. van Driel-Gesztelyi, C. H. Mandrini, J. A. Klimchuk, & L. Harra.* 586, 592 (2003)

DENEAULT, ETHAN A.-N. Supernova Reverse Shocks: SiC Growth and Isotopic Composition. *Ethan A.-N. Deneault, Donald D. Clayton, & Alexander Heger.* 594, 312 (2003)

DENG, J. See KAWABATA, K. S., et al. On the Spectrum and Spectropolarimetry of Type Ic Hypernova SN 2003dh/GRB 030329.

DENG, JINGSONG. A Two-Component Model for the Light Curves of Hypernovae. *Keiichi Maeda, Paolo A. Mazzali, Jingsong Deng, Ken'ichi Nomoto, Yuzuru Yoshii, Hiroyuki Tomita, & Yukiyasu Kobayashi.* 593, 931 (2003)

DENG, JINSONG. See YOSHII, YUZURU, et al. The Optical/Near-Infrared Light Curves of SN 2002ap for the First 140 Days after Discovery.

See MAZZALI, PAOLO A., et al. The Type Ic Hypernova SN 2003dh/GRB 030329.

DEN HARTOG, E. A. Improved Laboratory Transition Probabilities for Nd II and Application to the Neodymium Abundances of the Sun and Three Metal-Poor Stars. *E. A. Den Hartog, J. E. Lawler, C. Sneden, & J. J. Cowan.* 148, 543 (2003)

DEN HARTOG, P. R. See MEREGHETTI, S., et al. *Integral* and *XMM-Newton* Observations of the Weak Gamma-Ray Burst GRB 030227.

DEN HERDER, JAN WILLEM. See SAKO, MASAO, et al. Can a Dusty Warm Absorber Model Reproduce the Soft X-Ray Spectra of MCG −6-30-15 and Markarian 766?

DENISSENKOV, PAVEL A. The Abundance Evolution of Oxygen, Sodium, and Magnesium in Extremely Metal-Poor Intermediate-Mass Stars: Implications for the Self-Pollution Scenario in Globular Clusters. *Pavel A. Denissenkov & Falk Herwig.* 590, L99 (2003)

Canonical Extra Mixing in Low-Mass Red Giants. *Pavel A. Denissenkov & Don A. VandenBerg.* 593, 509 (2003)

Thermal Stability of Rotating Low-Mass Subgiants and Red Giants. *Pavel A. Denissenkov & Don A. VandenBerg.* 598, 1246 (2003)

DENKER, C. High Spatial Resolution Observations of Pores and the Formation of a Rudimentary Penumbra. *G. Yang, Y. Xu, H. Wang, & C. Denker.* 597, 1190 (2003)

DENNIS, B. R. See LIN, R. P., et al. *RHESSI* Observations of Particle Acceleration and Energy Release in an Intense Solar Gamma-Ray Line Flare.

DENNIS, BRIAN R. Rapid Acceleration of a Coronal Mass Ejection in the Low Corona and Implications for Propagation. *Peter T. Gallagher, Gareth R. Lawrence, & Brian R. Dennis.* 588, L53 (2003)

See SHARE, GERALD H., et al. High-Resolution Observation of the Solar Positron-Electron Annihilation Line.

Directionality of Flare-accelerated α-Particles at the Sun. *Gerald H. Share, Ronald J. Murphy, David M. Smith, Robert P. Lin, Brian R. Dennis, & Richard A. Schwartz.* 595, L89 (2003)

DENT, W. R. F. See HOLLAND, W. S., et al. Submillimeter Observations of an Asymmetric Dust Disk around Fomalhaut.

DEPAGNE, ERIC. See BARBUY, BEATRIZ, et al. Oxygen Abundance in the Template Halo Giant HD 122563.

DE PASQUALE, M. A Comparative Study of the X-Ray Afterglow Properties of Optically Bright and Dark Gamma-Ray Bursts. *M. De Pasquale, L. Piro, R. Perna, E. Costa, M. Feroci, G. Gandolfi, J. in 't Zand, L. Nicastro, F. Frontera, L. A. Antonelli, F. Fiore, & G. Stratta.* 592, 1018 (2003)

DE PATER, IMKE. A Giant Outburst at Millimeter Wavelengths in the Orion Nebula. *Geoffrey C. Bower, Richard L. Plambeck, Alberto Bolatto, Nate McCrady, James R. Graham, Imke de Pater, Michael C. Liu, & Frederick K. Baganoff.* 598, 1140 (2003)

DE PETRIS, M. See BATTISTELLI, E. S., et al. Triple Experiment Spectrum of the Sunyaev-Zel'dovich Effect in the Coma Cluster: H_0.

DE PONTIEU, B. Correlations on Arcsecond Scales between Chromospheric and Transition Region Emission in Active Regions. *B. De Pontieu, T. Tarbell, & R. Erdélyi.* 590, 502 (2003)

Intensity Oscillations in the Upper Transition Region above Active Region Plage. *B. De Pontieu, R. Erdélyi, & A. G. de Wijn.* 595, L63 (2003)

DEPOY, D. L. Sensitivity of Transit Searches to Habitable-Zone Planets. *Andrew Gould, Joshua Pepper, & D. L. DePoy.* 594, 533 (2003)

See FIELDS, DALE L., et al. High-Precision Limb-Darkening Measurement of a K3 Giant Using Microlensing.

De Propris, Roberto. The K-selected Butcher-Oemler Effect. *Roberto De Propris, S. A. Stanford, Peter R. Eisenhardt, & Mark Dickinson.* 598, 20 (2003)

Dere, K. P. Identification of Solar Sources of Major Geomagnetic Storms between 1996 and 2000. *J. Zhang, K. P. Dere, R. A. Howard, & V. Bothmer.* 582, 520 (2003)

CHIANTI—An Atomic Database for Emission Lines. IV. Proton Rates and Other Improvements. *P. R. Young, G. del Zanna, E. Landi, K. P. Dere, H. E. Mason, & M. Landini.* 144, 135 (2003)

De Rijcke, S. The Puzzlingly Large Ca II Triplet Absorption in Dwarf Elliptical Galaxies. *D. Michielsen, S. De Rijcke, H. Dejonghe, W. W. Zeilinger, & G. K. T. Hau.* 597, L21 (2003)

Dermer, Charles D. Neutral Beams from Blazar Jets. *Armen M. Atoyan & Charles D. Dermer.* 586, 79 (2003)

Nonthermal Particles and Radiation Produced by Cluster Merger Shocks. *Robert C. Berrington & Charles D. Dermer.* 594, 709 (2003)

Dermott, Stanley F. Resonant Structure in the Kuiper Disk: An Asymmetric Plutino Disk. *Elizabeth K. Holmes, Stanley F. Dermott, Bo Å. S. Gustafson, & Keith Grogan.* 597, 1211 (2003)

De Robertis, Michael. The Extinction and Distance of Maffei 1. *Robin L. Fingerhut, Marshall L. McCall, Michael De Robertis, Robin L. Kingsburgh, Michael Komljenovic, Henry Lee, & Ronald J. Buta.* 587, 672 (2003)

DeRosa, Marc L. Asterospheric Magnetic Fields and Winds of Cool Stars. *Carolus J. Schrijver, Marc L. DeRosa, & Alan M. Title.* 590, 493 (2003)

De Rújula, A. Is the Afterglow of Gamma-Ray Burst GRB 021004 Unusual? *Shlomo Dado, Arnon Dar, & A. De Rújula.* 585, L15 (2003)

On the X-Ray Lines in the Afterglows of Gamma-Ray Bursts. *Shlomo Dado, Arnon Dar, & A. De Rújula.* 585, 890 (2003)

What We Learn from the Afterglow of GRB 021211. *Shlomo Dado, Arnon Dar, & A. De Rújula.* 593, 961 (2003)

The Supernova Associated with GRB 030329. *Shlomo Dado, Arnon Dar, & A. De Rújula.* 594, L89 (2003)

Desai, M. I. Evidence for a Suprathermal Seed Population of Heavy Ions Accelerated by Interplanetary Shocks near 1 AU. *M. I. Desai, G. M. Mason, J. R. Dwyer, J. E. Mazur, R. E. Gold, S. M. Krimigis, C. W. Smith, & R. M. Skoug.* 588, 1149 (2003)

See Slocum, P. L., et al. Elemental Fractionation in Small Solar Energetic Particle Events.

Desert, J.-M. See André, M. K., et al. Oxygen Gas-Phase Abundance Revisited.

Deshmukh, P. C. Interchannel Coupling in Ionic Photoionization far above Threshold: The Neon Isoelectronic Sequence. *H. S. Chakraborty, P. C. Deshmukh, & S. T. Manson.* 595, 1307 (2003)

Desiati, P. See Ahrens, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

Des Jardins, Angela C. Preflare Phenomena in Eruptive Flares. *Angela C. Des Jardins & Richard C. Canfield.* 598, 678 (2003)

de Souza, R. E. NGC 4608 and NGC 5701: Barred Galaxies without Disks? *D. A. Gadotti & R. E. de Souza.* 583, L75 (2003)

Dessauges-Zavadsky, M. Metal Abundances and Kinematics of Quasar Absorbers. II. Absorption Systems toward Q0347−3819 and APM BR J0307−4945. *S. A. Levshakov, I. I. Agafonova, S. D'Odorico, A. M. Wolfe, & M. Dessauges-Zavadsky.* 582, 596 (2003)

Desyatnyk, Oleksandr. See Medvedev, Ivan, et al. The Millimeter- and Submillimeter-Wave Spectrum of the Trans-Trans Conformer of Diethyl Ether ($C_2H_5OC_2H_5$).

deTroia, G. See Crill, B. P., et al. BOOMERANG: A Balloon-Borne Millimeter-Wave Telescope and Total Power Receiver for Mapping Anisotropy in the Cosmic Microwave Background.

De Troia, G. See Ruhl, J. E., et al. Improved Measurement of the Angular Power Spectrum of Temperature Anisotropy in the Cosmic Microwave Background from Two New Analyses of BOOMERANG Observations.

Deustua, S. E. See Knop, R. A., et al. New Constraints on Ω_M, Ω_Λ, and w from an Independent Set of 11 High-Redshift Supernovae Observed with the *Hubble Space Telescope*.

Deustua, Susana E. See Hawley, Suzanne L., et al. Multiwavelength Observations of Flares on AD Leonis.

Deutsch, Lynne K. See Kraemer, Kathleen E., et al. Five Star-forming Cores in the Galactic Ring Survey: A Mid-Infrared Study.

Dever, J. W. Carbon Monoxide Entrapment in Interstellar Ice Analogs. *M. P. Collings, J. W. Dever, H. J. Fraser, M. R. S. McCoustra, & D. A. Williams.* 583, 1058 (2003)

De Villiers, Jean-Pierre. A Numerical Method for General Relativistic Magnetohydrodynamics. *Jean-Pierre De Villiers & John F. Hawley.* 589, 458 (2003)

Global General Relativistic Magnetohydrodynamic Simulations of Accretion Tori. *Jean-Pierre De Villiers & John F. Hawley.* 592, 1060 (2003)

Magnetically Driven Accretion Flows in the Kerr Metric. I. Models and Overall Structure. *Jean-Pierre De Villiers, John F. Hawley, & Julian H. Krolik.* 599, 1238 (2003)

Devine, K. E. Does Tiny-Scale Atomic Structure Exist in the Interstellar Medium? *S. Stanimirović, J. M. Weisberg, A. Hedden, K. E. Devine, & J. T. Green.* 598, L23 (2003)

Phase-Referenced Very Long Baseline Array Observations of OH Masers at 4765 MHz. *Patrick Palmer, W. M. Goss, & K. E. Devine.* 599, 323 (2003)

Devine, Kathryn. Detection of OH Absorption against PSR B1849+00. *Snežana Stanimirović, Joel M. Weisberg, John M. Dickey, Anton de la Fuente, Kathryn Devine, Abigail Hedden, & Stuart B. Anderson.* 592, 953 (2003)

Devlin, M. J. The MAT/TOCO Measurement of the Angular Power Spectrum of the Cosmic Microwave Background at 30 and 40 GHz. *M. R. Nolta, M. J. Devlin, W. B. Dorwart, A. D. Miller, L. A. Page, J. Puchalla, E. Torbet, & H. T. Tran.* 598, 97 (2003)

Devor, Jonathan. Dark Halo Cusp: Asymptotic Convergence. *Avishai Dekel, Itai Arad, Jonathan Devor, & Yuval Birnboim.* 588, 680 (2003)

de Vries, Wim. An Obscured Radio Galaxy at High Redshift. *Michiel Reuland, Wil van Breugel, Huub Röttgering, Wim de Vries, Carlos De Breuk, & Daniel Stern.* 582, L71 (2003)

See Reuland, Michiel, et al. Giant Lyα Nebulae Associated with High-Redshift Radio Galaxies.

Dewangan, G. C. *XMM-Newton* Observation of Broad Iron Kα Emission from Seyfert 1.9 Galaxy MCG −5-23-16. *G. C. Dewangan, R. E. Griffiths, & N. J. Schurch.* 592, 52 (2003)

DeWarf, L. E. Intrinsic Properties of the Young Stellar Object SU Aurigae. *L. E. DeWarf, J. F. Sepinsky, E. F. Guinan, I. Ribas, & I. Nadalin.* 590, 357 (2003)

Dewdney, P. E. Neutral Hydrogen Associated with NGC 7129. *H. E. Matthews, C. R. Purton, R. S. Roger, P. E. Dewdney, & G. F. Mitchell.* 592, 176 (2003)

de Wijn, A. G. Motions of Isolated G-Band Bright Points in the Solar Photosphere. *P. Nisenson, A. A. van Ballegooijen, A. G. de Wijn, & P. Suetterlin.* 587, 458 (2003)

Intensity Oscillations in the Upper Transition Region above Active Region Plage. *B. De Pontieu, R. Erdélyi, & A. G. de Wijn.* 595, L63 (2003)

Dewulf, J.-P. See Ahrens, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

Dey, Arjun. Massive Elliptical Galaxies at High Redshift: NICMOS Imaging of $z \approx 1$ Radio Galaxies. *Andrew W. Zirm, Mark Dickinson, & Arjun Dey.* 585, 90 (2003)

See Reuland, Michiel, et al. Giant Lyα Nebulae Associated with High-Redshift Radio Galaxies.

Red Galaxy Clustering in the NOAO Deep Wide-Field Survey. *Michael J. I. Brown, Arjun Dey, Buell T. Jannuzi, Tod R. Lauer, Glenn P. Tiede, & Valerie J. Mikles.* 597, 225 (2003)

Dey, Jishnu. Origin and Interpretation of Kilohertz Quasi-periodic Oscillations from Strange Stars in an X-Ray Binary Systems: Theoretical Hydrodynamical Description. *Banibrata Mukhopadhyay, Subharthi Ray, Jishnu Dey, & Mira Dey.* 584, L83 (2003)

Dey, Mira. Origin and Interpretation of Kilohertz Quasi-periodic Oscillations from Strange Stars in an X-Ray Binary Systems: Theoretical Hydrodynamical Description. *Banibrata Mukhopadhyay, Subharthi Ray, Jishnu Dey, & Mira Dey.* 584, L83 (2003)

DeYoung, T. See Ahrens, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

See Atkins, R., et al. Observation of TeV Gamma Rays from the Crab Nebula with Milagro Using a New Background Rejection Technique.

Dezalay, J.-P. See Crew, G. B., et al. *HETE-2* Localization and Observation of the Bright, X-Ray–rich Gamma-Ray Burst GRB 021211.

DeZeeuw, D. L. See Roussev, I. I., et al. A Three-dimensional Model of the Solar Wind Incorporating Solar Magnetogram Observations.

DeZeeuw, Darren L. A Three-dimensional Flux Rope Model for Coronal Mass Ejections Based on a Loss of Equilibrium. *Ilia I. Roussev, Terry G. Forbes, Tamas I. Gombosi, Igor V. Sokolov, Darren L. DeZeeuw, & Joachim Birn.* 588, L45 (2003)

Probing the Edge of the Solar System: Formation of an Unstable Jet-Sheet. *Merav Opher, Paulett C. Liewer, Tamas I. Gombosi, Ward Manchester, Darren L. DeZeeuw, Igor Sokolov, & Gabor Toth.* 591, L61 (2003)

DE ZEEUW, TIM. Space Telescope Imaging Spectrograph Spectroscopy of the Emission-Line Gas in the Nuclei of Nearby FR-I Galaxies. *Jacob Noel-Storr, Stefi A. Baum, Gijs Verdoes Kleijn, Roeland P. van der Marel, Christoper P. O'Dea, Tim de Zeeuw, & C. Marcella Carollo.* 148, 419 (2003)

DE ZOTTI, G. Decline of the Space Density of Quasars between $z = 2$ and $z = 4$. *M. Vigotti, R. Carballo, C. R. Benn, G. De Zotti, R. Fanti, J. I. Gonzalez Serrano, K.-H. Mack, & J. Holt.* 591, 43 (2003)

Sunyaev-Zel'dovich Effects from Quasars in Galaxies and Groups. *A. Lapi, A. Cavaliere, & G. De Zotti.* 597, L93 (2003)

DHILLON, V. S. See ARAUJO-BETANCOR, S., et al. System Parameters of DW Ursae Majoris.

DIAMOND, P. J. A Movie of a Star: Multiepoch Very Long Baseline Array Imaging of the SiO Masers toward the Mira Variable TX Cam. *P. J. Diamond & A. J. Kemball.* 599, 1372 (2003)

DIAMOND, PHILIP J. See IMAI, HIROSHI, et al. The Three-dimensional Kinematics of Water Masers around the Semiregular Variable RT Virginis.

VLBI Imaging of Luminous Infrared Galaxies: Active Galactic Nucleus Cores in Markarian 231, UGC 5101, and NGC 7469. *Carol J. Lonsdale, Colin J. Lonsdale, Harding E. Smith, & Philip J. Diamond.* 592, 804 (2003)

DÍAZ, RUBÉN J. Circumnulear Structures in the Interacting Seyfert Galaxy of NGC 1241: Kinematics and Optical/Infrared Morphology. *Rubén J. Díaz, Horacio Dottori, Nelson Vera-Villamizar, & Gustavo Carranza.* 597, 860 (2003)

DI CARLO, E. See VALENTINI, G., et al. Optical and Near-Infrared Photometry of the Type Ia Supernova 2000E in NGC 6951.

DICKEL, J. R. Discovery of Radio/X-Ray/Optical–resolved Supernova Remnants in the Center of the Andromeda Galaxy. *A. K. H. Kong, L. O. Sjouwerman, B. F. Williams, M. R. Garcia, & J. R. Dickel.* 590, L21 (2003)

Supernova Remnant Candidates in the 30 Doradus Nebula. *J. S. Lazendic, J. R. Dickel, & P. A. Jones.* 596, 287 (2003)

DICKENSON, MARK. Lyman Break Galaxies at Redshift $z \sim 3$: Survey Description and Full Data Set. *Charles C. Steidel, Kurt L. Adelberger, Alice E. Shapley, Max Pettini, Mark Dickenson, & Mauro Giavalisco.* 592, 728 (2003)

DICKEY, J. M. A Neutral Hydrogen Self-Absorption Cloud in the Southern Galactic Plane Survey. *D. W. Kavars, J. M. Dickey, N. M. McClure-Griffiths, B. M. Gaensler, & A. J. Green.* 598, 1048 (2003)

DICKEY, JOHN M. Resolving the Kinematic Distance Ambiguity toward Galactic H II Regions. *Michal A. Kolpak, James M. Jackson, T. M. Bania, D. P. Clemens, & John M. Dickey.* 582, 756 (2003)

Fitting Together the H I Absorption and Emission in the Southern Galactic Plane Survey. *John M. Dickey, N. M. McClure-Griffiths, B. M. Gaensler, & A. J. Green.* 585, 801 (2003)

Detection of OH Absorption against PSR B1849+00. *Snežana Stanimirović, Joel M. Weisberg, John M. Dickey, Anton de la Fuente, Kathryn Devine, Abigail Hedden, & Stuart B. Anderson.* 592, 953 (2003)

Loops, Drips, and Walls in the Galactic Chimney GSH 277+00+36. *N. M. McClure-Griffiths, John M. Dickey, B. M. Gaensler, & A. J. Green.* 594, 833 (2003)

DICKINSON, MARK. Massive Elliptical Galaxies at High Redshift: NICMOS Imaging of $z \approx 1$ Radio Galaxies. *Andrew W. Zirm, Mark Dickinson, & Arjun Dey.* 585, 90 (2003)

The Evolution of the Global Stellar Mass Density at $0 < z < 3$. *Mark Dickinson, Casey Papovich, Henry C. Ferguson, & Tamás Budavári.* 587, 25 (2003)

The K'-selected Butcher-Oemler Effect. *Roberto De Propris, S. A. Stanford, Peter R. Eisenhardt, & Mark Dickinson.* 598, 20 (2003)

The Internal Ultraviolet–Optical Color Dispersion: Quantifying the Morphological K'-Correction. *Casey Papovich, Mauro Giavalisco, Mark Dickinson, Christopher J. Conselice, & Henry C. Ferguson.* 598, 827 (2003)

DI COCCO, G. *BeppoSAX* Average Spectra of Seyfert Galaxies. *A. Malizia, L. Bassani, J. B. Stephen, G. Di Cocco, F. Fiore, & A. J. Dean.* 589, L17 (2003)

DI CRISCIENZO, M. RR Lyrae Stars in Galactic Globular Clusters. II. A Theoretical Approach to Variables in M3. *M. Marconi, F. Caputo, M. Di Criscienzo, & M. Castellani.* 596, 299 (2003)

DIEGO, J. M. Kinetic Sunyaev-Zel'dovich Effect and Cosmic Microwave Background Polarization from Subsonic Bulk Motions of Dense Gas Clouds in Galaxy Cluster Cores. *J. M. Diego, P. Mazzotta, & J. Silk.* 597, L1 (2003)

DIETRICH, M. The Mass of Quasar Broad Emission Line Regions. *J. A. Baldwin, G. J. Ferland, K. T. Korista, F. Hamann, & M. Dietrich.* 582, 590 (2003)

Chemical Abundances in Broad Emission Line Regions: The "Nitrogen-loud" Quasi-Stellar Object Q0353−383. *J. A. Baldwin, F. Hamann, K. T. Korista, G. J. Ferland, M. Dietrich, & C. Warner.* 583, 649 (2003)

Black Hole Masses in Three Seyfert Galaxies. *C. A. Onken, B. M. Peterson, M. Dietrich, A. Robinson, & I. M. Salamanca.* 585, 121 (2003)

Quasar Elemental Abundances at High Redshifts. *M. Dietrich, F. Hamann, J. C. Shields, A. Constantin, J. Heidt, K. Jäger, M. Vestergaard, & S. J. Wagner.* 589, 722 (2003)

Fe II/Mg II Emission-Line Ratio in High-Redshift Quasars. *M. Dietrich, F. Hamann, I. Appenzeller, & M. Vestergaard.* 596, 817 (2003)

DIETRICH, MATTHIAS. The Black Hole–Bulge Relationship in Quasars. *Gregory A. Shields, Karl Gebhardt, Sarah Salviander, Beverley J. Wills, Bingrong Xie, Michael S. Brotherton, Juntao Yuan, & Matthias Dietrich.* 583, 124 (2003)

A Relation between Supermassive Black Hole Mass and Quasar Metallicity? *Craig Warner, Fred Hamann, & Matthias Dietrich.* 596, 72 (2003)

DIKPATI, MAUSUMI. Clamshell and Tipping Instabilities in a Two-dimensional Magnetohydrodynamic Tachocline. *Paul S. Cally, Mausumi Dikpati, & Peter A. Gilman.* 582, 1190 (2003)

Storage and Equilibrium of Toroidal Magnetic Fields in the Solar Tacholine: A Comparison between MHD-Shallow-Water and Full MHD Approaches. *Matthias Rempel & Mausumi Dikpati.* 584, 524 (2003)

Stability Analysis of Tachocline Latitudinal Differential Rotation and Coexisting Toroidal Band Using a Shallow-Water Model. *Mausumi Dikpati, Peter A. Gilman, & Matthias Rempel.* 596, 680 (2003)

DI MATTEO, TIZIANA. Accretion onto the Supermassive Black Hole in M87. *Tiziana Di Matteo, Steven W. Allen, Andrew C. Fabian, Andrew S. Wilson, & Andrew J. Young.* 582, 133 (2003)

Black Hole Growth and Activity in a Λ Cold Dark Matter Universe. *Tiziana Di Matteo, Rupert A. C. Croft, Volker Springel, & Lars Hernquist.* 593, 56 (2003)

DIMITRIJEVIĆ, M. S. Symmetrical Chemi-Ionization and Chemi-Recombination Processes in Low-Temperature Layers of Helium-rich DB White Dwarf Atmospheres. *A. A. Mihajlov, Lj. M. Ignjatović, M. S. Dimitrijević, & Z. Djurić.* 147, 369 (2003)

DIMPFL, WILLIAM L. Near-Infrared Spectrophotometry and the CO Emission in V2274 Cygni (Nova Cygni 2001 No. 1). *Richard J. Rudy, William L. Dimpfl, David K. Lynch, S. Mazuk, Catherine C. Venturini, John C. Wilson, R. C. Puetter, & R. Brad Perry.* 596, 1229 (2003)

DINERSTEIN, HARRIET L. See LU, NANYAO, et al. Infrared Emission of Normal Galaxies from 2.5 to 12 Microns: *Infrared Space Observatory* Spectra, Near-Infrared Continuum, and Mid-Infrared Emission Features.

DINESCU, DANA I. Absolute Proper Motions to $B \sim 22.5$. V. Detection of Sagittarius Dwarf Spheroidal Debris in the Direction of the Galactic Anticenter: Erratum (ApJ, 575, L67 [2002]). *Dana I. Dinescu, Steven R. Majewski, Terrence M. Girard, René A. Méndez, Allan Sandage, Michael H. Siegel, William E. Kunkel, John P. Subasavage, & Jamie Ostheimer.* 582, L125 (2003)

A Capture Scenario for Globular Cluster ω Centauri. *Toshio Tsuchiya, Dana I. Dinescu, & Vladimir I. Korchagin.* 589, L29 (2003)

DING, G. Q. Evolution of Hard X-Ray Spectra along the Branches in Circinus X-1. *G. Q. Ding, J. L. Qu, & T. P. Li.* 596, L219 (2003)

DING, JIE. A Quadruple-Phase Strong Mg II Absorber at $z \sim 0.9902$ toward PG 1634+706. *Jie Ding, Jane C. Charlton, Nicholas A. Bond, Stephanie G. Zonak, & Christopher W. Churchill.* 587, 551 (2003)

High-Resolution STIS/*Hubble Space Telescope* and HIRES/Keck Spectra of Three Weak Mg II Absorbers toward PG 1643+706. *Jane C. Charlton, Jie Ding, Stephanie G. Zonak, Christopher W. Churchill, Nicholas A. Bond, & Jane R. Rigby.* 589, 111 (2003)

The Multiphase Absorption Systems toward PG 1206+459. *Jie Ding, Jane C. Charlton, Christopher W. Churchill, & Christopher Palma.* 590, 746 (2003)

DING, L. K. See AMENOMORI, M., et al. Multi-TeV Gamma-Ray Flares from Markarian 421 in 2000 and 2001 Observed with the Tibet Air Shower Array.

DING, M. D. Hα and Hard X-Ray Observations of a Two-Ribbon Flare Associated with a Filament Eruption. *M. D. Ding, Q. R. Chen, J. P. Li, & P. F. Chen.* 598, 683 (2003)

DING, X. H. See AMENOMORI, M., et al. Multi-TeV Gamma-Ray Flares from Markarian 421 in 2000 and 2001 Observed with the Tibet Air Shower Array.

DINGUS, B. L. See ATKINS, R., et al. The High-Energy Gamma-Ray Fluence and Energy Spectrum of GRB 970417A from Observations with Milagrito.

See FALCONE, A., et al. Observation of GeV Solar Energetic Particles from the 1997 November 6 Event Using Milagrito.

See ATKINS, R., et al. Observation of TeV Gamma Rays from the Crab Nebula with Milagro Using a New Background Rejection Technique.

DI PAOLA, A. See VALENTINI, G., et al. Optical and Near-Infrared Photometry of the Type Ia Supernova 2000E in NGC 6951.

DI SALVO, T. *BeppoSAX* Serendipitous Discovery of the X-Ray Pulsar SAX J1802.7−2017. *G. Augello, R. Iaria, N. R. Robba, T. Di Salvo, L. Burderi, G. Lavagetto, & L. Stella.* 596, L63 (2003)

DISANTI, MICHAEL A. CO Emission from Disks around AB Aurigae and HD 141569: Implications for Disk Structure and Planet Formation Timescales. *Sean D. Brittain, Terrence W. Rettig, Theodore Simon, Craig Kulesa, Michael A. DiSanti, & Neil Dello Russo.* 588, 535 (2003)

DISNEY, MIKE J. See PRITZL, BARTON J., et al. Anomalous Evolution of the Dwarf Galaxy HIPASS J1321−31.

DI STEFANO, R. A Luminous Recurrent Supersoft X-Ray Source in NGC 300. *A. K. H. Kong & R. Di Stefano.* 590, L13 (2003)

Luminous Supersoft X-Ray Sources in External Galaxies. *R. Di Stefano & A. K. H. Kong.* 592, 884 (2003)

X-Ray Point Sources in the Sombrero Galaxy: Supersoft Sources, the Globular Cluster/Low-Mass X-Ray Binary Connection, and an Overview. *R. DiStefano, A. K. H. Kong, M. L. VanDalfsen, W. E. Harris, S. S. Murray, & K. M. Delain.* 599, 1067 (2003)

DISTEFANO, ROSANNE. *Chandra* Studies of the X-Ray Point Source Luminosity Functions of M31. *Albert K. H. Kong, Rosanne DiStefano, Michael R. Garcia, & Jochen Greiner.* 585, 298 (2003)

DIXON, W. V. See WAKKER, B. P., et al. The *Far Ultraviolet Spectroscopic Explorer* Survey of O VI Absorption in and near the Galaxy.

DIXON, W. VAN DYKE. *Far Ultraviolet Spedtroscopic Explorer* Detection of Galactic O VI Emission in the Halo above the Perseus Arm. *Birgit Otte, W. Van Dyke Dixon, & Ravi Sankrit.* 586, L53 (2003)

DJORGOVSKI, S. G. See PRICE, P. A., et al. GRB 010921: Strong Limits on an Underlying Supernova from the *Hubble Space Telescope*.

Keck Spectroscopy and *Hubble Space Telescope* Imaging of GRB 000926: Probing a Host Galaxy at $z = 2.038$. *S. Castro, T. J. Galama, F. A. Harrison, J. A. Holtzman, J. S. Bloom, S. G. Djorgovski, & S. R. Kulkarni.* 586, 128 (2003)

See GALAMA, T. J., et al. *Hubble Space Telescope* and Ground-based Optical and Ultraviolet Observations of GRB 010222.

See PRICE, P. A., et al. Discovery of GRB 020405 and Its Late Red Bump.

The Redshift and the Host Galaxy of GRB 980613: A Gammay-Ray Burst from a Merger-induced Starburst? *S. G. Djorgovski, J. S. Bloom, & S. R. Kulkarni.* 591, L13 (2003)

The Age-Metallicity Relation of the Universe in Neutral Gas: The First 100 Damped Lyα Systems. *Jason X. Prochaska, Eric Gawiser, Arthur M. Wolfe, Sandra Castro, & S. G. Djorgovski.* 595, L9 (2003)

New Damped Lyα Metallicities from ESI Spectroscopy of Five Palomar Sky Survey Quasars. *Jason X. Prochaska, Sandra Castro, & S. G. Djorgovski.* 148, 317 (2003)

Discovery of a Clustered Quasar Pair at $z \approx 5$: Biased Peaks in Early Structure Formation. *S. G. Djorgovski, D. Stern, A. A. Mahabal, & R. Brunner.* 596, 67 (2003)

A Model-Independent Determination of the Expansion and Acceleration Rates of the Universe as a Function of Redshift and Constraints on Dark Energy. *Ruth A. Daly & S. G. Djorgovski.* 597, 9 (2003)

The First Two Host Galaxies of X-Ray Flashes: XRF 011030 and XRF 020427. *J. S. Bloom, D. Fox, P. G. van Dokkum, S. R. Kulkarni, E. Berger, S. G. Djorgovski, & D. A. Frail.* 599, 957 (2003)

DJURIĆ, Z. Symmetrical Chemi-Ionization and Chemi-Recombination Processes in Low-Temperature Layers of Helium-rich DB White Dwarf Atmospheres. *A. A. Mihajlov, Lj. M. Ignjatović, M. S. Dimitrijević, & Z. Djurić.* 147, 369 (2003)

DMITRUK, P. Test Particle Acceleration in Three-dimensional Magnetohydrodynamic Turbulence. *P. Dmitruk, W. H. Matthaeus, N. Seenu, & M. R. Brown.* 597, L81 (2003)

DMITRUK, PABLO. Low-Frequency Waves and Turbulence in an Open Magnetic Region: Timescales and Heating Efficiency. *Pablo Dmitruk & William H. Matthaeus.* 597, 1097 (2003)

DOBLER, WOLFGANG. Is Nonhelical Hydromagnetic Turbulence Peaked at Small Scales? *Nils Erlands L. Haugen, Axel Brandenburg, & Wolfgang Dobler.* 597, L141 (2003)

DOBRZYCKA, D. Ultraviolet Spectroscopy of Narrow Coronal Mass Ejections. *D. Dobrzycka, J. C. Raymond, D. A. Biesecker, J. Li, & A. Ciaravella.* 588, 586 (2003)

Far-Ultraviolet Spectra of Fast Coronal Mass Ejections Associated with X-Class Flares. *J. C. Raymond, A. Ciaravella, D. Dobrzycka, L. Strachan, Y.-K. Ko, & M. Uzzo.* 597, 1106 (2003)

DOBRZYCKI, ADAM. See BECHTOLD, JILL, et al. *Chandra* Survey of Radio-quiet, High-Redshift Quasars.

DODD, R. J. See SUMI, T., et al. Microlensing Optical Depth toward the Galactic Bulge from Microlensing Observations during 2000 with Difference Image Analysis.

DODELSON, S. Cosmic Microwave Background Anisotropy Measurement from Python V. *K. Coble, S. Dodelson, M. Dragovan, K. Ganga, L. Knox, J. Kovac, B. Ratra, & T. Souradeep.* 584, 585 (2003)

DODELSON, SCOTT. See SZALAY, ALEXANDER S., et al. Karhunen-Loève Estimation of the Power Spectrum Parameters from the Angular Distribution of Galaxies in Early Sloan Digital Sky Survey Data.

Stellar-Mass Black Holes in the Solar Neighborhood. *James R. Chisholm, Scott Dodelson, & Edward W. Kolb.* 596, 437 (2003)

D'ODORICO, S. Metal Abundances and Kinematics of Quasar Absorbers. II. Absorption Systems toward Q0347−3819 and APM BR J0307−4945. *S. A. Levshakov, I. I. Agafonova, S. D'Odorico, A. M. Wolfe, & M. Dessauges-Zavadsky.* 582, 596 (2003)

A European Southern Observatory Very Large Telescope Survey of Near-Infrared ($Z \leq 25$) Selected Galaxies at Redshifts $4.5 < z < 6$: Constraining the Cosmic Star Formation Rate near the Reionization Epoch. *A. Fontana, F. Poli, N. Menci, M. Nonino, E. Giallongo, S. Cristiani, & S. D'Odorico.* 587, 544 (2003)

See POLI, F., et al. The Evolution of the Galaxy Luminosity Function in the Rest-Frame Blue Band up to $z = 3.5$.

See FONTANA, A., et al. The Assembly of Massive Galaxies from Near-Infrared Observations of the Hubble Deep Field–South.

DODSON, R. The Vela Pulsar's Proper Motion and Parallax Derived from VLBI Observations. *R. Dodson, D. Legge, J. E. Reynolds, & P. M. McCulloch.* 596, 1137 (2003)

DOELEMAN, S. S. R Cassiopeiae: Relative Strengths of SiO Masers at 43 and 86 GHz. *R. B. Phillips, A. H. Straughn, S. S. Doeleman, & C. J. Lonsdale.* 588, L105 (2003)

DOHM-PALMER, R. C. Star Formation and the Interstellar Medium in Four Dwarf Irregular Galaxies. *L. M. Young, L. van Zee, K. Y. Lo, R. C. Dohm-Palmer, & Michelle E. Beierle.* 592, 111 (2003)

Deep *Hubble Space Telescope* Imaging of IC 1613. II. The Star Formation History. *Evan D. Skillman, Eline Tolstoy, Andrew A. Cole, Andrew E. Dolphin, Abhijit Saha, J. S. Gallagher, R. C. Dohm-Palmer, & Mario Mateo.* 596, 253 (2003)

DOI, M. See SHIMASAKU, K., et al. Subaru Deep Survey. IV. Discovery of a Large-Scale Structure at Redshift ≃5.

See KNOP, R. A., et al. New Constraints on Ω_M, Ω_Λ, and w from an Independent Set of 11 High-Redshift Supernovae Observed with the *Hubble Space Telescope*.

DOI, MAMORU. See OUCHI, MASAMI, et al. Subaru Deep Survey. II. Luminosity Functions and Clustering Properties of Lyα Emitters at $z = 4.86$ in the Subaru Deep Field.

See KOMIYAMA, YUTAKA, et al. Discovery of Latent Star Formation in the Extended H I Gas around the Local Group Dwarf Irregular Galaxy NGC 6822.

See YOSHII, YUZURU, et al. The Optical/Near-Infrared Light Curves of SN 2002ap for the First 140 Days after Discovery.

See HAMANA, TAKASHI, et al. Cosmic Shear Statistics in the Suprime-Cam 2.1 Square Degree Field: Constraints on Ω_m and Σ_8.

DOKSUS, P. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

DOLAG, KLAUS. Probing Intracluster Magnetic Fields with Cosmic Microwave Background Polarization. *Hiroshi Ohno, Masahiro Takada, Klaus Dolag, Matthias Bartelmann, & Naoshi Sugiyama.* 584, 599 (2003)

DOLCI, M. See VALENTINI, G., et al. Optical and Near-Infrared Photometry of the Type Ia Supernova 2000E in NGC 6951.

DOLE, H. Predictions for Cosmological Infrared Surveys from Space with the Multiband Imaging Photometer for *SIRTF*. *H. Dole, G. Lagache, & J.-L. Puget.* 585, 617 (2003)

DOLEZ, N. See MUKADEM, ANJUM S., et al. Constraining the Evolution of ZZ Ceti.

DOLPHIN, A. The Cepheid Distance to NGC 5236 (M83) with the ESO Very Large Telescope. *Frank Thim, G. A. Tammann, A. Saha, A. Dolphin, Allan Sandage, E. Tolstoy, & Lukas Labhardt.* 590, 256 (2003)

DOLPHIN, ANDREW E. Deep *Hubble Space Telescope* Imaging of IC 1613. II. The Star Formation History. *Evan D. Skillman, Eline Tolstoy, Andrew A. Cole, Andrew E. Dolphin, Abhijit Saha, J. S. Gallagher, R. C. Dohm-Palmer, & Mario Mateo.* 596, 253 (2003)

DOMÍNGUEZ, GERARDO. A Fluorescent Aerogel for Capture and Identification of Interplanetary and Interstellar Dust. *Gerardo Domínguez, Andrew J. Westphal, Mark L. F. Phillips, & Steven M. Jones.* 592, 631 (2003)

DOMINGUEZ, I. See AGUILAR, A., et al. Absolute Photoionization Cross Section Measurements of O II Ions from 29.7 to 46.2 eV.

DOMÍNGUEZ, IMMACULADA. The Chemical Composition of White Dwarfs as a Test of Convective Efficiency during Core Helium Burning. *Oscar Straniero, Immaculada Domínguez, Gianluca Imbriani, & Luciano Piersanti.* 583, 878 (2003)

DOMÍNGUEZ, INMACULADA. Thermal X-Ray Emission from Shocked Ejecta in Type Ia Supernova Remnants. Prospects for Explosion Mechanism Identification. *Carles Badenes, Eduardo Bravo, Kazimierz J. Borkowski, & Inmaculada Domínguez.* 593, 358 (2003)

DOMÍNGUEZ CERDEÑA, I. Simultaneous Visible and Infrared Spectropolarimetry of a Solar Internetwork Region. *J. Sánchez Almeida, I. Domínguez Cerdeña, & F. Kneer.* 597, L177 (2003)

DOMÍNGUEZ-PALMERO, LILIAN. Galactic Bulges from *Hubble Space Telescope* Near-Infrared Camera Multi-Object Spectrometer Observations: The Lack of $r^{1/4}$ Bulges. *Marc Balcells, Alister W. Graham, Lilian Domínguez-Palmero, & Reynier F. Peletier.* 582, L79 (2003)

DOMÍNGUEZ-TENREIRO, R. Conservation Laws in Smooth Particle Hydrodynamics: The DEVA Code. *A. Serna, R. Domínguez-Tenreiro, & A. Sáiz.* 597, 878 (2003)

DOMINIK, C. The Age Dependence of the Vega Phenomenon: Theory. *C. Dominik & G. Decin.* 598, 626 (2003)

Age Dependence of the Vega Phenomenon: Observations. *G. Decin, C. Dominik, L. B. F. M. Waters, & C. Waelkens.* 598, 636 (2003)

DOMINIK, M. See FIELDS, DALE L., et al. High-Precision Limb-Darkening Measurement of a K3 Giant Using Microlensing.

DONAGHY, T. Q. See CREW, G. B., et al. *HETE-2* Localization and Observation of the Bright, X-Ray–rich Gamma-Ray Burst GRB 021211.

DONAHUE, MEGAN. Constraints on the Cluster Environments and Hot Spot Magnetic Field Strengths of the Radio Sources 3C 280 and 3C 254. *Megan Donahue, Ruth A. Daly, & Donald J. Horner.* 584, 643 (2003)

The Mass, Baryonic Fraction, and X-Ray Temperature of the Luminous, High-Redshift Cluster of Galaxies MS 0451.6−0305. *Megan Donahue, Jessica A. Gaskin, Sandeep K. Patel, Marshall Joy, Doug Clowe, & John P. Hughes.* 598, 190 (2003)

DONE, CHRIS. Simultaneous *Chandra* and *Rossi X-Ray Timing Explorer* Observations of the Nearby Bright Seyfert 2 Galaxy NGC 4945. *Chris Done, Greg M. Madejski, Piotr T. Życki, & Lincoln J. Greenhill.* 588, 763 (2003)

DONES, LUKE. Recent Origin of the Solar System Dust Bands. *David Nesvorný, William F. Bottke, Harold F. Levison, & Luke Dones.* 591, 486 (2003)

DONG, FENG. See BAHCALL, NETA A., et al. The Cluster Mass Function from Early Sloan Digital Sky Survey Data: Cosmological Implications.

See BAHCALL, NETA A., et al. A Merged Catalog of Clusters of Galaxies from Early Sloan Digital Sky Survey Data.

The Richness-dependent Cluster Correlation Function: Early Sloan Digital Sky Survey Data. *Neta A. Bahcall, Feng Dong, Lei Hao, Paul Bode, Jim Annis, James E. Gunn, & Donald P. Schneider.* 599, 814 (2003)

DONG, SHAWFENG. Roche Lobe Overflow from Dwarf Stellar Systems. *Stephen D. Murray, Shawfeng Dong, & Douglas N. C. Lin.* 593, 301 (2003)

Star Formation and Feedback in Dwarf Galaxies. *Shawfeng Dong, D. N. C. Lin, & S. D. Murray.* 596, 930 (2003)

DONG, XIAO-BO. SDSS J094857.3+002225: A Very Radio Loud, Narrow-Line Quasar with Relativistic Jets? *Hong-Yan Zhou, Ting-Gui Wang, Xiao-Bo Dong, You-Yuan Zhou, & Cheng Li.* 584, 147 (2003)

D'ONGHIA, ELENA. The Failure of Self-Interacting Dark Matter to Solve the Overabundance of Dark Satellites and the Soft Core Question. *Elena D'Onghia & Andreas Burkert.* 586, 12 (2003)

DONLEY, J. L. A *Hubble Space Telescope* Survey of Extended [O III] λ5007 Emission in a Far-Infrared Selected Sample of Seyfert Galaxies: Observations. *H. R. Schmitt, J. L. Donley, R. R. J. Antonucci, J. B. Hutchings, & A. L. Kinney.* 148, 327 (2003)

A *Hubble Space Telescope* Survey of Extended [O III] λ5007 Emission in a Far-Infrared Selected Sample of Seyfert Galaxies: Results. *H. R. Schmitt, J. L. Donley, R. R. J. Antonucci, J. B. Hutchings, A. L. Kinney, & J. E. Pringle.* 597, 768 (2003)

DONNARUMMA, I. See POLI, F., et al. The Evolution of the Galaxy Luminosity Function in the Rest-Frame Blue Band up to $z = 3.5$.

See FONTANA, A., et al. The Assembly of Massive Galaxies from Near-Infrared Observations of the Hubble Deep Field–South.

DONNELLY, H. See MARKEVITCH, M., et al. *Chandra* Temperature Map of A754 and Constraints on Thermal Conduction.

DOPITA, M. Physical Conditions and Star Formation Activity in the Intragroup Medium of Stephan's Quintet. *C. K. Xu, N. Lu, J. J. Condon, M. Dopita, & R. J. Tuffs.* 595, 665 (2003)

DOPITA, M. A. See CORBETT, E. A., et al. COLA. II. Radio and Spectroscopic Diagnostics of Nuclear Activity in Galaxies.

Internal Dust Correction Factors for Star Formation Rates Derived for Dusty H II Regions and Starburst Galaxies. *M. A. Dopita, B. A. Groves, R. S. Sutherland, & L. J. Kewley.* 583, 727 (2003)

DOPITA, MICHAEL. See REULAND, MICHIEL, et al. Giant Lyα Nebulae Associated with High-Redshift Radio Galaxies.

DOPITA, MICHAEL A. The Numerical Simulation of Radiative Shocks. II. Thermal Instabilities in Two-dimensional Models. *Ralph S. Sutherland, Geoffrey V. Bicknell, & Michael A. Dopita.* 591, 238 (2003)

A Neutral Hydrogen Survey of the Large Magellanic Cloud: Aperture Synthesis and Multibeam Data Combined. *Sungeun Kim, Lister Staveley-Smith, Michael A. Dopita, Robert J. Sault, Youngung Lee, & You-Hua Chu.* 148, 473 (2003)

Starburst Galaxies: Why the Calzetti Dust Extinction Law? *Jörg Fischera, Michael A. Dopita, & Ralph S. Sutherland.* 599, L21 (2003)

DORAN, MICHAEL. Early Quintessence in Light of the *Wilkinson Microwave Anisotropy Probe*. *Robert R. Caldwell, Michael Doran, Christian M. Müller, Gregor Schäfer, & Christof Wetterich.* 591, L75 (2003)

DORÉ, OLIVIER. Gravitational Potential Reconstruction from Peculiar Velocity and Weak Lensing Measurements. *Olivier Doré, Lloyd Knox, & Alan Peel.* 585, L81 (2003)

DORFAN, D. E. See ATKINS, R., et al. The High-Energy Gamma-Ray Fluence and Energy Spectrum of GRB 970417A from Observations with Milagrito.

See FALCONE, A., et al. Observation of GeV Solar Energetic Particles from the 1997 November 6 Event Using Milagrito.

See ATKINS, R., et al. Observation of TeV Gamma Rays from the Crab Nebula with Milagro Using a New Background Rejection Technique.

DORMAN, BEN. Blue Horizontal-Branch Stars in Old, Metal-rich Stellar Systems. *Ruth C. Peterson, Bruce W. Carney, Ben Dorman, Elizabeth M. Green, Wayne Landsman, James Liebert, Robert W. O'Connell, & Robert T. Rood.* 588, 299 (2003)

Age and Abundance Discrimination in Old Stellar Populations Using Mid-Ultraviolet Colors. *Ben Dorman, Robert W. O'Connell, & Robert T. Rood.* 591, 878 (2003)

DORON, R. Temperature Measurements in the Solar Transition Region Using N III Line Intensity Ratios. *R. Doron, G. A. Doschek, J. M. Laming, U. Feldman, & A. K. Bhatia.* 590, 1121 (2003)

DOROSHKEVICH, A. Observational Estimates of the Initial Power Spectrum at Small Scale from Lyα Absorbers. *M. Demianski & A. Doroshkevich.* 597, 81 (2003)

DOROSHKEVICH, A. G. Ionization History of the Cosmic Plasma in the Light of the Recent Cosmic Background Imager and Future *Planck* Data. *A. G. Doroshkevich, I. P. Naselsky, P. D. Naselsky, & I. D. Novikov.* 586, 709 (2003)

DOROSHKEVICH, ANDREY G. Phase Cross-Correlation of the *Wilkinson Microwave Anisotropy Probe* Internal Linear Combination Map and

Foregrounds. *Pavel D. Naselsky, Andrey G. Doroshkevich, & Oleg V. Verkhodanov.* 599, L53 (2003)

DORSCHNER, J. Infrared Properties of Solid Titanium Oxides: Exploring Potential Primary Dust Condensates. *T. Posch, F. Kerschbaum, D. Fabian, H. Mutschke, J. Dorschner, A. Tamanai, & T. Henning.* 149, 437 (2003)

DORSCHNER, JOHANN. Experimental Study of Light Scattering by Large Dust Aggregates Consisting of Micron-Sized SiO_2 Monospheres. *Gerhard Wurm, Helena Relke, & Johann Dorschner.* 595, 891 (2003)

DORWART, W. B. The MAT/TOCO Measurement of the Angular Power Spectrum of the Cosmic Microwave Background at 30 and 40 GHz. *M. R. Nolta, M. J. Devlin, W. B. Dorwart, A. D. Miller, L. A. Page, J. Puchalla, E. Torbet, & H. T. Tran.* 598, 97 (2003)

DOSCHEK, G. A. Temperature Measurements in the Solar Transition Region Using N III Line Intensity Ratios. *R. Doron, G. A. Doschek, J. M. Laming, U. Feldman, & A. K. Bhatia.* 590, 1121 (2003)

Free-Free Emission in the Far-Ultraviolet Spectral Range: A Resource for Diagnosing Solar and Stellar Flare Plasmas. *U. Feldman, E. Landi, G. A. Doschek, I. Dammasch, & W. Curdt.* 593, 1226 (2003)

DOTSON, J. L. See NOVAK, G., et al. First Results from the Submillimeter Polarimeter for Antarctic Remote Observations: Evidence of Large-Scale Toroidal Magnetic Fields in the Galactic Center.

DOTSON, JESSIE L. Magnetic Fields in Cool Clouds within the Central 50 Parsecs of the Galaxy. *David T. Chuss, Jacqueline A. Davidson, Jessie L. Dotson, C. Darren Dowell, Roger H. Hildebrand, Giles Novak, & John E. Vaillancourt.* 599, 1116 (2003)

DOTTER, AARON. The Impact of Pollution on Stellar Evolution Models. *Aaron Dotter & Brian Chaboyer.* 596, 496 (2003)

Stellar Pollution and [Fe/H] in the Hyades. *Aaron Dotter & Brian Chaboyer.* 596, L101 (2003)

DOTTORI, HORACIO. Circumnulear Structures in the Interacting Seyfert Galaxy of NGC 1241: Kinematics and Optical/Infrared Morphology. *Rubén J. Díaz, Horacio Dottori, Nelson Vera-Villamizar, & Gustavo Carranza.* 597, 860 (2003)

DOTY, J. See CREW, G. B., et al. *HETE-2* Localization and Observation of the Bright, X-Ray–rich Gamma-Ray Burst GRB 021211.

DOTY, J. P. See BAGANOFF, F. K., et al. *Chandra* X-Ray Spectroscopic Imaging of Sagittarius A* and the Central Parsec of the Galaxy.

DOUGADOS, CATHERINE. *Hubble Space Telescope* WFPC2 Imaging of the Disk and Jet of HV Tauri C. *Karl R. Stapelfeldt, François Ménard, Alan M. Watson, John E. Krist, Catherine Dougados, Deborah L. Padgett, & Wolfgang Brandner.* 589, 410 (2003)

DOUGHERTY, M. K. Possible Distortion of the Interplanetary Magnetic Field by the Dust Trail of Comet 122P/de Vico. *G. H. Jones, A. Balogh, C. T. Russell, & M. K. Dougherty.* 597, L61 (2003)

DOWDALL, C. See HOLDER, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.

See DE LA CALLE PÉREZ, I., et al. Search for High-Energy Gamma Rays from an X-Ray–Selected Blazar Sample.

DOWELL, C. DARREN. Magnetic Fields in Cool Clouds within the Central 50 Parsecs of the Galaxy. *David T. Chuss, Jacqueline A. Davidson, Jessie L. Dotson, C. Darren Dowell, Roger H. Hildebrand, Giles Novak, & John E. Vaillancourt.* 599, 1116 (2003)

DOWNES, D. Molecular Gas and Dust at $z = 2.6$ in SMM J14011+0252: A Strongly Lensed Ultraluminous Galaxy, Not a Huge Massive Disk. *D. Downes & P. M. Solomon.* 582, 37 (2003)

DOYLE, LAURANCE R. Detecting Reflected Light from Close-in Extrasolar Giant Planets with the *Kepler* Photometer. *Jon M. Jenkins & Laurance R. Doyle.* 595, 429 (2003)

DRAGO, A. Gamma-Ray Bursts from Delayed Collapse of Neutron Stars to Quark Matter Stars. *Z. Berezhiani, I. Bombaci, A. Drago, F. Frontera, & A. Lavagno.* 586, 1250 (2003)

DRAGO, F. CHIUDERI. Solving the Descrepancy between the Extreme-Ultraviolet and Microwave Observations of the Quiet Sun. *E. Landi & F. Chiuderi Drago.* 589, 1054 (2003)

DRAGOVAN, M. Cosmic Microwave Background Anisotropy Measurement from Python V. *K. Coble, S. Dodelson, M. Dragovan, K. Ganga, L. Knox, J. Kovac, B. Ratra, & T. Souradeep.* 584, 585 (2003)

DRAGOVAN, MARK. Galactic Foreground Constraints from the Python V Cosmic Microwave Background Anisotropy Data. *Pia Mukherjee, Kim Coble, Mark Dragovan, Ken Ganga, John Kovac, Bharat Ratra, & Tarun Souradeep.* 592, 692 (2003)

DRAINE, B. T. Radiative Torques on Interstellar Grains. III. Dynamics with Thermal Relaxation. *Joseph C. Weingartner & B. T. Draine.* 589, 289 (2003)

The Scattered X-Ray Halo around Nova Cygni 1992: Testing a Model for Interstellar Dust. *B. T. Draine & Jonathan C. Tan.* 594, 347 (2003)

Scattering by Interstellar Dust Grains. I. Optical and Ultraviolet. *B. T. Draine.* 598, 1017 (2003)

Scattering by Interstellar Dust Grains. II. X-Rays. *B. T. Draine.* 598, 1026 (2003)

DRAKE, A. See ALCOCK, C., et al. The MACHO Project Large Magellanic Cloud Variable Star Inventory. XI. Frequency Analysis of the Fundamental Mode RR Lyrae Stars.

DRAKE, A. J. A Search for Stellar Obscuration Events Due to Dark Clouds. *A. J. Drake & K. H. Cook.* 589, 281 (2003)

On the Selection of Photometric Planetary Transits. *A. J. Drake.* 589, 1020 (2003)

DRAKE, J. J. See NESS, J.-U., et al. A *Chandra* Low Energy Transmission Grating Spectrometer Observation of V4743 Sagittarii: A Supersoft X-Ray Source and a Violently Variable Light Curve.

DRAKE, JEREMY. See BUTT, YOUSAF M., et al. *Chandra*/Very Large Array Follow-up of TeV J2032+4131, the Only Unidentified TeV Gamma-Ray Source.

DRAKE, JEREMY J. Are Coronae of Magnetically Active Stars Heated by Flares? II. Extreme Ultraviolet and X-Ray Flare Statistics and the Differential Emission Measure Distribution. *Manuel Güdel, Marc Audard, Vinay L. Kashyap, Jeremy J. Drake, & Edward F. Guinan.* 582, 423 (2003)

The Extraordinary X-Ray Light Curve of the Classical Nova V1494 Aquilae (1999 No. 2) in Outburst: The Discovery of Pulsations and a "Burst." *Jeremy J. Drake, R. Mark Wagner, Sumner Starrfield, Yousaf Butt, Joachim Krautter, H. E. Bond, M. Della Valle, R. D. Gehrz, Charles E. Woodward, A. Evans, M. Orio, P. Hauschildt, M. Hernanz, K. Mukai, & J. W. Truran.* 584, 448 (2003)

From the Heart of the Ghoul: C and N Abundances in the Corona of Algol B. *Jeremy J. Drake.* 594, 496 (2003)

X-Ray Evidence of the Common Envelope Phase of V471 Tauri. *Jeremy J. Drake & Marek J. Sarna.* 594, L55 (2003)

The Coronae of AR Lacertae. *David P. Huenemoerder, Claude R. Canizares, Jeremy J. Drake, & Jorge Sanz-Forcada.* 595, 1131 (2003)

Modeling the Ne IX Triplet Spectral Region of Capella with the *Chandra* and *XMM-Newton* Gratings. *Jan-Uwe Ness, Nancy S. Brickhouse, Jeremy J. Drake, & David P. Huenemoerder.* 598, 1277 (2003)

DREIZLER, S. See GREEN, E. M., et al. Discovery of a New Class of Pulsating Stars: Gravity-Mode Pulsators among Subdwarf B Stars.

DRESSEL, L. See MARCONI, A., et al. Is There Really a Black Hole at the Center of NGC 4041? Constraints from Gas Kinematics.

DRESSLER, ALAN. See GEBHARDT, KARL, et al. Axisymmetric Dynamical Models of the Central Regions of Galaxies.

A Wide-Field *Hubble Space Telescope* Study of the Cluster Cl 0024+16 at $z = 0.4$. I. Morphological Distributions to 5 Mpc Radius. *Tommaso Treu, Richard S. Ellis, Jean-Paul Kneib, Alan Dressler, Ian Smail, Oliver Czoske, Augustus Oemler, & Priyamvada Natarajan.* 591, 53 (2003)

See PINKNEY, JASON, et al. Kinematics of 10 Early-Type Galaxies from *Hubble Space Telescope* and Ground-based Spectroscopy.

DRÖGE, WOLFGANG. Solar Particle Transport in a Dynamical Quasi-linear Theory. *Wolfgang Dröge.* 589, 1027 (2003)

DRORY, N. The Munich Near-Infrared Cluster Survey. II. The *K*-Band Luminosity Function of Field Galaxies to $z \sim 1.2$. *N. Drory, R. Bender, G. Feulner, U. Hopp, C. Maraston, J. Snigula, & G. J. Hill.* 595, 698 (2003)

DROSBACK, MEREDITH M. See GNEDIN, NICKOLAY Y., et al. Linear Gas Dynamics in the Expanding Universe.

DRUKIER, G. A. Can High-Velocity Stars Reveal Black Holes in Globular Clusters? *G. A. Drukier & C. D. Bailyn.* 597, L125 (2003)

DRUMMOND, JACK. ι Cassiopeiae: Orbit, Masses, and Photometry from Adaptive Optics Imaging in the *I* and *H* Bands. *Jack Drummond, Scott Milster, Patrick Ryan, & Lewis C. Roberts, Jr.* 585, 1007 (2003)

DUBINSKI, JOHN. Detection of Dark Matter Skewness in the VIRMOS-DESCART Survey: Implications for Ω_0. *Ue-Li Pen, Tongjie Zhang, Ludovic van Waerbeke, Yannick Mellier, Pengjie Zhang, & John Dubinski.* 592, 664 (2003)

Optimal Weak-Lensing Skewness Measurements. *Tong-Jie Zhang, Ue-Li Pen, Pengji Zhang, & John Dubinski.* 598, 818 (2003)

DUBUS, G. The Optical Light Curves of XTE J2123−058. III. The Mass of the Binary Components and the Structure of the Quiescent Accretion Disk. *T. Shahbaz, C. Zurita, J. Casares, G. Dubus, P. A. Charles, R. Mark Wagner, & E. Ryan.* 585, 443 (2003)

DUBUS, GUILLAUME. Cataclysmic Variable Evolution with Circumbinary Disks. *Ronald E. Taam, Eric L. Sandquist, & Guillaume Dubus.* 592, 1124 (2003)

DUCATI, JORGE R. A Method for Simultaneous Determination of A_V and R and Applications. *Jorge R. Ducati, Daiana Ribeiro, & Sandro B. Rembold.* 588, 344 (2003)

DUCHÊNE, G. See GHEZ, A. M., et al. The First Measurement of Spectral Lines in a Short-Period Star Bound to the Galaxy's Central Black Hole: A Paradox of Youth.

The First Detection of Spatially Resolved Mid-Infrared Scattered Light from a Protoplanetary Disk. *C. McCabe, G. Duchêne, & A. M. Ghez.* 588, L113 (2003)

No Fossil Disk in the T Tauri Multiple System V773 Tauri. *G. Duchêne, A. M. Ghez, C. McCabe, & A. J. Weinberger.* 592, 288 (2003)

DUDEK, J. B. The Radio Spectrum of the Phenyl Radical. *R. J. McMahon, M. C. McCarthy, C. A. Gottlieb, J. B. Dudek, J. F. Stanton, & P. Thaddeus.* 590, L61 (2003)

DUDINOV, VLADIMIR. See COLLEY, WESLEY N., et al. Around-the-Clock Observations of the Q9057+561A,B Gravitationally Lensed Quasar. II. Results for the Second Observing Season.

DUDLEY, C. C. The [C II] 158 Micron Line Deficit in Ultraluminous Infrared Galaxies Revisited. *M. L. Luhman, S. Satyapal, J. Fischer, M. G. Wolfire, E. Sturm, C. C. Dudley, D. Lutz, & R. Genzel.* 594, 758 (2003)

DUEMMLER, R. High-Resolution Spectroscopy of FU Orionis Stars. *G. H. Herbig, P. P. Petrov, & R. Duemmler.* 595, 384 (2003)

DUKE, C. See HOLDER, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.

See DE LA CALLE PÉREZ, I., et al. Search for High-Energy Gamma Rays from an X-Ray–Selected Blazar Sample.

DULEY, W. W. Infrared Absorption Spectra of Deuterated Amorphous Carbon. *V. I. Grishko & W. W. Duley.* 583, L43 (2003)

DULEY, WALTER W. Locally Aromatic Polycyclic Hydrocarbons as Potential Carriers of Infrared Emission Features. *Simon Petrie, Robert Stranger, & Walter W. Duley.* 594, 869 (2003)

DULICK, M. Line Intensities and Molecular Opacities of the FeH $F\ ^4\Delta_i$–$X\ ^4\Delta_i$ Transition. *M. Dulick, C. W. Bauschlicher, Jr., Adam Burrows, C. M. Sharp, R. S. Ram, & Peter Bernath.* 594, 651 (2003)

DULL, J. D. The Dynamics of M15: Observations of the Velocity Dispersion Profile and Fokker-Planck Models: Addendum (ApJ, 481, 267 [1997]). *J. D. Dull, H. N. Cohn, P. M. Lugger, B. W. Murphy, P. O. Seitzer, P. J. Callanan, R. G. M. Rutten, & P. A. Charles.* 585, 598 (2003) (Orig. paper in 481, 267 (1997))

DULLEMOND, C. P. The First Detailed Look at a Brown Dwarf Disk. *I. Pascucci, D. Apai, Th. Henning, & C. P. Dullemond.* 590, L111 (2003)

Explaining UX Orionis Star Variability with Self-shadowed Disks. *C. P. Dullemond, M. E. van den Ancker, B. Acke, & R. van Boekel.* 594, L47 (2003)

DULTZIN-HACYAN, D. An Optical Spectroscopic Atlas of Low-Redshift Active Galactic Nuclei. *P. Marziani, J. W. Sulentic, R. Zamanov, M. Calvini, D. Dultzin-Hacyan, R. Bachev, & T. Zwitter.* 145, 199 (2003)

See STEPANIAN, J. A., et al. A Multiwavelength Study of Narrow-Line Seyfert 1 Galaxies from the Second Byurakan Survey.

See BÖTTCHER, M., et al. Coordinated Multiwavelength Observations of BL Lacertae in 2000.

Radio-loud Active Galactic Nuclei in the Context of the Eigenvector 1 Parameter Space. *J. W. Sulentic, S. Zamfir, P. Marziani, R. Bachev, M. Calvani, & D. Dultzin-Hacyan.* 597, L17 (2003)

DUNLEA, S. See HALL, T. A., et al. Search for TeV Emissions from Pulsars in Binary Systems.

DUNLOP, J. S. A SCUBA Galaxy in the Protocluster around 53W002 at $z = 2.4$. *Ian Smail, R. J. Ivison, D. G. Gilbank, J. S. Dunlop, W. C. Keel, K. Motohara, & J. A. Stevens.* 583, 551 (2003)

Chandra Detections of SCUBA Galaxies around High-z Radio Sources. *Ian Smail, C. A. Scharf, R. J. Ivison, J. A. Stevens, R. G. Bower, & J. S. Dunlop.* 599, 86 (2003)

DUNN, J. P. The Kinematics and Physical Conditions of the Ionized Gas in Markarian 509. II. STIS Echelle Observations. *S. B. Kraemer, D. M. Crenshaw, T. Yaqoob, B. McKernan, J. R. Gabel, I. M. George, T. J. Turner, & J. P. Dunn.* 582, 125 (2003)

See CRENSHAW, D. M., et al. Simultaneous Ultraviolet and X-Ray Spectroscopy of the Seyfert 1 Galaxy NGC 5548. I. Physical Conditions in the Ultraviolet Absorbers.

DUNNE, BRYAN C. Diffuse X-Ray Emission from the Quiescent Superbubble M17, the Omega Nebula. *Bryan C. Dunne, You-Hua Chu, C.-H. Rosie Chen, Justin D. Lowry, Leisa Townsley, Robert A. Gruendl, Martín A. Guerrero, & Margarita Rosado.* 590, 306 (2003)

DUNNE, L. See WEBB, T. M., et al. The Canada–United Kingdom Deep Submillimeter Survey. V. The Submillimeter Properties of Lyman Break Galaxies.

See WEBB, T. M., et al. The Canada-UK Deep Submillimeter Survey. VI. The 3 Hour Field.

Cold Dust in Kepler's Supernova Remnant. *H. L. Morgan, L. Dunne, S. A. Eales, R. J. Ivison, & M. G. Edmunds.* 597, L33 (2003)

The Canada-UK Deep Submillimeter Survey. VII. Optical and Near-Infrared Identifications for the 14 Hour Field. *T. M. A. Webb, S. J. Lilly, D. L. Clements, S. Eales, M. Yun, M. Brodwin, L. Dunne, & W. K. Gear.* 597, 680 (2003)

DUNNE, LORETTA. CO Molecular Gas in Infrared-luminous Galaxies. *Lihong Yao, E. R. Seaquist, Nario Kuno, & Loretta Dunne.* 588, 771 (2003)

CO Molecular Gas in Infrared Luminous Galaxies: Erratum (ApJ, 588, 771 [2003]). *Lihong Yao, E. R. Seaquist, Nario Kuno, & Loretta Dunne.* 597, 1271 (2003) (Orig. paper in 588, 771 (2003))

DUPKE, RENATO. *Chandra* Analysis of A496: No Chemical Gradients across Cold Fronts. *Renato Dupke & Raymond E. White III.* 583, L13 (2003)

DUPREE, A. K. See LOBEL, A., et al. High-Resolution Spectroscopy of the Yellow Hypergiant ρ Cassiopeiae from 1993 through the Outburst of 2000–2001.

The Structure of Stellar Coronae in Active Binary Systems. *J. Sanz-Forcada, N. S. Brickhouse, & A. K. Dupree.* 145, 147 (2003)

A *Far Ultraviolet Spectroscopic Explorer* Survey of Coronal Forbidden Lines in Late-Type Stars. *Seth Redfield, Thomas R. Ayres, Jeffrey L. Linsky, Thomas B. Ake, A. K. Dupree, Richard D. Robinson, & Peter R. Young.* 585, 993 (2003)

He I λ10830 as a Probe of Winds in Accreting Young Stars. *Suzan Edwards, William Fischer, John Kwan, Lynne Hillenbrand, & A. K. Dupree.* 599, L41 (2003)

DUPUIS, J. The Extreme-Ultraviolet Continuum of a Strong Stellar Flare. *D. J. Christian, M. Mathioudakis, D. Jevremović, J. Dupuis, S. Vennes, & A. Kawka.* 593, L105 (2003)

DUPUIS, JEAN. *Far Ultraviolet Spectroscopic Explorer* Observation of the Ultramassive White Dwarf PG 1658+441. *Jean Dupuis, Pierre Chayer, Stéphane Vennes, Nicole F. Allard, & Guillaume Hébrard.* 598, 486 (2003)

DURISEN, RICHARD H. The Nonlinear Evolution of Massive Stellar Core Collapses that "Fizzle." *James N. Imamura, Brian K. Pickett, & Richard H. Durisen.* 587, 341 (2003)

The Thermal Regulation of Gravitational Instabilities in Protoplanetary Disks. *Brian K. Pickett, Annie C. Mejía, Richard H. Durisen, Patrick M. Cassen, Donald K. Berry, & Robert P. Link.* 590, 1060 (2003)

DURNEY, B. R. Temporal Variation of Angular Momentum in the Solar Convection Zone. *R. Komm, R. Howe, B. R. Durney, & F. Hill.* 586, 650 (2003)

DURRELL, PATRICK R. Kinematics of Planetary Nebulae in M51's Tidal Debris. *Patrick R. Durrell, J. Christopher Mihos, John J. Feldmeier, George H. Jacoby, & Robin Ciardullo.* 582, 170 (2003)

Intracluster Planetary Nebulae in the Virgo Cluster. II. Imaging Catalog. *John J. Feldmeier, Robin Ciardullo, George H. Jacoby, & Patrick R. Durrell.* 145, 65 (2003)

DURRER, R. Acoustic Peaks and Dips in the Cosmic Microwave Background Power Spectrum: Observational Data and Cosmological Constraints. *R. Durrer, B. Novosyadlyj, & S. Apunevych.* 583, 33 (2003)

DURRER, RUTH. Bias and the Power Spectrum beyond the Turnover. *Ruth Durrer, Andrea Gabrielli, Michael Joyce, & Francesco Sylos Labini.* 585, L1 (2003)

DURSI, L. J. The Response of Model and Astrophysical Thermonuclear Flames to Curvature and Stretch. *L. J. Dursi, M. Zingale, A. C. Calder, B. Fryxell, F. X. Timmes, N. Vladimirova, R. Rosner, A. Caceres, D. Q. Lamb, K. Olson, P. M. Ricker, K. Riley, A. Siegel, & J. W. Truran.* 595, 955 (2003)

DUSCHL, WOLFGANG J. See CLOSE, LAIRD M., et al. High-Resolution Images of Orbital Motion in the Trapezium Cluster: First Scientific Results from

the Multiple Mirror Telescope Deformable Secondary Mirror Adaptive Optics System.

D'VALI, M. See HALL, T. A., et al. Search for TeV Emissions from Pulsars in Binary Systems.

DWEK, ELI. An Empirical Decomposition of Near-Infrared Emission into Galactic and Extragalactic Components. *Richard G. Arendt & Eli Dwek.* 585, 305 (2003)

DWIVEDI, B. N. On the Extreme-Ultraviolet/Ultraviolet Plasma Diagnostics for Nitrogen-like Ions from Spectra Obtained by *SOHO*/SUMER. *A. Mohan, E. Landi, & B. N. Dwivedi.* 582, 1162 (2003)

DWORKIN, JASON P. Luminescence from Vacuum-Ultraviolet–irradiated Cosmic Ice Analogs and Residues. *Murthy S. Gudipati, Jason P. Dworkin, Xavier D.F. Chillier, & Louis J. Allamandola.* 583, 514 (2003)

DWYER, J. R. Evidence for a Suprathermal Seed Population of Heavy Ions Accelerated by Interplanetary Shocks near 1 AU. *M. I. Desai, G. M. Mason, J. R. Dwyer, J. E. Mazur, R. E. Gold, S. M. Krimigis, C. W. Smith, & R. M. Skoug.* 588, 1149 (2003)

See SLOCUM, P. L., et al. Elemental Fractionation in Small Solar Energetic Particle Events.

DYE, S. Semilinear Gravitational Lens Inversion. *S. J. Warren & S. Dye.* 590, 673 (2003)

DYER, K. K. *Chandra* Detection of a Pulsar Wind Nebula Associated with Supernova Remnant 3C 396. *C. M. Olbert, J. W. Keohane, K. A. Arnaud, K. K. Dyer, S. P. Reynolds, & S. Safi-Harb.* 592, L45 (2003)

DYER, KRISTY K. *Chandra* CCD Imagery of the Northeast and Northwest Limbs of SN 1006. *Knox S. Long, Stephen P. Reynolds, John C. Raymond, P. Frank Winkler, Kristy K. Dyer, & Robert Petre.* 586, 1162 (2003)

DYKS, J. Two-Pole Caustic Model for High-Energy Light Curves of Pulsars. *J. Dyks & B. Rudak.* 598, 1201 (2003)

DZHALILOV, N. S. Large Mixing Angle Oscillations as a Probe of the Deep Solar Interior. *C. Burgess, N. S. Dzhalilov, M. Maltoni, T. I. Rashba, V. B. Semikoz, M. A. Tórtola, & J. W. F. Valle.* 588, L65 (2003)

EALES, S. See WEBB, T. M., et al. The Canada–United Kingdom Deep Submillimeter Survey. V. The Submillimeter Properties of Lyman Break Galaxies.

The Canada-UK Deep Submillimeter Survey. VII. Optical and Near-Infrared Identifications for the 14 Hour Field. *T. M. A. Webb, S. J. Lilly, D. L. Clements, S. Eales, M. Yun, M. Brodwin, L. Dunne, & W. K. Gear.* 597, 680 (2003)

EALES, S. A. See WEBB, T. M., et al. The Canada-UK Deep Submillimeter Survey. VI. The 3 Hour Field.

Cold Dust in Kepler's Supernova Remnant. *H. L. Morgan, L. Dunne, S. A. Eales, R. J. Ivison, & M. G. Edmunds.* 597, L33 (2003)

EBELING, H. *Chandra* X-Ray Analysis of the Massive High-Redshift Galaxy Clusters Cl J1113.1−2615 and Cl J0152.7−1357. *B. J. Maughan, L. R. Jones, H. Ebeling, E. Perlman, P. Rosati, C. Frye, & C. R. Mullis.* 587, 589 (2003)

EBELING, HARALD. See LAROQUE, SAMUEL J., et al. Sunyaev-Zeldovich Effect Imaging of MACS Galaxy Clusters at $z > 0.5$.

A Unique Small-Scale Gravitational Arc in A1201. *Alastair C. Edge, Graham P. Smith, David J. Sand, Tommaso Treu, Harald Ebeling, Steven W. Allen, & Pieter G. van Dokkum.* 599, L69 (2003)

EBISAWA, KEN. *Chandra* Observations of a Nonthermal Supernova Remnant Candidate AX J1843.8−0352 and Its Surroundings. *Masaru Ueno, Aya Bamba, Katsuji Koyama, & Ken Ebisawa.* 588, 338 (2003)

Accretion Disk Spectra of Ultraluminous X-Ray Sources in Nearby Spiral Galaxies and Galactic Superluminal Jet Sources. *Ken Ebisawa, Piotr Życki, Aya Kubota, Tsunefumi Mizuno, & Ken-ya Watarai.* 597, 780 (2003)

ECHEVARRIA, L. See STANEK, K. Z., et al. Spectroscopic Discovery of the Supernova 2003dh Associated with GRB 030329.

See MATHESON, T., et al. Photometry and Spectroscopy of GRB 03029 and Its Associated Supernova 2003dh: The First Two Months.

ECKART, A. The Position of Sagittarius A*. II. Accurate Positions and Proper Motions of Stellar SiO Masers near the Galactic Center. *M. J. Reid, K. M. Menten, R. Genzel, T. Ott, R. Schödel, & A. Eckart.* 587, 208 (2003)

See GENZEL, R., et al. The Stellar Cusp around the Supermassive Black Hole in the Galactic Center.

Stellar Dynamics in the Central Arcsecond of Our Galaxy. *R. Schödel, T. Ott, R. Genzel, A. Eckart, N. Mouawad, & T. Alexander.* 596, 1015 (2003)

A Geometric Determination of the Distance to the Galactic Center. *F. Eisenhauer, R. Schödel, R. Genzel, T. Ott, M. Tecza, R. Abuter, A. Eckart, & T. Alexander.* 597, L121 (2003)

ECKART, MEGAN E. The Serendipitous Extragalactic X-Ray Source Identification Program. I. Characteristics of the Hard X-Ray Sample. *Fiona A. Harrison, Megan E. Eckart, Peter H. Mao, David J. Helfand, & Daniel Stern.* 596, 944 (2003)

EDELMANN, H. See GREEN, E. M., et al. Discovery of a New Class of Pulsating Stars: Gravity-Mode Pulsators among Subdwarf B Stars.

EDELSON, R. See MARKOWITZ, A., et al. X-Ray Fluctuation Power Spectral Densities of Seyfert 1 Galaxies.

Long-Term X-Ray Spectral Variability in Seyfert 1 Galaxies. *A. Markowitz, R. Edelson, & S. Vaughan.* 598, 935 (2003)

EDELSON, RICK. Correlated Long-Term Optical and X-Ray Variations in NGC 5548. *Philip Uttley, Rick Edelson, Ian M. McHardy, Bradley M. Peterson, & Alex Markowitz.* 584, L53 (2003)

Contrasting the Ultraviolet and X-Ray O VI Column Density Inferred for the Outflow in NGC 5548. *Nahum Arav, Jelle Kaastra, Katrien Steenbrugge, Bert Brinkman, Rick Edelson, Kirk T. Korista, & Martijn de Kool.* 590, 174 (2003)

EDELSTEIN, JERRY. High-Resolution Broadband Spectroscopy Using an Externally Dispersed Interferometer. *David J. Erskine, Jerry Edelstein, W. Michael Feuerstein, & Barry Welsh.* 592, L103 (2003)

EDGAR, R. See MARKEVITCH, M., et al. *Chandra* Spectra of the Soft X-Ray Diffuse Background.

EDGE, A. C. *Chandra* Observations of the Galaxy Cluster A478: The Interaction of Hot Gas and Radio Plasma in the Core, and an Improved Determination of the Compton y-Parameter. *M. Sun, C. Jones, S. S. Murray, S. W. Allen, A. C. Fabian, & A. C. Edge.* 587, 619 (2003)

A *Chandra* Study of the Complex Structure in the Core of 2A 0335+096. *P. Mazzotta, A. C. Edge, & M. Markevitch.* 596, 190 (2003)

EDGE, ALASTAIR. See LAROQUE, SAMUEL J., et al. Sunyaev-Zeldovich Effect Imaging of MACS Galaxy Clusters at $z > 0.5$.

EDGE, ALASTAIR C. Measuring σ_8 with Cluster Lensing: Biases from Unrelaxed Clusters. *Graham P. Smith, Alastair C. Edge, Vincent R. Eke, Robert C. Nichol, Ian Smail, & Jean-Paul Kneib.* 590, L79 (2003)

Resolving Molecular Gas in the Central Galaxies of Cooling Flow Clusters. *Alastair C. Edge & David T. Frayer.* 594, L13 (2003)

A Unique Small-Scale Gravitational Arc in A1201. *Alastair C. Edge, Graham P. Smith, David J. Sand, Tommaso Treu, Harald Ebeling, Steven W. Allen, & Pieter G. van Dokkum.* 599, L69 (2003)

EDMONDS, P. D. X-Ray Studies of Two Neutron Stars in 47 Tucanae: Toward Constraints on the Equation of State. *C. O. Heinke, J. E. Grindlay, D. A. Lloyd, & P. D. Edmonds.* 588, 452 (2003)

A *Chandra* X-Ray Study of the Dense Globular Cluster Terzan 5. *C. O. Heinke, P. D. Edmonds, J. E. Grindlay, D. A. Lloyd, H. N. Cohn, & P. M. Lugger.* 590, 809 (2003)

Analysis of the Quiescent Low-Mass X-Ray Binary Populaton in Galactic Globular Clusters. *C. O. Heinke, J. E. Grindlay, P. M. Lugger, H. N. Cohn, P. D. Edmonds, D. A. Lloyd, & A. M. Cool.* 598, 501 (2003)

A *Chandra* X-Ray Study of the Globular Cluster M80. *C. O. Heinke, J. E. Grindlay, P. M. Lugger, H. N. Cohn, P. D. Edmonds, D. A. Lloyd, & S. S. Murray.* 598, 516 (2003)

EDMONDS, PETER D. An Extensive Census of *Hubble Space Telescope* Counterparts to *Chandra* X-Ray Sources in the Globular Cluster 47 Tucanae. I. Astrometry and Photometry. *Peter D. Edmonds, Ronald L. Gilliland, Craig O. Heinke, & Jonathan E. Grindlay.* 596, 1177 (2003)

An Extensive Census of *Hubble Space Telescope* Counterparts to *Chandra* X-Ray Sources in the Globular Cluster 47 Tucanae. II. Time Series and Analysis. *Peter D. Edmonds, Ronald L. Gilliland, Craig O. Heinke, & Jonathan E. Grindlay.* 596, 1197 (2003)

EDMUNDS, M. G. Cold Dust in Kepler's Supernova Remnant. *H. L. Morgan, L. Dunne, S. A. Eales, R. J. Ivison, & M. G. Edmunds.* 597, L33 (2003)

EDSJÖ, J. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

EDWARDS, P. G. See ENOMOTO, R., et al. Search for TeV Gamma Rays from SN 1987A in 2001.

EDWARDS, SUZAN. He I λ10830 as a Probe of Winds in Accreting Young Stars. *Suzan Edwards, William Fischer, John Kwan, Lynne Hillenbrand, & A. K. Dupree.* 599, L41 (2003)

EENENS, P. R. J. See MARCHENKO, S. V., et al. The Unusual 2001 Periastron Passage in the "Clockwork" Colliding-Wind Binary WR 140.

EGAN, M. P. Interactions between a Bright Young Stellar Object and the *Micourse Space Experiment* Infrared-Dark Cloud G79.3+0.3: An Early Stage of Triggered Star Formation? *R. O. Redman, P. A. Feldman, F. Wyrowski, S. Côté, S. J. Carey, & M. P. Egan.* 586, 1127 (2003)

EHRENFREUD, P. The Astrobiology of Nucleobases. *Z. Peeters, O. Botta, S. B. Charnley, R. Ruiterkamp, & P. Ehrenfreud.* 593, L129 (2003)

EICHLER, D. See KOUVELIOTOU, C., et al. Unraveling the Cooling Trend of the Soft Gamma Repeater SGR 1627−41.

EICHLER, DAVID. Baryon Loading of Gamma-Ray Burst by Neutron Pickup. *Amir Levinson & David Eichler.* 594, L19 (2003)

Polarization of Gamma-Ray Bursts via Scattering off a Relativistic Sheath. *David Eichler & Amir Levinson.* 596, L147 (2003)

EIDELSBERG, M. An Atlas of the Intersystem Transitions of CO. *M. Eidelsberg & F. Rostas.* 145, 89 (2003)

EIKENBERRY, S. S. Untwisting the Tornado: X-Ray Imaging and Spectroscopy of G357.7−0.1. *B. M. Gaensler, J. K. J. Fogel, P. O. Slane, J. M. Miller, R. Wijnands, S. S. Eikenberry, & W. H. G. Lewin.* 594, L35 (2003)

EIKENBERRY, STEPHEN S. SMC X-1 as an Intermediate-Stage Flaring X-Ray Pulsar. *Dae-Sik Moon, Stephen S. Eikenberry, & Ira M. Wasserman.* 582, L91 (2003)

The Evolution of LMC X-4 Flares: Evidence for Super Eddington Radiation Oosing through Inhomogeneous Polar Cap Accretion Flows? *Dae-Sik Moon, Stephen S. Eikenberry, & Ira M. Wasserman.* 586, 1280 (2003)

A New Search Technique for Short Orbital Period Binary Pulsars. *Scott M. Ransom, James M. Cordes, & Stephen S. Eikenberry.* 589, 911 (2003)

EISENHARDT, PETER R. The K-selected Butcher-Oemler Effect. *Roberto De Propris, S. A. Stanford, Peter R. Eisenhardt, & Mark Dickinson.* 598, 20 (2003)

EISENHAUER, F. See GENZEL, R., et al. The Stellar Cusp around the Supermassive Black Hole in the Galactic Center.

A Geometric Determination of the Distance to the Galactic Center. *F. Eisenhauer, R. Schödel, R. Genzel, T. Ott, M. Tecza, R. Abuter, A. Eckart, & T. Alexander.* 597, L121 (2003)

EISENSTEIN, D. J. See STANEK, K. Z., et al. Spectroscopic Discovery of the Supernova 2003dh Associated with GRB 030329.

See MATHESON, T., et al. Photometry and Spectroscopy of GRB 03029 and Its Associated Supernova 2003dh: The First Two Months.

EISENSTEIN, DANIEL. See SZALAY, ALEXANDER S., et al. Karhunen-Loève Estimation of the Power Spectrum Parameters from the Angular Distribution of Galaxies in Early Sloan Digital Sky Survey Data.

See BLANTON, MICHAEL R., et al. The Broadband Optical Properties of Galaxies with Redshifts $0.02 < z < 0.22$.

EISENSTEIN, DANIEL J. See HOGG, DAVID W., et al. The Overdensities of Galaxy Environments as a Function of Luminosity and Color.

Average Spectra of Massive Galaxies in the Sloan Digital Sky Survey. *Daniel J. Eisenstein, David W. Hogg, Masataka Fukugita, Osamu Nakamura, Mariangela Bernardi, Douglas P. Finkbeiner, David J. Schlegel, J. Brinkmann, Andrew J. Connolly, István Csabai, James E. Gunn, Željko Ivezić, Don Q. Lamb, Jon Loveday, Jeffrey A. Munn, Robert C. Nichol, Donald P. Schneider, Michael A. Strauss, Alex Szalay, & Don G. York.* 585, 694 (2003)

Deprojecting Densities from Angular Cross-Correlations. *Daniel J. Eisenstein.* 586, 718 (2003)

See BUDAVÁRI, TAMÁS, et al. Angular Clustering with Photometric Redshifts in the Sloan Digital Sky Survey: Bimodality in the Clustering Properties of Galaxies.

See SCHMIDT, GARY D., et al. Magnetic White Dwarfs from the Sloan Digital Sky Survey: The First Data Release.

Probing Dark Energy with Baryonic Acoustic Oscillations from Future Large Galaxy Redshift Surveys. *Hee-Jong Seo & Daniel J. Eisenstein.* 598, 720 (2003)

EISLÖFFEL, JOCHEN. Multiwavelength Spectroscopy of the Bipolar Outflow from Cepheus E. *Michael D. Smith, Dirk Froebrich, & Jochen Eislöffel.* 592, 245 (2003)

Molecular Outflows in The Young Open Cluster IC 348. *Jochen Eislöffel, Dirk Froebrich, Thomas Stanke, & Mark J. McCaughrean.* 595, 259 (2003)

EISMONT, N. A. Measurement of ^{3}He/^{4}He in the Local Interstellar Medium: The Collisa Experiment on *Mir*. *E. Salerno, F. Bühler, P. Bochsler, H. Busemann, M. L. Bassi, G. N. Zastenker, Yu. N. Agafonov, & N. A. Eismont.* 585, 840 (2003)

EISNER, J. A. Near-Infrared Interferometric Measurements of Herbig Ae/Be Stars. *J. A. Eisner, B. F. Lane, R. L. Akeson, L. A. Hillenbrand, & A. I. Sargent.* 588, 360 (2003)

Distribution of Circumstellar Disk Masses in the Young Cluster NGC 2024. *J. A. Eisner & John M. Carpenter.* 598, 1341 (2003)

EKBERG, J. O. New Identifications of Mn VII and Fe VIII Lines Belonging to Transitions of the Type $3p^64p$–$3p^64d$ and $3p^53d^2$–$3p^64d$. *J. O. Ekberg & U. Feldman.* 595, 517 (2003)

New Identifications of Mn IV and Fe VII Vacuum Ultraviolet Lines. *J. O. Ekberg & U. Feldman.* 148, 567 (2003)

EKE, VINCENT R. Simulations of Galaxy Formation in a ΛCDM Universe. III. The Dissipative Formation of an Elliptical Galaxy. *Andrés Meza, Julio F. Navarro, Matthias Steinmetz, & Vincent R. Eke.* 590, 619 (2003)

Measuring σ_8 with Cluster Lensing: Biases from Unrelaxed Clusters. *Graham P. Smith, Alastair C. Edge, Vincent R. Eke, Robert C. Nichol, Ian Smail, & Jean-Paul Kneib.* 590, L79 (2003)

Simulations of Galaxy Formation in a Λ Cold Dark Matter Universe. I. Dynamical and Photometric Properties of a Simulated Disk Galaxy. *Mario G. Abadi, Julio F. Navarro, Matthias Steinmetz, & Vincent R. Eke.* 591, 499 (2003)

On the Nature of the Ringlike Structure in the Outer Galactic Disk. *Amina Helmi, Julio F. Navarro, Andrés Meza, Matthias Steinmetz, & Vincent R. Eke.* 592, L25 (2003)

Simulations of Galaxy Formation in a Λ Cold Dark Matter Universe. II. The Fine Structure of Simulated Galactic Disks. *Mario G. Abadi, Julio F. Navarro, Matthias Steinmetz, & Vincent R. Eke.* 597, 21 (2003)

EKSI, K. YAVUZ. Can Thin Disks Produce Anomalous X-Ray Pulsars? *K. Yavuz Eksi & M. Ali Alpar.* 599, 450 (2003)

EKSTRÖM, P. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

ELBAZ, D. A Multiwavelength Approach to the Star Formation Rate Estimation in Galaxies at Intermediate Redshifts. *N. Cardiel, D. Elbaz, R. P. Schiavon, C. N. A. Willmer, D. C. Koo, A. C. Phillips, & J. Gallego.* 584, 76 (2003)

ELITZUR, M. The Flaring H_2O Megamaser and Conpact Radio Source in Markarian 348. *A. B. Peck, C. Henkel, J. S. Ulvestad, A. Brunthaler, H. Falcke, M. Elitzur, K. M. Menten, & J. F. Gallimore.* 590, 149 (2003)

ELLINGSEN, S. P. See GREENHILL, L. J., et al. A Warped Accretion Disk and Wide-Angle Outflow in the Inner Parsec of the Circinus Galaxy.

ELLINGSON, E. Correlations of Richness and Global Properties in Galaxy Clusters. *H. K. C. Yee & E. Ellingson.* 585, 215 (2003)

ELLINGSON, S. W. Mitigation of Radar Interference in L-Band Radio Astronomy. *S. W. Ellingson & G. A. Hampson.* 147, 167 (2003)

ELLIOT, J. L. Scintillation Caustics in Planetary Occultation Light Curves. *Asantha R. Cooray & J. L. Elliot.* 587, L121 (2003)

ELLIS, R. See KNOP, R. A., et al. New Constraints on Ω_M, Ω_Λ, and w from an Independent Set of 11 High-Redshift Supernovae Observed with the *Hubble Space Telescope*.

ELLIS, R. S. See SWINBANK, A. M., et al. Galaxies under the Cosmic Microscope: A Gemini Multiobject Spectrograph Study of the Lensed Disk Galaxy 289 in A2218.

ELLIS, RICHARD S. A Wide-Field *Hubble Space Telescope* Study of the Cluster Cl 0024+16 at $z = 0.4$. I. Morphological Distributions to 5 Mpc Radius. *Tommaso Treu, Richard S. Ellis, Jean-Paul Kneib, Alan Dressler, Ian Smail, Oliver Czoske, Augustus Oemler, & Priyamvada Natarajan.* 591, 53 (2003)

On the Assembly History of Early-Type Galaxies in the Hubble Deep Field–North. *Pieter van Dokkum & Richard S. Ellis.* 592, L53 (2003)

See KNEIB, JEAN-PAUL, et al. A Wide-Field *Hubble Space Telescope* Study of the Cluster Cl 0024+1654 at $z = 0.4$. II. The Cluster Mass Distribution.

See MADGWICK, DARREN S., et al. The DEEP2 Galaxy Redshift Survey: Spectral Classification of Galaxies at $z \sim 1$.

ELLISON, SARA L. The Absorption and Emission Kinematics in the $z = 0.7450$ Mg II Absorber toward Q1331+17. *Sara L. Ellison, Gabriela Mallén-Ornelas, & Marcin Sawicki.* 589, 709 (2003)

The C IV Mass Density of the Universe at Redshift 5. *Max Pettini, Piero Madau, Michael Bolte, Jason X. Prochaska, Sara L. Ellison, & Xiaohui Fan.* 594, 695 (2003)

ELLSWORTH, R. W. See ATKINS, R., et al. The High-Energy Gamma-Ray Fluence and Energy Spectrum of GRB 970417A from Observations with Milagrito.

See FALCONE, A., et al. Observation of GeV Solar Energetic Particles from the 1997 November 6 Event Using Milagrito.

See Atkins, R., et al. Observation of TeV Gamma Rays from the Crab Nebula with Milagro Using a New Background Rejection Technique.

Elmegreen, Bruce G. A Turbulent Origin for Flocculent Spiral Structure in Galaxies. *Bruce G. Elmegreen, Debra Meloy Elmegreen, & Samuel N. Leitner.* 590, 271 (2003)

A Turbulent Origin for Flocculent Spiral Structure in Galaxies. II. Observations and Models of M33. *Bruce G. Elmegreen, Samuel N. Leitner, Debra Meloy Elmegreen, & Jean-Charles Cuillandre.* 593, 333 (2003)

Elmegreen, Debra Meloy. A Turbulent Origin for Flocculent Spiral Structure in Galaxies. *Bruce G. Elmegreen, Debra Meloy Elmegreen, & Samuel N. Leitner.* 590, 271 (2003)

A Turbulent Origin for Flocculent Spiral Structure in Galaxies. II. Observations and Models of M33. *Bruce G. Elmegreen, Samuel N. Leitner, Debra Meloy Elmegreen, & Jean-Charles Cuillandre.* 593, 333 (2003)

Elsila, Jamie E. Side Group Addition to the Polycyclic Aromatic Hydrocarbon Coronene by Proton Irradiation in Cosmic Ice Analogs. *Max P. Bernstein, Marla H. Moore, Jamie E. Elsila, Scott A. Sandford, Louis J. Allamandola, & Richard N. Zare.* 582, L25 (2003)

Elsner, Ronald F. See Becker, Werner, et al. *Chandra X-Ray Observatory* Observations of the Globular Cluster M28 and Its Millisecond Pulsar PSR 1821−24.

Elston, Richard. Gemini-South + FLAMINGOS Demonstration Science: Near-IR Spectroscopy of the $z = 5.77$ Quasar SDSS J083643.85+005453.3. *Daniel Stern, Pat Hall, L. Felipe Barrientos, Andrew J. Bunker, Richard Elston, M. J. Ledlow, S. Nicholas Raines, & Jon Willis.* 596, L39 (2003)

Elsworth, Y. Does the Energy Supplied to Low-l Solar p-Modes Vary over the Activity Cycle? *W. J. Chaplin, Y. Elsworth, G. R. Isaak, B. A. Miller, R. New, & T. Toutain.* 582, L115 (2003)

Elsworth, Y. P. A Comparison of Low-Degree Solar p-Mode Parameters from BiSON and GONG: Underlying Values and Temporal Variations. *R. Howe, W. J. Chaplin, Y. P. Elsworth, F. Hill, R. Komm, G. R. Isaak, & R. New.* 588, 1204 (2003)

Elvis, M. 1WGA J1216.9+3743: *Chandra* Finds an Extremely Steep Ultraluminous X-Ray Source. *I. Cagnoni, R. Turolla, A. Treaves, J.-S. Huang, D. W. Kim, M. Elvis, & A. Celotti.* 582, 654 (2003)

A *Chandra* Minisurvey of X-Ray–weak Quasars. *G. Risaliti, M. Elvis, R. Gilli, & M. Salvati.* 587, L9 (2003)

See Fabbiano, G., et al. The X-Ray–faint Emission of the Supermassive Nuclear Black Hole of IC 1459.

Chandra Observation of 3C 212: A New Look at the X-Ray and Ultraviolet Absorbers. *T. L. Aldcroft, A. Siemiginowska, M. Elvis, S. Mathur, F. Nicastro, & S. S. Murray.* 597, 751 (2003)

Toward a Self-Consistent Model of the Ionized Absorber in NGC 3783. *Y. Krongold, F. Nicastro, N. S. Brickhouse, M. Elvis, D. A. Liedahl, & S. Mathur.* 597, 832 (2003)

Elvis, Martin. See Bechtold, Jill, et al. *Chandra* Survey of Radio-quiet, High-Redshift Quasars.

See Siemiginowska, Aneta, et al. *Chandra* Discovery of an X-Ray Jet and Extended X-Ray Structure in $z = 0.63$ Quasar B2 0738+313.

See Karovska, Margarita, et al. Spatially Resolved Circumnuclear Dust in Centaurus A.

Elvis, Martin S. See Kuraszkiewicz, Joanna K., et al. The Far-Infrared Spectral Energy Distributions of X-Ray–selected Active Galaxies.

El-Zant, Amr A. Galaxy Formation in Triaxial Halos: Black Hole–Bulge–Dark Halo Correlation. *Amr A. El-Zant, Isaac Shlosman, Mitchell C. Begelman, & Juhan Frank.* 590, 641 (2003)

Long-lived Double-barred Galaxies: Critical Mass and Length Scales. *Amr A. El-Zant & Isaac Shlosman.* 595, L41 (2003)

Emonet, T. Polarization of Photospheric Lines from Turbulent Dynamo Simulations. *J. Sánchez Almeida, T. Emonet, & F. Cattaneo.* 585, 536 (2003)

Emonet, Thierry. On the Interaction between Convection and Magnetic Fields. *Fausto Cattaneo, Thierry Emonet, & Nigel Weiss.* 588, 1183 (2003)

Emonts, B. H. C. Fast Outflow of Neutral Hydrogen in the Radio Galaxy 3C 293. *R. Morganti, T. A. Oosterloo, B. H. C. Emonts, J. M. van der Hulst, & C. N. Tadhunter.* 593, L69 (2003)

Emslie, A. G. See Lin, R. P., et al. *RHESSI* Observations of Particle Acceleration and Energy Release in an Intense Solar Gamma-Ray Line Flare.

Emslie, A. Gordon. Electron Bremsstrahlung Hard X-Ray Spectra, Electron Distributions, and Energetics in the 2002 July 23 Solar Flare. *Gordon D. Holman, Linhui Sui, Richard A. Schwartz, & A. Gordon Emslie.* 595, L97 (2003)

RHESSI Hard X-Ray Imaging Spectroscopy of the Large Gamma-Ray Flare of 2002 July 23. *A. Gordon Emslie, Eduard P. Kontar, Säm Krucker, & Robert P. Lin.* 595, L107 (2003)

The Determination and Use of Mean Electron Flux Spectra in Solar Flares. *John C. Brown, A. Gordon Emslie, & Eduard P. Kontar.* 595, L115 (2003)

The Determination of the Total Injected Power in Solar Flare Electrons. *A. Gordon Emslie.* 595, L119 (2003)

An Explanation for Non–Power-Law Behavior in the Hard X-Ray Spectrum of the 2002 July 23 Solar Flare. *Eduard P. Kontar, John C. Brown, A. Gordon Emslie, Richard A. Schwartz, David M. Smith, & R. Calum Alexander.* 595, L123 (2003)

Regularized Electron Flux Spectra in the 2002 July 23 Solar Flare. *Michele Piana, Anna Maria Massone, Eduard P. Kontar, A. Gordon Emslie, John C. Brown, & Richard A. Schwartz.* 595, L127 (2003)

Endeve, Eirik. Two-dimensional Magnetohydrodynamic Models of the Solar Corona: Mass Loss from the Streamer Belt. *Eirik Endeve, Egil Leer, & Thomas E. Holzer.* 589, 1040 (2003)

Endl, Michael. A Planetary Companion to γ Cephei A. *Artie P. Hatzes, William D. Cochran, Michael Endl, Barbara McArthur, Diane B. Paulson, Gordon A. H. Walker, Bruce Campbell, & Stephenson Yang.* 599, 1383 (2003)

Ene, Alexandru. See Habbal, Shadia Rifai, et al. On the Detection of the Signature of Silicon Nanoparticle Dust Grains in Coronal Holes.

Engargiola, G. Giant Molecular Clouds in M33. I. BIMA All-Disk Survey. *G. Engargiola, R. L. Plambeck, E. Rosolowsky, & L. Blitz.* 149, 343 (2003)

Giant Molecular Clouds in M33. II. High-Resolution Observations. *E. Rosolowsky, G. Engargiola, R. Plambeck, & L. Blitz.* 599, 257 (2003)

Enomoto, R. Galactic Gamma-Ray Halo of the Nearby Starbust Galaxy NGC 253. *C. Itoh, R. Enomoto, S. Yanagita, T. Yoshida, & T. G. Tsuru.* 584, L65 (2003)

Search for TeV Gamma Rays from SN 1987A in 2001. *R. Enomoto, L. T. Ksenofontov, H. Katagiri, K. Tsuchiya, A. Asahara, G. V. Bicknell, R. W. Clay, P. G. Edwards, S. Gunji, S. Hara, T. Hara, H. Hattori, Sei. Hayashi, Shin. Hayashi, C. Itoh, S. Kabuki, F. Kajino, A. Kawachi, T. Kifune, H. Kubo, J. Kushida, Y. Matsubara, Y. Mizumoto, M. Mori, H. Moro, H. Muraishi, Y. Muraki, T. Naito, T. Nakase, D. Nishida, K. Nishijima, M. Ohishi, K. Okumura, J. R. Patterson, R. J. Protheroe, K. Sakurazawa, D. L. Swaby, T. Tanimori, F. Tokanai, H. Tsunoo, T. Uchida, A. Watanabe, S. Watanabe, S. Yanagita, T. Yoshida, & T. Yoshikoshi.* 591, L25 (2003)

Constraints on Cold Dark Matter in the Gamma-Ray Halo of NGC 253. *R. Enomoto, T. Yoshida, S. Yanagita, & C. Itoh.* 596, 216 (2003)

Ensslin, Torsten A. Are the Faraday Rotating Magnetic Fields Local to Intracluster Radio Galaxies? *Torsten A. Ensslin, Corina Vogt, T. E. Clarke, & Greg B. Taylor.* 597, 870 (2003)

Enya, Keigo. See Yoshii, Yuzuru, et al. The Optical/Near-Infrared Light Curves of SN 2002ap for the First 140 Days after Discovery.

Eracleous, M. The *XMM-Newton* View of the Nucleus of NGC 4261. *R. M. Sambruna, M. Gliozzi, M. Eracleous, W. N. Brandt, & R. Mushotzky.* 586, L37 (2003)

See Schaefer, Bradley E., et al. GRB 021004: A Massive Progenitor Star Surrounded by Shells.

Search for a Point-Source Counterpart of the Unidentified Gamma-Ray Source TeV J2032+4130 in Cygnus. *R. Mukherjee, J. P. Halpern, E. V. Gotthelf, M. Eracleous, & N. Mirabal.* 589, 487 (2003)

Eracleous, Michael. The *ASCA* X-Ray Spectrum of Arp 102B and Evaluation of Simple Models for Its Associated, Metastable Fe II Absorber. *Michael Eracleous, Jules P. Halpern, & Jane C. Charlton.* 582, 633 (2003)

Long-Term Continuous Monitoring of the Broad-Line Radio Galaxies 3C 390.3 and 3C 120 with the *Rossi X-Ray Timing Explorer*. *Mario Gliozzi, Rita M. Sambruna, & Michael Eracleous.* 584, 176 (2003)

Emission-Line Diagnostics of the Central Engines of Weak-Line Radio Galaxies. *Karen T. Lewis, Michael Eracleous, & Rita M. Sambruna.* 593, 115 (2003)

See Storchi-Bergmann, Thaisa, et al. Evolution of the Nuclear Accretion Disk Emission in NGC 1097: Getting Closer to the Black Hole.

Completion of a Survey and Detailed Study of Double-peaked Emission Lines in Radio-loud Active Galactic Nuclei. *Michael Eracleous & Jules P. Halpern.* 599, 886 (2003)

ERB, DAWN K. Hα Spectroscopy of Galaxies at $z > 2$: Kinematics and Star Formation. *Dawn K. Erb, Alice E. Shapley, Charles C. Steidel, Max Pettini, Kurt L. Adelberger, Matthew P. Hunt, Alan F. M. Moorwood, & Jean-Gabriel Cuby.* 591, 101 (2003)

ERDÉLYI, R. Correlations on Arcsecond Scales between Chromospheric and Transition Region Emission in Active Regions. *B. De Pontieu, T. Tarbell, & R. Erdélyi.* 590, 502 (2003)

Intensity Oscillations in the Upper Transition Region above Active Region Plage. *B. De Pontieu, R. Erdélyi, & A. G. de Wijn.* 595, L63 (2003)

ERIGUCHI, YOSHIHARU. Linear Stability Analysis of Differentially Rotating Polytropes: New Results for the $M = 2$ F-Mode Dynamical Instability. *Shigeyuki Karino & Yoshiharu Eriguchi.* 592, 1119 (2003)

ERSKINE, DAVID J. High-Resolution Broadband Spectroscopy Using an Externally Dispersed Interferometer. *David J. Erskine, Jerry Edelstein, W. Michael Feuerstein, & Barry Welsh.* 592, L103 (2003)

ERTAN, Ü. On the Enhanced X-Ray Emission from SGR 1900+14 after the August 27 Giant Flare. *Ü. Ertan & M. A. Alpar.* 593, L93 (2003)

ERWIN, PETER. An Imaging Survey of Early-Type Barred Galaxies. *Peter Erwin & Linda S. Sparke.* 146, 299 (2003)

When Is a Bulge Not a Bulge? Inner Disks Masquerading as Bulges in NGC 2787 and NGC 3945. *Peter Erwin, Juan Carlos Vega Beltrán, Alister W. Graham, & John E. Beckman.* 597, 929 (2003)

ESKRIDGE, PAUL B. Ultraviolet-Optical Pixel Maps of Face-on Spiral Galaxies: Clues for Dynamics and Star Formation Histories. *Paul B. Eskridge, Jay A. Frogel, Violet A. Taylor, Rogier A. Windhorst, Stephen C. Odewahn, Claudia A. T. C. Chiarenza, Christopher J. Conselice, Richard de Grijs, Lynn D. Matthews, Robert W. O'Connell, & John S. Gallagher III.* 586, 923 (2003)

ESPAILLAT, C. See MIRABAL, N., et al. GRB 021004: A Possible Shell Nebula around a Wolf-Rayet Star Gamma-Ray Burst Progenitor.

ESPOSITO, A. The Effects of Ion Irradiation on the Evolution of the Carrier of the 3.4 Micron Interstellar Absoprtion Band. *V. Memmella, G. A. Baratta, A. Esposito, G. Ferini, & Y. J. Pendleton.* 587, 727 (2003)

ESPOSITO, LARRY W. Infrared Observations during the Secondary Eclipse of HD 209458b. I. 3.6 Micron Occultation Spectroscopy Using the Very Large Telescope. *L. Jeremy Richardson, Drake Deming, Guenter Wiedemann, Cedric Goukenleuque, David Steyert, Joseph Harrington, & Larry W. Esposito.* 584, 1053 (2003)

ESPRESATE, JULIA. Nonlinear Effects in Models of the Galaxy. I. Midplane Stellar Orbits in the Presence of Three-Dimensional Spiral Arms. *Bárbara Pichardo, Marco Martos, Edmundo Moreno, & Julia Espresate.* 582, 230 (2003)

ESQUIVEL, A. Statistics of Velocity from Spectral Data: Modified Velocity Centroids. *A. Lazarian & A. Esquivel.* 592, L37 (2003)

ESSER, R. Formation of Minor-Ion Charge States in the Fast Solar Wind: Roles of Differential Flow Speeds of Ions of the Same Element. *Y. Chen, R. Esser, & Y. Hu.* 582, 467 (2003)

ESTEBAN, CÉSAR. Very Large Telescope Echelle Spectrophotometry of the Planetary Nebula NGC 5307 and Temperature Variations. *María Teresa Ruiz, Antonio Peimbert, Manuel Peimbert, & César Esteban.* 595, 247 (2003)

ETO, SHIGERU. See IWAMURO, FUMIHIDE, et al. Infrared Spectroscopy of 15 Radio Galaxies at $2 < z < 2.6$.

ETTORI, S. Iron Abundance in the Intracluster Medium at High Redshift. *P. Tozzi, P. Rosati, S. Ettori, S. Borgani, V. Mainieri, & C. Norman.* 593, 705 (2003)

EVANS, A. See DRAKE, JEREMY J., et al. The Extraordinary X-Ray Light Curve of the Classical Nova V1494 Aquilae (1999 No. 2) in Outburst: The Discovery of Pulsations and a "Burst."

EVANS, ANNA KATHINKA DALLAND. See COLLEY, WESLEY N., et al. Around-the-Clock Observations of the Q9057+561A,B Gravitationally Lensed Quasar. II. Results for the Second Observing Season.

EVANS, C. J. A Tale of Two Stars: The Extreme O7 Iaf+ Supergiant AV 83 and the OC7.5 III((f)) Star AV 69. *D. John Hillier, T. Lanz, S. R. Heap, I. Hubeny, L. J. Smith, C. J. Evans, D. J. Lennon, & J. C. Bouret.* 588, 1039 (2003)

Quantitative Spectroscopy of O Stars at Low Metallicity: O Dwarfs in NGC 346. *J.-C. Bouret, T. Lanz, D. J. Hillier, S. R. Heap, I. Hubeny, D. J. Lennon, L. J. Smith, & C. J. Evans.* 595, 1182 (2003)

EVANS, D. See ATKINS, R., et al. The High-Energy Gamma-Ray Fluence and Energy Spectrum of GRB 970417A from Observations with Milagrito.

EVANS, N. W. New Mass Estimators for Tracer Populations. *N. W. Evans, M. I. Wilkinson, K. M. Perrett, & T. J. Bridges.* 583, 752 (2003)

See KERINS, E., et al. Theory of Pixel Lensing toward M31. II. The Velocity Anisotropy and Flattening of the MACHO Distribution.

EVANS, N. WYN. A Dynamical Fossil in the Ursa Minor Dwarf Spheroidal Galaxy. *Jan T. Kleyna, Mark I. Wilkinson, Gerard Gilmore, & N. Wyn Evans.* 588, L21 (2003)

A Dynamical Fossil in the Ursa Minor Dwarf Spheroidal Galaxy: Erratum (ApJ, 588, L21 [2003]). *Jan T. Kleyna, Mark I. Wilkinson, Gerard Gilmore, & N. Wyn Evans.* 589, L59 (2003) (Orig. paper in 588, L21 (2003))

EVANS, NANCY REMAGE. *Chandra* Observations of Associates of η Carinae. I. Luminosities. *Nancy Remage Evans, Frederick D. Seward, Miriam I. Krauss, Takashi Isobe, Joy Nichols, Eric M. Schlegel, & Scott J. Wolk.* 589, 509 (2003)

EVANS, NEAL J., II. Chemistry and Dynamics in Pre-protostellar Cores. *Jeong-Eun Lee, Neal J. Evans II, Yancy L. Shirley, & Ken'ichi Tatematsu.* 583, 789 (2003)

Tracing the Mass during Low-Mass Star Formation. IV. Observations and Modeling of the Submillimeter Continuum Emission from Class I Protostars. *Chadwick H. Young, Yancy L. Shirley, Neal J. Evans II, & Jonathan M. C. Rawlings.* 145, 111 (2003)

Indications of Inflow Motions in Regions Forming Massive Stars. *Neal J. Evans II & Jingwen Wu.* 592, L79 (2003)

A CS $J = 5 \rightarrow 4$ Mapping Survey Toward High-Mass Star-Forming Cores Associated with Water Masers. *Yancy L. Shirley, Neal J. Evans II, Kaisa E. Young, Claudia Knez, & Daniel T. Jaffe.* 149, 375 (2003)

EVERETT, M. E. See MATHESON, T., et al. Photometry and Spectroscopy of GRB 03029 and Its Associated Supernova 2003dh: The First Two Months.

EVRARD, AUGUST E. Future Evolution of Cosmic Structure in an Accelerating Universe. *Michael T. Busha, Fred C. Adams, Risa H. Wechsler, & August E. Evrard.* 596, 713 (2003)

EXTER, K. M. Emission Lines of Cl II in the Optical Spectra of Gaseous Nebulae. *F. P. Keenan, L. H. Aller, K. M. Exter, S. Hyung, & D. L. Pollacco.* 584, 385 (2003)

EYCHANER, G. See COLAVITA, M., et al. Observations of DG Tauri with the Keck Interferometer.

FABBIANO, G. Spectral Visibility of the Nucleus of M33 in a *Chandra*/ACIS Observation. *V. La Parola, F. Damiani, G. Fabbiano, & G. Peres.* 583, 758 (2003)

The Time-variable Ultraluminous X-Ray Sources of "The Antennae." *G. Fabbiano, A. Zezas, A. R. King, T. J. Ponman, A. Rots, & Francois Schweizer.* 584, L5 (2003)

X-Ray Spectroscopic Evidence for Intermediate-Mass Black Holes: Cool Accretion Disks in Two Ultraluminous X-Ray Sources. *J. M. Miller, G. Fabbiano, M. C. Miller, & A. C. Fabian.* 585, L37 (2003)

The Nuclear Accretion in the FR I Radio Galaxy IC 4296 from *Chandra* and Very Long Baseline Array Observations. *S. Pellegrini, T. Venturi, A. Comastri, G. Fabbiano, F. Fiore, C. Vignali, R. Morganti, & G. Trinchieri.* 585, 677 (2003)

Chandra X-Ray Observations of NGC 1316 (Fornax A). *Dong-Woo Kim & G. Fabbiano.* 586, 826 (2003)

ROSAT HRI Investigation of the NGC 507 X-Ray Halo. *M. Paolillo, G. Fabbiano, G. Peres, & D.-W. Kim.* 586, 850 (2003)

The X-Ray–faint Emission of the Supermassive Nuclear Black Hole of IC 1459. *G. Fabbiano, M. Elvis, S. Markoff, A. Siemiginowska, S. Pellegrini, A. Zezas, F. Nicastro, G. Trinchieri, & J. McDowell.* 588, 175 (2003)

A Variable Ultraluminous Supersoft X-Ray Source in "The Antennae": Stellar-Mass Black Hole or White Dwarf? *G. Fabbiano, A. R. King, A. Zezas, T. J. Ponman, A. Rots, & François Schweizer.* 591, 843 (2003)

An *XMM-Newton* and *Chandra* Investigation of the Nuclear Accretion in the Sombrero Galaxy (NGC 4594). *S. Pellegrini, A. Baldi, G. Fabbiano, & D.-W. Kim.* 597, 175 (2003)

The Multicolored Hot Interstellar Medium of the "Antennae" Galaxies (NGC 4038/4039). *G. Fabbiano, M. Krauss, A. Zezas, A. Rots, & S. Neff.* 598, 272 (2003)

NGC 4261 and NGC 4697: Rejuvenated Elliptical Galaxies. *A. Zezas, L. Hernquist, G. Fabbiano, & J. Miller.* 599, L73 (2003)

FABBRO, S. See KNOP, R. A., et al. New Constraints on Ω_M, Ω_Λ, and w from an Independent Set of 11 High-Redshift Supernovae Observed with the *Hubble Space Telescope*.

FABER, S. M. See GEBHARDT, KARL, et al. Axisymmetric Dynamical Models of the Central Regions of Galaxies.

See PINKNEY, JASON, et al. Kinematics of 10 Early-Type Galaxies from *Hubble Space Telescope* and Ground-based Spectroscopy.

See GEBHARDT, KARL, et al. The DEEP Groth Strip Survery. IX. Evolution of the Fundamental Plane of Field Galaxies.

See KOBULNICKY, HENRY A., et al. The DEEP Groth Strip Survey. VII. The Metallicity of Field Galaxies at $0.26 < z < 0.82$ and the Evolution of the Luminosity-Metallicity Relation.

FABER, SANDY M. See MADGWICK, DARREN S., et al. The DEEP2 Galaxy Redshift Survey: Spectral Classification of Galaxies at $z \sim 1$.

FABIAN, A. C. X-Ray Spectroscopic Evidence for Intermediate-Mass Black Holes: Cool Accretion Disks in Two Ultraluminous X-Ray Sources. *J. M. Miller, G. Fabbiano, M. C. Miller, & A. C. Fabian.* 585, L37 (2003)

Chandra Observations of the Galaxy Cluster A478: The Interaction of Hot Gas and Radio Plasma in the Core, and an Improved Determination of the Compton y-Parameter. *M. Sun, C. Jones, S. S. Murray, S. W. Allen, A. C. Fabian, & A. C. Edge.* 587, 619 (2003)

The Contribution of Particle Impact to the Production of Fe Kα Emission from Accreting Black Holes. *D. R. Ballantyne & A. C. Fabian.* 592, 1089 (2003)

X-Ray–Extreme Ultraviolet Simultaneous Observations of NGC 5548: Fast Extreme Ultraviolet Dip without X-Ray Variation. *Y. Haba, H. Kunieda, K. Misaki, Y. Terashima, J. S. Kaastra, R. Mewe, A. C. Fabian, & K. Iwasawa.* 599, 949 (2003)

FABIAN, ANDREW C. Accretion onto the Supermassive Black Hole in M87. *Tiziana Di Matteo, Steven W. Allen, Andrew C. Fabian, Andrew S. Wilson, & Andrew J. Young.* 582, 133 (2003)

FABIAN, D. Infrared Properties of Solid Titanium Oxides: Exploring Potential Primary Dust Condensates. *T. Posch, F. Kerschbaum, D. Fabian, H. Mutschke, J. Dorschner, A. Tamanai, & T. Henning.* 149, 437 (2003)

FABIAN, DIRK. Origins of the Highly Ionized Gas along the Line of Sight toward HD 116852. *Andrew J. Fox, Blair D. Savage, Kenneth R. Sembach, Dirk Fabian, Philipp Richter, David M. Meyer, James Lauroesch, & J. Christopher Howk.* 582, 793 (2003)

FAHLMAN, GREGORY G. The Pulsar/White Dwarf/Planet System in M4: Improved Astrometry. *Harvey B. Richer, Rodrigo Ibata, Gregory G. Fahlman, & Mark Huber.* 597, L45 (2003)

FALCETA-GONCALVES, D. Dusty Molecular Cloud Collapse in the Presence of Alfvén Waves. *D. Falceta-Goncalves, M. C. de Juli, & V. Jatenco-Pereira.* 597, 970 (2003)

FALCHI, A. *Solar and Heliospheric Observatory*/Coronal Diagnostic Spectrograph and Ground-based Observations of a Two-Ribbon Flare: Spatially Resolved Signatures of Chromospheric Evaporation. *L. Teriaca, A. Falchi, G. Cauzzi, R. Falciani, L. A. Smaldone, & V. Andretta.* 588, 596 (2003)

FALCIANI, R. *Solar and Heliospheric Observatory*/Coronal Diagnostic Spectrograph and Ground-based Observations of a Two-Ribbon Flare: Spatially Resolved Signatures of Chromospheric Evaporation. *L. Teriaca, A. Falchi, G. Cauzzi, R. Falciani, L. A. Smaldone, & V. Andretta.* 588, 596 (2003)

FALCKE, H. The Flaring H_2O Megamaser and Conpact Radio Source in Markarian 348. *A. B. Peck, C. Henkel, J. S. Ulvestad, A. Brunthaler, H. Falcke, M. Elitzur, K. M. Menten, & J. F. Gallimore.* 590, 149 (2003)

FALCKE, HEINO. Interferometric Detection of Linear Polarization from Sagittarius A* at 230 GHz. *Geoffrey C. Bower, Melvyn C. H. Wright, Heino Falcke, & Donald C. Backer.* 588, 331 (2003)

FALCO, E. See MATHESON, T., et al. The Spectroscopic Variability of GRB 021004.

FALCO, E. E. See RUSIN, D., et al. The Evolution of a Mass-selected Sample of Early-Type Field Galaxies.

The Redshift Distribution of Flat-Spectrum Radio Sources. *J. A. Muñoz, E. E. Falco, C. S. Kochanek, J. Lehár, & E. Mediavilla.* 594, 684 (2003)

FALCÓN-BARROSO, JESÚS. The Near-Infrared Ca II Triplet–σ Relation for Bulges of Spiral Galaxies. *Jesús Falcón-Barroso, Reynier F. Peletier, Alexandre Vazdekis, & Marc Balcells.* 588, L17 (2003)

FALCONE, A. See HOLDER, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.

See ATKINS, R., et al. The High-Energy Gamma-Ray Fluence and Energy Spectrum of GRB 970417A from Observations with Milagrito.

Observation of GeV Solar Energetic Particles from the 1997 November 6 Event Using Milagrito. *A. Falcone, R. Atkins, W. Benbow, D. Berley, M. L. Chen, D. G. Coyne, B. L. Dingus, D. E. Dorfan, R. W. Ellsworth, L. Fleysher, R. Fleysher, G. Gisler, J. A. Goodman, T. J. Haines, C. M. Hoffman, S. Hugenberger, L. A. Kelley, I. Leonor, J. F. McCullough, J. E. McEnery, R. S. Miller, A. I. Mincer, M. F. Morales, P. Nemethy, J. M. Ryan, B. Shen, A. Shoup, G. Sinnis, A. J. Smith, G. W. Sullivan, T. Tumer, K. Wang, M. O. Wascko, S. Westerhoff, D. A. Williams, T. Yang, & G. B. Yodh.* 588, 557 (2003)

See ATKINS, R., et al. Observation of TeV Gamma Rays from the Crab Nebula with Milagro Using a New Background Rejection Technique.

See DE LA CALLE PÉREZ, I., et al. Search for High-Energy Gamma Rays from an X-Ray–Selected Blazar Sample.

FALCONER, D. A. Solar Coronal Heating and the Magnetic Flux Content of the Network. *D. A. Falconer, R. L. Moore, J. G. Porter, & D. H. Hathaway.* 593, 549 (2003)

FALGARONE, E. On the Use of Fractional Brownian Motion Simulations to Determine the Three-dimensional Statistical Properties of Interstellar Gas. *M.-A. Miville-Deschênes, F. Levrier, & E. Falgarone.* 593, 831 (2003)

FALL, S. MICHAEL. Heavy-Element Abundances and Dust Depletions in the Host Galaxies of Three Gamma-Ray Bursts. *Sandra Savaglio, S. Michael Fall, & Fabrizio Fiore.* 585, 638 (2003)

FALLON, ADAM A. An *IUE* Atlas of Pre–Main-Sequence Stars. III. Co-Added Final Archive Spectra from the Long-Wavelength Cameras. *Jeff A. Valenti, Adam A. Fallon, & Christopher M. Johns-Krull.* 147, 305 (2003)

FALOMO, R. Black Hole Masses and the Fundamental Plane of BL Lacertae Objects. *R. Falomo, J. K. Kotilainen, N. Carangelo, & A. Treves.* 595, 624 (2003)

FALOMO, RENATO. Host Galaxies of Low-Z Radio-loud Quasars: A Search of *Hubble Space Telescope* Archives. *Claudio Pagani, Renato Falomo, & Aldo Treves.* 596, 830 (2003)

FALTER, S. See GREEN, E. M., et al. Discovery of a New Class of Pulsating Stars: Gravity-Mode Pulsators among Subdwarf B Stars.

FAN, J. H. Relation between BL Lacertae Objects and Flat-Spectrum Radio Quasars. *J. H. Fan.* 585, L23 (2003)

See BÖTTCHER, M., et al. Coordinated Multiwavelength Observations of BL Lacertae in 2000.

FAN, XIAOHUI. See SZKODY, PAULA, et al. Two Rare Magnetic Cataclysmic Variables with Extreme Cyclotron Features Identified in the Sloan Digital Sky Survey.

VLT+UVES Spectroscopy of the Ca II Low-Ionization Broad Absorption Line Quasar SDSS J030000.56+004828.0. *Patrick B. Hall, Damien Hutsmékers, Scott F. Anderson, J. Brinkmann, Xiaohui Fan, Donald P. Schneider, & Donald G. York.* 593, 189 (2003)

The C IV Mass Density of the Universe at Redshift 5. *Max Pettini, Piero Madau, Michael Bolte, Jason X. Prochaska, Sara L. Ellison, & Xiaohui Fan.* 594, 695 (2003)

Combining *Wilkinson Microwave Anisotropy Probe* and Sloan Digital Sky Survey Quasar Data on Reionization Constrains Cosmological Parameters and Star Formation Efficiency. *Weihsueh A. Chiu, Xiaohui Fan, & Jeremiah P. Ostriker.* 599, 759 (2003)

FAN, Y. The Dynamic Evolution of Twisted Magnetic Flux Tubes in a Three-dimensional Convecting Flow. I. Uniformly Buoyant Horizontal Tubes. *Y. Fan, W. P. Abbett, & G. H. Fisher.* 582, 1206 (2003)

The Emergence of a Twisted Magnetic Flux Tube into a Preexisting Coronal Arcade. *Y. Fan & S. E. Gibson.* 589, L105 (2003)

The Mass of a Solar Quiescent Prominence. *B. C. Low, B. Fong, & Y. Fan.* 594, 1060 (2003)

FAN, ZUHUI. Measuring the Deviation from the Linear and Deterministic Bias through Cosmic Gravitational Lensing Effects. *Zuhui Fan.* 594, 33 (2003)

The Effects of Relativistic Corrections on Cosmological Parameter Estimations from Sunyaev-Zel'dovich Effect Cluster Surveys. *Zuhui Fan & Yanling Wu.* 598, 713 (2003)

FANG, C. Hα Line Polarization in the Major Flare of 2002 July 23. I. Observations and Data Analysis. *N. M. Firstova, Z. Xu, & C. Fang.* 595, L131 (2003)

Coronal Plume Heating and Kinetic Dissipation of Kinetic Alfvén Waves. *D. J. Wu & C. Fang.* 596, 656 (2003)

FANG, LI-ZHI. One-Point Statistics of the Cosmic Density Field in Real and Redshift Spaces with a Multiresolutional Decomposition. *Hu Zhan & Li-Zhi Fang.* 585, 12 (2003)

Intermittent Features of the Quasar Lyα Transmitted Flux: Results from Cosmological Hydrodynamic Simulations. *Long-Long Feng, Jesus Pando, & Li-Zhi Fang.* 587, 487 (2003)

The Multiphase Intracluster Medium in Galaxy Groups Probed by the Lyα Forest. *Hu Zhan, Li-Zhi Fang, & David Burstein.* 592, L1 (2003)

Hydrogen Clouds before Reionization: A Lognormal Model Approach. *Hongguang Bi, Li-Zhi Fang, Longlong Feng, & Yipeng Jing.* 598, 1 (2003)

FANG, TAOTAO. *Chandra* Detection of Local O II Heα Absorption along the Sight Line toward 3C 273. *Taotao Fang, Kenneth R. Sembach, & Claude R. Canizares.* 586, L49 (2003)

FANTI, R. Decline of the Space Density of Quasars between $z = 2$ and $z = 4$. *M. Vigotti, R. Carballo, C. R. Benn, G. De Zotti, R. Fanti, J. I. Gonzalez Serrano, K.-H. Mack, & J. Holt.* 591, 43 (2003)

FARAONI, V. On the Total Energy of Open Friedmann-Robertson-Walker Universes. *V. Faraoni & F. I. Cooperstock.* 587, 483 (2003)

FARESE, P. See CRILL, B. P., et al. BOOMERANG: A Balloon-Borne Millimeter-Wave Telescope and Total Power Receiver for Mapping Anisotropy in the Cosmic Microwave Background.

FARMER, A. J. See MASON, B. S., et al. The Anisotropy of the Microwave Background to $l = 3500$: Deep Field Observatons with the Cosmic Background Imager.

See PEARSON, T. J., et al. The Anisotropy of the Microwave Background to $l = 3500$: Mosaic Observations with the Cosmic Background Imager.

FARMER, ALISON J. Occultation Searches for Kuiper Belt Objects. *Asantha Cooray & Alison J. Farmer.* 587, L125 (2003)

Finding White Dwarfs with Transit Searches. *Alison J. Farmer & Eric Agol.* 592, 1151 (2003)

FASSNACHT, C. D. The Hubble Constant from the Gravitational Lens B1608+656. *L. V. E. Koopmans, T. Treu, C. D. Fassnacht, R. D. Blandford, & G. Surpi.* 599, 70 (2003)

FATUZZO, MARCO. A Kinsip between the EGRET Supernova Remnants and Sagittarius A East. *Marco Fatuzzo & Fulvio Melia.* 596, 1035 (2003)

FAULKNER, A. J. See MCLAUGHLIN, M. A., et al. PSR J1847−0130: A Radio Pulsar with Magnetar Spin Characteristics.

FAZIO, G. G. See KRAEMER, KATHLEEN E., et al. Five Star-forming Cores in the Galactic Ring Survey: A Mid-Infrared Study.

FAZIO, GIOVANNI G. See KAROVSKA, MARGARITA, et al. Spatially Resolved Circumnuclear Dust in Centaurus A.

FEDERMAN, S. R. An Ultrahigh-Resolution Survey of the Interstellar ^{7}Li/^{6}Li Isotope Ratio in the Solar Neighborhood. *David C. Knauth, S. R. Federman, & David L. Lambert.* 586, 268 (2003)

Nonthermal Chemistry in Diffuse Clouds with Low Molecular Abundances. *J. Zsargó & S. R. Federman.* 589, 319 (2003)

Further Evidence for Chemical Fractionation from Ultraviolet Observations of Carbon Monoxide. *S. R. Federman, David L. Lambert, Yaron Sheffer, Jason A. Cardelli, B.-G. Andersson, Ewine F. van Dishoeck, & J. Zsargó.* 591, 986 (2003)

An Ultra–High-Resolution Survey of the Interstellar ^{7}Li/^{6}Li Isotope Ratio in the Solar Neighborhood: Erratum (ApJ, 586, 268 [2003]). *David C. Knauth, S. R. Federman, & David L. Lambert.* 594, 664 (2003) (Orig. paper in 586, 268 (2003))

FUSE Measurements of Rydberg Bands of Interstellar CO between 925 and 1150 Å. *Yaron Sheffer, S. R. Federman, & B.-G. Andersson.* 597, L29 (2003)

FEGAN, D. J. See HOLDER, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.

See HALL, T. A., et al. Search for TeV Emissions from Pulsars in Binary Systems.

See AKERLOF, C. W., et al. A Search for Correlations of TeV Gamma Rays with Ultra–High-Energy Cosmic Rays.

See DE LA CALLE PÉREZ, I., et al. Search for High-Energy Gamma Rays from an X-Ray–Selected Blazar Sample.

FEGAN, S. J. See HOLDER, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.

See HALL, T. A., et al. Search for TeV Emissions from Pulsars in Binary Systems.

See DE LA CALLE PÉREZ, I., et al. Search for High-Energy Gamma Rays from an X-Ray–Selected Blazar Sample.

FEIGELSON, E. D. See MUNO, M. P., et al. A Deep *Chandra* Catalog of X-Ray Point Sources toward the Galactic Center.

See BAGANOFF, F. K., et al. *Chandra* X-Ray Spectroscopic Imaging of Sagittarius A* and the Central Parsec of the Galaxy.

FEIGELSON, ERIC. X-Rays from the Vicinity of the Protostar L1551 IRS 5: Reflection or Fast Shocks? *John Bally, Eric Feigelson, & Bo Reipurth.* 584, 843 (2003)

FEIGELSON, ERIC D. X-Rays in the Orion Nebula Cluster: Constraints on the Origins of Magnetic Activity in Pre–Main-Sequence Stars. *Eric D. Feigelson, James A. Gaffney III, Gordon Garmire, Lynne A. Hillenbrand, & Leisa Townsley.* 584, 911 (2003)

Coronal X-Ray Emission from an Intermediate-Age Brown Dwarf. *Yohko Tsuboi, Yoshitomo Maeda, Eric D. Feigelson, Gordon P. Garmire, George Chartas, Koji Mori, & Steven H. Pravdo.* 587, L51 (2003)

10 MK Gas in M17 and the Rosette Nebula: X-Ray Flows in Galactic H II Regions. *Leisa K. Townsley, Eric D. Feigelson, Thierry Montmerle, Patrick S. Broos, You-Hua Chu, & Gordon P. Garmire.* 593, 874 (2003)

The ϵ Chamaeleontis Young Stellar Group and the Characterization of Sparse Stellar Clusters. *Eric D. Feigelson, Warrick A. Lawson, & Gordon P. Garmire.* 599, 1207 (2003)

FEINSTEIN, CARLOS. Optical Polarization Observations of NGC 6231: Evidence for a Past Supernova Fingerprint. *Carlos Feinstein, Ruben Martinez, M. Marcela Vergne, Gustavo Baume, & Ruben Vazquez.* 598, 349 (2003)

FELDMAN, H. An Estimate of Ω_m without Conventional Priors. *H. Feldman, R. Juszkiewicz, P. Ferreira, M. Davis, E. Gaztañaga, J. Fry, A. Jaffe, S. Chambers, L. da Costa, M. Bernardi, R. Giovanelli, M. Haynes, & G. Wegner.* 596, L131 (2003)

FELDMAN, HUME A. Optimal Moments for the Analysis of Peculiar Velocity Surveys. II. Testing. *Hume A. Feldman, Richard Watkins, Adrian L. Melott, & Scott W. Chambers.* 599, 820 (2003)

FELDMAN, P. A. Interactions between a Bright Young Stellar Object and the *Micourse Space Experiment* Infrared-Dark Cloud G79.3+0.3: An Early Stage of Triggered Star Formation? *R. O. Redman, P. A. Feldman, F. Wyrowski, S. Côté, S. J. Carey, & M. P. Egan.* 586, 1127 (2003)

The G11.11−0.12 Infrared-dark Cloud: Anomalous Dust and a Nonmagnetic Isothermal Model. *Doug Johnstone, Jason D. Fiege, R. O. Redman, P. A. Feldman, & Sean J. Carey.* 588, L37 (2003)

FELDMAN, P. D. See TRAN, H. D., et al. Advanced Camera for Surveys Observations of Young Star Clusters in the Interacting Galaxy UGC 10214.

See BLAKESLEE, JOHN P., et al. Discovery of Two Distant Type Ia Supernovae in the Hubble Deep Field–North with the Advanced Camera for Surveys.

See BOUWENS, R. J., et al. Star Formation at $z \sim 6$: i-Dropouts in the Advanced Camera for Surveys Guaranteed Time Observation Fields.

See MEURER, GERHARDT R., et al. The Discovery of Globular Clusters in the Protospiral Galaxy NGC 2915: Implications for Hierarchical Galaxy Evolution.

FELDMAN, U. Mass Motions and Plasma Properties in the 10^7 K Flare Solar Corona. *E. Landi, U. Feldman, D. E. Innes, & W. Curdt.* 582, 506 (2003)

Nonthermal Mass Motions within the High-Temperature Plasmas above a Complex Solar Active Region. *U. Feldman, E. Landi, & W. Curdt.* 585, 1087 (2003)

Temperature Measurements in the Solar Transition Region Using N III Line Intensity Ratios. *R. Doron, G. A. Doschek, J. M. Laming, U. Feldman, & A. K. Bhatia.* 590, 1121 (2003)

Properties of Solar Plasmas near Solar Maximum above Two Quiet Regions at Distances of 1.02–1.34 $R_\odot$. *E. Landi & U. Feldman.* 592, 607 (2003)

Free-Free Emission in the Far-Ultraviolet Spectral Range: A Resource for Diagnosing Solar and Stellar Flare Plasmas. *U. Feldman, E. Landi, G. A. Doschek, I. Dammasch, & W. Curdt.* 593, 1226 (2003)

New Identifications of Mn VII and Fe VIII Lines Belonging to Transitions of the Type $3p^64p$–$3p^64d$ and $3p^53d^2$–$3p^64d$. *J. O. Ekberg & U. Feldman.* 595, 517 (2003)

New Identifications of Mn IV and Fe VII Vacuum Ultraviolet Lines. *J. O. Ekberg & U. Feldman.* 148, 567 (2003)

FELDMAN, URI. The Variability of the Solar Coronal Helium Abundance: Polar Coronal Holes Compared to the Quiet Sun. *J. Martin Laming & Uri Feldman.* 591, 1257 (2003)

FELDMEIER, JOHN J. Kinematics of Planetary Nebulae in M51's Tidal Debris. *Patrick R. Durrell, J. Christopher Mihos, John J. Feldmeier, George H. Jacoby, & Robin Ciardullo.* 582, 170 (2003)

Intracluster Planetary Nebulae in the Virgo Cluster. II. Imaging Catalog. *John J. Feldmeier, Robin Ciardullo, George H. Jacoby, & Patrick R. Durrell.* 145, 65 (2003)

FELDT, M. Discovery of a Candidate for the Central Star of the Ultracompact H II Region G5.89−0.39. *M. Feldt, E. Puga, R. Lenzen, Th. Henning,*

W. Brandner, B. Stecklum, A.-M. Lagrange, E. Gendron, & G. Rousset. 599, L91 (2003)

FELIZARDO, C. See COLAVITA, M., et al. Observations of DG Tauri with the Keck Interferometer.

FELLHAUER, M. The White Dwarf Deficit in Open Clusters: Dynamical Processes. *M. Fellhauer, D. N. C. Lin, M. Bolte, S. J. Aarseth, & K. A. Williams.* 595, L53 (2003)

FELLOWS, C. See PRICE, P. A., et al. Discovery of GRB 020405 and Its Late Red Bump.

FENDER, R. X-Ray Emission from the Jets of XTE J1550−564. *P. Kaaret, S. Corbel, J. A. Tomsick, R. Fender, J. M. Miller, J. A. Orosz, T. Tzioumis, & R. Wijnands.* 582, 945 (2003)

FENDER, ROB. X-Ray Jet Emission from the Black Hole X-Ray Binary XTE J1550−564 with *Chandra* in 2000. *John A. Tomsick, Stéphane Corbel, Rob Fender, Jon M. Miller, Jerome A. Orosz, Tasso Tzioumis, Rudy Wijnands, & Philip Kaaret.* 582, 933 (2003)

Hard X-Ray Flares Preceding Soft X-Ray Outbursts in Aquila X-1: A Link between Neutron Star and Black Hole Transitions. *Wenfei Yu, Marc Klein-Wolt, Rob Fender, & Michiel van der Klis.* 589, L33 (2003)

See TOMSICK, JOHN A., et al. *Chandra* Detections of Two Quiescent Black Hole X-Ray Transients.

FENG, C. F. See AMENOMORI, M., et al. Multi-TeV Gamma-Ray Flares from Markarian 421 in 2000 and 2001 Observed with the Tibet Air Shower Array.

FENG, LONG-LONG. Intermittent Features of the Quasar Lyα Transmitted Flux: Results from Cosmological Hydrodynamic Simulations. *Long-Long Feng, Jesus Pando, & Li-Zhi Fang.* 587, 487 (2003)

FENG, LONGLONG. Hydrogen Clouds before Reionization: A Lognormal Model Approach. *Hongguang Bi, Li-Zhi Fang, Longlong Feng, & Yipeng Jing.* 598, 1 (2003)

FENG, X. S. Electron Acceleration by Lower Hybrid Turbulence in Solar Flares. *Q. Y. Luo, F. S. Wei, & X. S. Feng.* 584, 497 (2003)

FENG, Y. X. Probing with the Inflow/Outflow and Accretion Disk of Cygnus X-1 in High State with the *Chandra* High Energy Transmission Grating. *Y. X. Feng, A. F. Tennant, & S. N. Zhang.* 597, 1017 (2003)

FENG, YUXIN. A New Method to Resolve X-Ray Halos around Point Sources with *Chandra* Data and Its Application to Cygnus X-1. *Yangsen Yao, Shuang Nan Zhang, Xiaoling Zhang, & Yuxin Feng.* 594, L43 (2003)

FENG, Z. Y. See AMENOMORI, M., et al. Multi-TeV Gamma-Ray Flares from Markarian 421 in 2000 and 2001 Observed with the Tibet Air Shower Array.

FENIMORE, E. E. See CREW, G. B., et al. *HETE-2* Localization and Observation of the Bright, X-Ray–rich Gamma-Ray Burst GRB 021211.

FERGUSON, HENRY C. Far-Ultraviolet Emission from Elliptical Galaxies at $z = 0.33$. *Thomas M. Brown, Henry C. Ferguson, Ed Smith, Charles W. Bowers, Randy A. Kimble, Alvio Renzini, & R. Michael Rich.* 584, L69 (2003)

The Evolution of the Global Stellar Mass Density at $0 < z < 3$. *Mark Dickinson, Casey Papovich, Henry C. Ferguson, & Tamás Budavári.* 587, 25 (2003)

Gravitational Lensing by Burkert Halos. *Yousin Park & Henry C. Ferguson.* 589, L65 (2003)

Evidence of a Significant Intermediate-Age Population in the M31 Halo from Main-Sequence Photometry. *Thomas M. Brown, Henry C. Ferguson, Ed Smith, Randy A. Kimble, Allen V. Sweigart, Alvio Renzini, R. Michael Rich, & Don A. VandenBerg.* 592, L17 (2003)

The Star-forming Dwarf Galaxy Populations of two $z \sim 0.4$ Clusters: MS 1512.4+3647 and A851. *Jennifer M. Lotz, Crystal L. Martin, & Henry C. Ferguson.* 596, 143 (2003)

The Internal Ultraviolet–Optical Color Dispersion: Quantifying the Morphological K-Correction. *Casey Papovich, Mauro Giavalisco, Mark Dickinson, Christopher J. Conselice, & Henry C. Ferguson.* 598, 827 (2003)

FERINI, G. The Effects of Ion Irradiation on the Evolution of the Carrier of the 3.4 Micron Interstellar Absoprtion Band. *V. Mennella, G. A. Baratta, A. Esposito, G. Ferini, & Y. J. Pendleton.* 587, 727 (2003)

FERLAND, G. J. The Mass of Quasar Broad Emission Line Regions. *J. A. Baldwin, G. J. Ferland, K. T. Korista, F. Hamann, & M. Dietrich.* 582, 590 (2003)

Chemical Abundances in Broad Emission Line Regions: The "Nitrogen-loud" Quasi-Stellar Object Q0353−383. *J. A. Baldwin, F. Hamann, K. T. Korista, G. J. Ferland, M. Dietrich, & C. Warner.* 583, 649 (2003)

FERLET, R. See ANDRÉ, M. K., et al. Oxygen Gas-Phase Abundance Revisited.

FERNANDEZ, M. Rotational Periods of Very Young Brown Dwarfs and Very Low-Mass Stars in Chamaeleon I. *V. Joergens, M. Fernández, J. M. Carpenter, & R. Neuhäuser.* 594, 971 (2003)

FEROCI, M. See DE PASQUALE, M., et al. A Comparative Study of the X-Ray Afterglow Properties of Optically Bright and Dark Gamma-Ray Bursts.

See WOODS, P. M., et al. The 2001 April Burst Activation of SGR 1900+14: Pulse Properties and Torque.

The 2001 April Burst Activation of SGR 1900+14: X-Ray Afterglow Emission. *M. Feroci, S. Mereghetti, P. Woods, C. Kouveliotou, E. Costa, D. D. Frederiks, S. V. Golenetskii, K. Hurley, E. Mazets, P. Soffitta, & M. Tavani.* 596, 470 (2003)

FERRANDO, P. A New X-Ray Flare from the Galactic Nucleus Detected with the *XMM-Newton* Photon Imaging Cameras. *A. Goldwurm, E. Brion, P. Goldoni, P. Ferrando, F. Daigne, A. Decourchelle, R. S. Warwick, & P. Predehl.* 584, 751 (2003)

FERRARA, ANDREA. The Detectability of the First Stars and Their Cluster Enrichment Signatures. *Evan Scannapieco, Raffaella Schneider, & Andrea Ferrara.* 589, 35 (2003)

FERRARESE, LAURA. *Hubble Space Telescope* Observations of Novae in M49. *Laura Ferrarese, Patrick Côté, & Andrés Jordán.* 599, 1302 (2003)

FERRARI, C. Galaxy Alignments as a Probe of the Dynamical State of Clusters. *M. Pfiomis, C. Benoist, S. Maurogordato, C. Ferrari, & S. Basilakos.* 594, 144 (2003)

FERRARIO, L. A Multiwavelength Study of the High-Field Magnetic White Dwarf EUVE J0317−85.5 (=RE J0317−853). *Stéphane Vennes, G. D. Schmidt, L. Ferrario, D. J. Christian, D. T. Wickramasinghe, & A. Kawka.* 593, 1040 (2003)

FERRARO, F. R. Accurate Mass Ratio and Heating Effects in the Dual-Line Millisecond Binary Pulsar in NGC 6397. *F. R. Ferraro, E. Sabbi, R. Gratton, A. Possenti, N. D'Amico, A. Bragaglia, & F. Camilo.* 584, L13 (2003)

The Complex Hα Line Profile of the Bright Companion to PSR J1740−5340 in NGC 6397. *E. Sabbi, R. Gratton, F. R. Ferraro, A. Bragaglia, A. Possenti, N. D'Amico, & F. Camilo.* 589, L41 (2003)

The Puzzling Dynamical Status of the Core of the Globular Cluster NGC 6752. *F. R. Ferraro, A. Possenti, E. Sabbi, P. Lagani, R. T. Rood, N. D'Amico, & L. Origlia.* 595, 179 (2003)

FERRARO, FRANCESCO R. Blue Straggler Stars: A Direct Comparison of Star Counts and Population Ratios in Six Galactic Globular Clusters. *Francesco R. Ferraro, Alison Sills, Robert T. Rood, Barbara Paltrinieri, & Roberto Buonanno.* 588, 464 (2003)

A Near-Infrared Spectroscopic Screening of the Red Giant Populations in ω Centauri. *Livia Origlia, Francesco R. Ferraro, Michele Bellazzini, & Elena Pancino.* 591, 916 (2003)

The Helium White Dwarf Orbiting the Millisecond Pulsar in the Halo of the Globular Cluster NGC 6752. *Francesco R. Ferraro, Andrea Possenti, Elena Sabbi, & Nichi D'Amico.* 596, L211 (2003)

Blue Horizontal-Branch Stars in the Sagittarius Dwarf Spheroidal Galaxy. *Lorenzo Monaco, Michele Bellazzini, Francesco R. Ferraro, & Elena Pancino.* 597, L25 (2003)

FERRAZ-MELLO, S. Extrasolar Planets in Mean-Motion Resonance: Apses Alignment and Asymmetric Stationary Solutions. *C. Beaugé, S. Ferraz-Mello, & T. A. Michtchenko.* 593, 1124 (2003)

FERREIRA, P. See FELDMAN, H., et al. An Estimate of Ω_m without Conventional Priors.

FERREIRA, S. E. S. Solar Wind Effects on the Transport of 3–10 MeV Cosmic-Ray Electrons from Solar Minimum to Solar Maximum. *S. E. S. Ferreira, M. S. Potgieter, D. M. Moeketsi, B. Heber, & H. Fichtner.* 594, 552 (2003)

FERREL, RAGNAR. Rotation of a Pulsed Jet, or Plume in a Rotation Flow: A Source of Helicity for an α-ω Astrophysical Dynamo. *Howard F. Beckley, Stirling A. Colgate, Van D. Romero, & Ragnar Ferrel.* 599, 702 (2003)

FERRIGNO, C. High Resolution X-Ray Spectroscopic Constraints on Cooling-Flow Models for Clusters of Galaxies. *J. R. Peterson, S. M. Kahn, F. B. S. Paerels, J. S. Kaastra, T. Tamura, J. A. M. Bleeker, C. Ferrigno, & J. G. Jernigan.* 590, 207 (2003)

FESEN, ROBERT A. *Chandra* Observations of the Luminous, Oxygen-rich Supernova Remnants in the Irregular Galaxy NGC 4449. *Daniel J. Patnaude & Robert A. Fesen.* 587, 221 (2003)

FESER, T. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

FEUERSTEIN, W. MICHAEL. High-Resolution Broadband Spectroscopy Using an Externally Dispersed Interferometer. *David J. Erskine, Jerry Edelstein, W. Michael Feuerstein, & Barry Welsh.* 592, L103 (2003)

FEULNER, G. The Munich Near-Infrared Cluster Survey. II. The *K*-Band Luminosity Function of Field Galaxies to $z \sim 1.2$. *N. Drory, R. Bender, G. Feulner, U. Hopp, C. Maraston, J. Snigula, & G. J. Hill.* 595, 698 (2003)

FICH, M. The Impact of Ionizing Stars on the Diffuse Interstellar Medium: A Swept-Up Shell and Ionized Halo around the W4 Chimney/Superbubble. *S. Terebey, M. Fich, R. Taylor, Y. Cao, & T. Hancock.* 590, 906 (2003)

FICHTNER, H. Solar Wind Effects on the Transport of 3–10 MeV Cosmic-Ray Electrons from Solar Minimum to Solar Maximum. *S. E. S. Ferreira, M. S. Potgieter, D. M. Moeketsi, B. Heber, & H. Fichtner.* 594, 552 (2003)

FIEGE, JASON D. The G11.11−0.12 Infrared-dark Cloud: Anomalous Dust and a Nonmagnetic Isothermal Model. *Doug Johnstone, Jason D. Fiege, R. O. Redman, P. A. Feldman, & Sean J. Carey.* 588, L37 (2003)

Magnetic Structure of a Dark Bok Globule. *Jacques P. Vallée, Jane S. Greaves, & Jason D. Fiege.* 588, 910 (2003)

FIELDS, BRIAN D. On the Baryometric Status of ^{3}He. *Elisabeth Vangioni-Flam, Keith A. Olive, Brian D. Fields, & Michel Cassé.* 585, 611 (2003)

On Nonprimordial Deuterium Production by Accelerated Particles. *Tijana Prodanović & Brian D. Fields.* 597, 48 (2003)

FIELDS, DALE L. High-Precision Limb-Darkening Measurement of a K3 Giant Using Microlensing. *Dale L. Fields, M. D. Albrow, J. An, J. P. Beaulieu, J. A. R. Caldwell, D. L. DePoy, M. Dominik, B. S. Gaudi, A. Gould, J. Greenhill, K. Hill, U. G. Jorgensen, S. Kane, R. Martin, J. Menzies, R. W. Pogge, K. R. Pollard, P. D. Sackett, K. C. Sahu, P. Vermaak, R. Watson, A. Williams, J. F. Glicenstein, & P. H. Hauschildt.* 596, 1305 (2003)

FIGER, DONALD F. High-Precision Stellar Radial Velocities in the Galactic Center. *Donald F. Figer, Diane Gilmore, Sungsoo S. Kim, Mark Morris, E. E. Becklin, Ian S. McLean, Andrea M. Gilbert, James R. Graham, James E. Larkin, N. A. Levenson, & Harry I. Teplitz.* 599, 1139 (2003)

FILHO, CESAR MEIRELLES. Pion Production in the Inner Disk Around Cygnus X-1. *Cesar Meirelles Filho, Celso L. Lima, Hideaki Miyake, & Varese Timoteo.* 595, 322 (2003)

FILHO, MERCEDES E. The Radio Properties of Composite LINER/H II Galaxies: Erratum (ApJS, 142, 223 [2002]). *Mercedes E. Filho, Peter D. Barthel, & Luis C. Ho.* 144, 211 (2003) (Orig. paper in 142, 223 (2002))

FILIPPENKO, A. V. See MATHESON, T., et al. Photometry and Spectroscopy of GRB 03029 and Its Associated Supernova 2003dh: The First Two Months.

FILIPPENKO, ALEXEI V. See GEBHARDT, KARL, et al. Axisymmetric Dynamical Models of the Central Regions of Galaxies.

A Search for "Dwarf" Seyfert Nuclei. VI. Properties of Emission-Line Nuclei in Nearby Galaxies. *Luis C. Ho, Alexei V. Filippenko, & Wallace L. W. Sargent.* 583, 159 (2003)

Emission and Absorption in the M87 LINER. *Bassem M. Sabra, Joseph C. Shields, Luis C. Ho, Aaron J. Barth, & Alexei V. Filippenko.* 584, 164 (2003)

The Early Light Curve of the Optical Afterglow of GRB 021211. *Weidong Li, Alexei V. Filippenko, Ryan Chornock, & Saurabh Jha.* 586, L9 (2003)

A Low-Mass Central Black Hole in the Bulgeless Seyfert 1 Galaxy NGC 4395. *Alexei V. Filippenko & Luis C. Ho.* 588, L13 (2003)

See POOLEY, DAVID, et al. Dynamical Formation of Close Binary Systems in Globular Clusters.

See MICHAEL, ELI, et al. *Hubble Space Telescope* Observations of High-Velocity Lyα and Hα Emission from Supernova Remnant 1987A: The Structure and Development of the Reverse Shock.

See TONRY, JOHN L., et al. Cosmological Results from High-z Supernovae.

See MIRABAL, N., et al. GRB 021004: A Possible Shell Nebula around a Wolf-Rayet Star Gamma-Ray Burst Progenitor.

See PINKNEY, JASON, et al. Kinematics of 10 Early-Type Galaxies from *Hubble Space Telescope* and Ground-based Spectroscopy.

See STORCHI-BERGMANN, THAISA, et al. Evolution of the Nuclear Accretion Disk Emission in NGC 1097: Getting Closer to the Black Hole.

FINGER, M. H. See WOODS, P. M., et al. The 2001 April Burst Activation of SGR 1900+14: Pulse Properties and Torque.

FINGER, MARK H. XTE J1946+271 = GRO J1944+26: An Enigmatic Be/X-Ray Binary. *Colleen A. Wilson, Mark H. Finger, M. J. Coe, & Ignacio Negueruela.* 584, 996 (2003)

See PATEL, SANDEEP K., et al. *Chandra* Observations of the Anomalous X-Ray Pulsar 4U 0142+61.

FINGERHUT, ROBIN L. The Extinction and Distance of Maffei 1. *Robin L. Fingerhut, Marshall L. McCall, Michael De Robertis, Robin L. Kingsburgh, Michael Komljenovic, Henry Lee, & Ronald J. Buta.* 587, 672 (2003)

FINKBEINER, DOUGLAS P. See EISENSTEIN, DANIEL J., et al. Average Spectra of Massive Galaxies in the Sloan Digital Sky Survey.

A Full-Sky Hα Template for Microwave Foreground Prediction. *Douglas P. Finkbeiner.* 146, 407 (2003)

See MADGWICK, DARREN S., et al. The DEEP2 Galaxy Redshift Survey: Spectral Classification of Galaxies at $z \sim 1$.

FINKELSTEIN, STEVEN L. Cool Companions to White Dwarfs from the Two Micron All-Sky Survey Second Incremental Data Release. *Stefanie Wachter, D. W. Hoard, Kathryn H. Hansen, Rebecca E. Wilcox, Hilda M. Taylor, & Steven L. Finkelstein.* 586, 1356 (2003)

FINLEY, J. See AKERLOF, C. W., et al. A Search for Correlations of TeV Gamma Rays with Ultra–High-Energy Cosmic Rays.

FINLEY, J. P. See HOLDER, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.

See HALL, T. A., et al. Search for TeV Emissions from Pulsars in Binary Systems.

See DE LA CALLE PÉREZ, I., et al. Search for High-Energy Gamma Rays from an X-Ray–Selected Blazar Sample.

FINOGUENOV, A. Role of Clusters of Galaxies in the Evolution of the Metal Budget in the Universe. *A. Finoguenov, A. Burkert, & H. Böhringer.* 594, 136 (2003)

FIOCCHI, M. See GRANDI, P., et al. *BeppoSAX* Observations of Centaurus A: The Hard Continuum and the Iron-Line Feature.

FIOCCHI, MARIATERESA. Detection of X-Ray Emission from the Eastern Radio Lobe of Pictor A. *Paola Grandi, Matteo Guainazzi, Laura Maraschi, Raffaella Morganti, Roberto Fusco-Femiano, Mariateresa Fiocchi, Lucia Ballo, & Fabrizio Tavecchio.* 586, 123 (2003)

FIORE, F. The Nuclear Accretion in the FR I Radio Galaxy IC 4296 from *Chandra* and Very Long Baseline Array Observations. *S. Pellegrini, T. Venturi, A. Comastri, G. Fabbiano, F. Fiore, C. Vignali, R. Morganti, & G. Trinchieri.* 585, 677 (2003)

BeppoSAX Average Spectra of Seyfert Galaxies. *A. Malizia, L. Bassani, J. B. Stephen, G. Di Cocco, F. Fiore, & A. J. Dean.* 589, L17 (2003)

See DE PASQUALE, M., et al. A Comparative Study of the X-Ray Afterglow Properties of Optically Bright and Dark Gamma-Ray Bursts.

FIORE, FABRIZIO. Heavy-Element Abundances and Dust Depletions in the Host Galaxies of Three Gamma-Ray Bursts. *Sandra Savaglio, S. Michael Fall, & Fabrizio Fiore.* 585, 638 (2003)

Time-dependent Photoionization in a Dusty Medium. II. Evolution of Dust Distributions and Optical Opacities. *Rosalba Perna, Davide Lazzati, & Fabrizio Fiore.* 585, 775 (2003)

See SIEMIGINOWSKA, ANETA, et al. *Chandra* Discovery of an X-Ray Jet and Extended X-Ray Structure in $z = 0.63$ Quasar B2 0738+313.

FIRMANI, CLAUDIO. The Effects of Non-Gaussian Initial Conditions on the Structure and Substructure of Cold Dark Matter Halos. *Vladimir Avila-Reese, Pedro Colín, Gabriella Piccinelli, & Claudio Firmani.* 598, 36 (2003)

FIRSTOVA, N. M. Hα Line Polarization in the Major Flare of 2002 July 23. I. Observations and Data Analysis. *N. M. Firstova, Z. Xu, & C. Fang.* 595, L131 (2003)

FISCHER, DEBRA A. Seven New Keck Planets Orbiting G and K Dwarfs. *R. Paul Butler, Geoffrey W. Marcy, Steven S. Vogt, Debra A. Fischer, Gregory W. Henry, Gregory Laughlin, & Jason T. Wright.* 582, 455 (2003)

A Planetary Companion to HD 40979 and Additional Planets Orbiting HD 12661 and HD 38529. *Debra A. Fischer, Geoffrey W. Marcy, R. Paul Butler, Steven S. Vogt, Gregory W. Henry, Dimitri Pourbaix, Bernard Walp, Anthony A. Misch, & Jason T. Wright.* 586, 1394 (2003)

A Sub-Saturn Mass Planet Orbiting HD 3651. *Debra A. Fischer, R. Paul Butler, Geoffrey W. Marcy, Steven S. Vogt, & Gregory W. Henry.* 590, 1081 (2003)

Early-Type Stars: Most Favorable Targets for Astrometrically Detectable Planets in the Habitable Zone. *Andrew Gould, Eric B. Ford, & Debra A. Fischer.* 591, L155 (2003)

A Planet in a Circular Orbit with a 6 Year Period. *Brad D. Carter, R. Paul Butler, C. G. Tinney, Hugh R. A. Jones, Geoffrey W. Marcy, Chris McCarthy, Debra A. Fischer, & Alan J. Penny.* 593, L43 (2003)

FISCHER, J. The [C II] 158 Micron Line Deficit in Ultraluminous Infrared Galaxies Revisited. *M. L. Luhman, S. Satyapal, J. Fischer, M. G. Wolfire, E. Sturm, C. C. Dudley, D. Lutz, & R. Genzel.* 594, 758 (2003)

FISCHER, WILLIAM. He I λ10830 as a Probe of Winds in Accreting Young Stars. *Suzan Edwards, William Fischer, John Kwan, Lynne Hillenbrand, & A. K. Dupree.* 599, L41 (2003)

FISCHERA, JÖRG. Starburst Galaxies: Why the Calzetti Dust Extinction Law? *Jörg Fischera, Michael A. Dopita, & Ralph S. Sutherland.* 599, L21 (2003)

FISH, V. L. Dual Cometary H II Regions in DR 21: Bow Shocks or Champagne Flows? *C. J. Cyganowski, M. J. Reid, V. L. Fish, & P. T. P. Ho.* 596, 344 (2003)

FISH, VINCENT L. H I Absorption toward Ultracompact H II Regions: Distances and Galactic Structure. *Vincent L. Fish, Mark J. Reid, David J. Wilner, & Ed Churchwell.* 587, 701 (2003)

Interstellar Hydroxyl Masers in the Galaxy. II. Zeeman Pairs and the Galactic Magnetic Field. *Vincent L. Fish, Mark J. Reid, Alice L. Argon, & Karl M. Menten.* 596, 328 (2003)

FISHER, DON. See CLOSE, LAIRD M., et al. Mid-Infrared Imaging of the Post–Asymptotic Giant Branch Star AC Herculis with the Multiple Mirror Telescope Adaptive Optics System.

See CLOSE, LAIRD M., et al. High-Resolution Images of Orbital Motion in the Trapezium Cluster: First Scientific Results from the Multiple Mirror Telescope Deformable Secondary Mirror Adaptive Optics System.

FISHER, G. H. A Coupled Model for the Emergence of Active Region Magnetic Flux into the Solar Corona. *W. P. Abbett & G. H. Fisher.* 582, 475 (2003)

The Dynamic Evolution of Twisted Magnetic Flux Tubes in a Three-dimensional Convecting Flow. I. Uniformly Buoyant Horizontal Tubes. *Y. Fan, W. P. Abbett, & G. H. Fisher.* 582, 1206 (2003)

A Viscoelastic Theory of Turbulent Fluid Permeated with Fibril Magnetic Fields. *D. W. Longcope, T. C. B. McLeish, & G. H. Fisher.* 599, 661 (2003)

FISHER, GEORGE H. See HAWLEY, SUZANNE L., et al. Multiwavelength Observations of Flares on AD Leonis.

The Relationship Between X-Ray Radiance and Magnetic Flux. *Alexei A. Pevtsov, George H. Fisher, Loren W. Acton, Dana W. Longcope, Christopher M. Johns-Krull, Charles C. Kankelborg, & Thomas R. Metcalf.* 598, 1387 (2003)

FISHER, R. SCOTT. Mid-Infrared Imaging of the Protostellar Binary L1448N IRS 3(A,B). *David R. Ciardi, Charles M. Telesco, Jonathan P. Williams, R. Scott Fisher, Chris Packham, Robert Piña, & James Radomski.* 585, 392 (2003)

Mid-Infrared Imaging of the First-Ascent Giant HD 233517. *R. Scott Fisher, C. M. Telesco, Robert K. Piña, & Roger F. Knacke.* 586, L91 (2003)

Resolved Mid-Infrared Emission in the Narrow-Line Region of NGC 4151. *James T. Radomski, Robert K. Piña, Christopher Packham, Charles M. Telesco, James M. De Buizer, R. Scott Fisher, & A. Robinson.* 587, 117 (2003)

FISHMAN, G. J. Particle Acceleration in Relativistic Jets due to Weibel Instability. *K.-I. Nishikawa, P. Hardee, G. Richardson, R. Preece, H. Sol, & G. J. Fishman.* 595, 555 (2003)

FITELSON, WALT. Atmospheric Turbulence Measurements at Mount Wilson Observatory. *Nicholas Short, Walt Fitelson, & Charles H. Townes.* 599, 1469 (2003)

FITZPATRICK, E. L. Fundamental Properties and Distances of Large Magellanic Cloud Eclipsing Binaries. IV. HV 5936. *E. L. Fitzpatrick, I. Ribas, E. F. Guinan, F. P. Maloney, & A. Claret.* 587, 685 (2003)

FIXSEN, D. J. The Spectrum of the Cosmic Microwave Background Anisotropy from the Combined *COBE* FIRAS and *WMAP* Observations. *D. J. Fixsen.* 594, L67 (2003)

See AGUIRRE, J. E., et al. The Spectrum of Integrated Millimeter Flux of the Magellanic Clouds and 30 Doradus from TopHat and DIRBE Data.

FLACCOMIO, E. *Chandra* X-Ray Observation of the Orion Nebula Cluster. I. Detection, Identification, and Determination of X-Ray Luminosities. *E. Flaccomio, F. Damiani, G. Micela, S. Sciortino, F. R. Harnden, Jr., S. S. Murray, & S. J. Wolk.* 582, 382 (2003)

Chandra X-Ray Observation of the Orion Nebula Cluster. II. Relationship between X-Ray Activity Indicators and Stellar Parameters. *E. Flaccomio, F. Damiani, G. Micela, S. Sciortino, F. R. Harnden, Jr., S. S. Murray, & S. J. Wolk.* 582, 398 (2003)

Chandra Observations of the Young Open Cluster NGC 2516. *F. Damiani, E. Flaccomio, G. Micela, S. Sciortino, F. R. Harnden, Jr., S. S. Murray, S. J. Wolk, & R. D. Jeffries.* 588, 1009 (2003)

FLANAGAN, EANNA E. Saturation of the r-Mode Instability. *Phil Arras, Eanna E. Flanagan, Sharon M. Morsink, A. Katrin Schenk, Saul A. Teukolsky, & Ira Wasserman.* 591, 1129 (2003)

FLECK, JEAN-JULIEN. Parametric Dwarf Spheroidal Tidal Interaction. *Jean-Julien Fleck & J. R. Kuhn.* 592, 147 (2003)

FLEISHMAN, G. D. Optically Thick Gyrosynchrotron Emission from Anisotropic Electron Distributions. *G. D. Fleishman & V. F. Melnikov.* 584, 1071 (2003)

Gyrosynchrotron Emission from Anisotropic Electron Distributions. *G. D. Fleishman & V. F. Melnikov.* 587, 823 (2003)

Optically Thick Gyrosynchrotron Emission from Anisotropic Electron Distributions: Erratum (ApJ, 584, 1071 [2003]). *G. D. Fleishman & V. F. Melnikov.* 593, 597 (2003) (Orig. paper in 584, 1071 (2003))

Gyrosynchrotron Emission from Anisotropic Electron Distributions: Erratum (ApJ, 587, 823 [2003]). *G. D. Fleishman & V. F. Melnikov.* 593, 598 (2003) (Orig. paper in 587, 823 (2003))

FLEISHMAN, GREGORY D. Decimetric Spike Bursts versus Microwave Continuum. *Gregory D. Fleishman, Dale E. Gary, & Gelu M. Nita.* 593, 571 (2003)

FLEMING, THOMAS A. The Quiescent Corona of VB 10. *Thomas A. Fleming, Mark S. Giampapa, & David Garza.* 594, 982 (2003)

FLEMING, TIMOTHY. Local Magnetohydrodynamic Models of Layered Accretion Disks. *Timothy Fleming & James M. Stone.* 585, 908 (2003)

FLEYSHER, L. See ATKINS, R., et al. The High-Energy Gamma-Ray Fluence and Energy Spectrum of GRB 970417A from Observations with Milagrito.

See FALCONE, A., et al. Observation of GeV Solar Energetic Particles from the 1997 November 6 Event Using Milagrito.

See ATKINS, R., et al. Observation of TeV Gamma Rays from the Crab Nebula with Milagro Using a New Background Rejection Technique.

FLEYSHER, R. See ATKINS, R., et al. The High-Energy Gamma-Ray Fluence and Energy Spectrum of GRB 970417A from Observations with Milagrito.

See FALCONE, A., et al. Observation of GeV Solar Energetic Particles from the 1997 November 6 Event Using Milagrito.

See ATKINS, R., et al. Observation of TeV Gamma Rays from the Crab Nebula with Milagro Using a New Background Rejection Technique.

FLINT, K. See PRICE, P. A., et al. Discovery of GRB 020405 and Its Late Red Bump.

See MATHESON, T., et al. Photometry and Spectroscopy of GRB 03029 and Its Associated Supernova 2003dh: The First Two Months.

FLIRI, JÜRGEN. The Wendelstein Calar Alto Pixellensing Project (WeCAPP): First MACHO Candidates. *Arno Riffeser, Jürgen Fliri, Ralf Bender, Stella Seitz, & Claus A. Gössl.* 599, L17 (2003)

FLOOR, STEPHAN N. Eccentricity Evolution in Simulated Galaxy Clusters. *Stephan N. Floor, Adrian L. Melott, Christopher J. Miller, & Greg L. Bryan.* 591, 741 (2003)

FLORES, H. See WEBB, T. M., et al. The Canada-UK Deep Submillimeter Survey. VI. The 3 Hour Field.

FLORINSKI, V. Cosmic-Ray Spectra at Spherical Termination Shocks. *V. Florinski & J. R. Jokipii.* 591, 454 (2003)

FLUDRA, ANDRZEJ. Dynamical and Physical Properties of a Post–Coronal Mass Ejection Current Sheet. *Yuan-Kuen Ko, John C. Raymond, Jun Lin, Gareth Lawrence, Jing Li, & Andrzej Fludra.* 594, 1068 (2003)

FLYNN, CHRIS. Galactic Halo Stars in Phase Space: A Hint of Satellite Accretion? *Chris B. Brook, Daisuke Kawata, Brad K. Gibson, & Chris Flynn.* 585, L125 (2003)

FOCKE, W. See TOURNEAR, D., et al. X-Ray Bursts in Neutron Star and Black Hole Binaries from Unconvetional Stellar Aspect Experiment and *Rossi X-Ray Timing Explorer* Data: Detections and Upper Limits.

FOCKE, W. B. See SAZ PARKINSON, P. M., et al. Long-Term X-Ray Variability of Circinus X-1.

FÖRSTER SCHREIBER, N. M. The Nature of Starburst Activity in M82. *N. M. Förster Schreiber, R. Genzel, D. Lutz, & A. Sternberg.* 599, 193 (2003)

FÖRSTER SCHREIBER, NATASCHA M. See FRANX, MARIJN, et al. A Significant Population of Red, Near-Infrared–selected High-Redshift Galaxies.

See VAN DOKKUM, PIETER G., et al. Spectroscopic Confirmation of a Substantial Population of Luminous Red Galaxies at Redshifts $z \gtrsim 2$.

See LABBÉ, IVO, et al. Large Disklike Galaxies at High Redshift.

See RUDNICK, GREGORY, et al. The Rest-Frame Optical Luminosity Density, Color, and Stellar Mass Density of the Universe from $z = 0$ to $z = 3$.

FOGEL, J. K. J. Untwisting the Tornado: X-Ray Imaging and Spectroscopy of G357.7−0.1. *B. M. Gaensler, J. K. J. Fogel, P. O. Slane, J. M. Miller, R. Wijnands, S. S. Eikenberry, & W. H. G. Lewin.* 594, L35 (2003)

FOLATELLI, G. See KNOP, R. A., et al. New Constraints on Ω_M, Ω_Λ, and w from an Independent Set of 11 High-Redshift Supernovae Observed with the *Hubble Space Telescope*.

FOLEY, R. J. See MATHESON, T., et al. Photometry and Spectroscopy of GRB 030329 and Its Associated Supernova 2003dh: The First Two Months.

FOLTZ, C. See MATHESON, T., et al. The Spectroscopic Variability of GRB 021004.

FOLTZ, CRAIG B. Optical Spectropolarimetry of Quasi-stellar Objects Discovered by the Two-Micron All Sky Survey. *Paul S. Smith, Gary D. Schmidt, Dean C. Hines, & Craig B. Foltz.* 593, 676 (2003)

Serendipity and the Sloan Digital Sky Survey: Discovery of the Largest Known Planetary Nebula on the Sky. *Paul C. Hewett, Michael J. Irwin, Evan D. Skillman, Craig B. Foltz, Jon P. Willis, Stephen J. Warren, & Nicholas A. Walton.* 599, L37 (2003)

FOMALONT, E. B. See CHAPMAN, S. C., et al. The Properties of Microjansky Radio Sources in the Hubble Deep Field–North, SSA 13, and SSA 22 Fields.

The X-Ray Spectral Changes of Scorpius X-1. *C. F. Bradshaw, B. J. Geldzahler, & E. B. Fomalont.* 592, 486 (2003)

The Measurement of the Light Deflection from Jupiter: Experimental Results. *E. B. Fomalont & S. M. Kopeikin.* 598, 704 (2003)

FONG, B. The Mass of a Solar Quiescent Prominence. *B. C. Low, B. Fong, & Y. Fan.* 594, 1060 (2003)

FONG, D. Discovery of Multiple Molecular Shells in the Outer Envelope of IRC +10216. *D. Fong, M. Meixner, & R. Y. Shah.* 582, L39 (2003)

FONSECA, R. A. Interpenetrating Plasma Shells: Near-Equipartition Magnetic Field Generation and Nonthermal Particle Acceleration. *L. O. Silva, R. A. Fonseca, J. W. Tonge, J. M. Dawson, W. B. Mori, & M. V. Medvedev.* 596, L121 (2003)

FONTAINE, G. See GREEN, E. M., et al. Discovery of a New Class of Pulsating Stars: Gravity-Mode Pulsators among Subdwarf B Stars.

A Confirmation of the Optical Spectroscopy Approach: Discovery of Two More Pulsating DA (ZZ Ceti) White Dwarfs. *G. Fontaine, P. Bergeron, M. Billères, & S. Charpinet.* 591, 1184 (2003)

See MUKADEM, ANJUM S., et al. Constraining the Evolution of ZZ Ceti.

A Driving Mechanism for the Newly Discovered Long-Period Pulsating Subdwarf B Stars. *G. Fontaine, P. Brassard, S. Charpinet, E. M. Green, P. Chayer, M. Billères, & S. K. Randall.* 597, 518 (2003)

FONTANA, A. A European Southern Observatory Very Large Telescope Survey of Near-Infrared ($Z \leq 25$) Selected Galaxies at Redshifts $4.5 < z < 6$: Constraining the Cosmic Star Formation Rate near the Reionization Epoch. *A. Fontana, F. Poli, N. Menci, M. Nonino, E. Giallongo, S. Cristiani, & S. D'Odorico.* 587, 544 (2003)

Quasar Evolution Driven by Galaxy Encounters in Hierarchical Structures. *N. Menci, A. Cavaliere, A. Fontana, E. Giallongo, F. Poli, & V. Vittorini.* 587, L63 (2003)

See POLI, F., et al. The Evolution of the Galaxy Luminosity Function in the Rest-Frame Blue Band up to $z = 3.5$.

The Assembly of Massive Galaxies from Near-Infrared Observations of the Hubble Deep Field–South. *A. Fontana, I. Donnarumma, E. Vanzella, E. Giallongo, N. Menci, M. Nonino, P. Saracco, S. Cristiani, S. D'Odorico, & F. Poli.* 594, L9 (2003)

FORBES, DUNCAN A. Evidence for an Intermediate-Age, Metal-rich Population of Globular Clusters in NGC 4365. *Søren S. Larsen, Jean P. Brodie, Michael A. Beasley, Duncan A. Forbes, Markus Kissler-Patig, Harald Kuntschner, & Thomas H. Puzia.* 585, 767 (2003)

The Metallicity of Pregalactic Globular Clusters: The Observational Consequences of the First Stars. *Michael A. Beasley, Daisuke Kawata, Frazer R. Pearce, Duncan A. Forbes, & Brad K. Gibson.* 596, L187 (2003)

FORBES, TERRY G. Models of Three-dimensional Flux Ropes. *Joachim Birn, Terry G. Forbes, & Karl Schindler.* 588, 578 (2003)

A Three-dimensional Flux Rope Model for Coronal Mass Ejections Based on a Loss of Equilibrium. *Ilia I. Roussev, Terry G. Forbes, Tamas I. Gombosi, Igor V. Sokolov, Darren L. DeZeeuw, & Joachim Birn.* 588, L45 (2003)

FORD, ERIC B. Early-Type Stars: Most Favorable Targets for Astrometrically Detectable Planets in the Habitable Zone. *Andrew Gould, Eric B. Ford, & Debra A. Fischer.* 591, L155 (2003)

FORD, H. See MARCONI, A., et al. Is There Really a Black Hole at the Center of NGC 4041? Constraints from Gas Kinematics.

FORD, H. C. See TRAN, H. D., et al. Advanced Camera for Surveys Observations of Young Star Clusters in the Interacting Galaxy UGC 10214.

See BOUWENS, R. J., et al. Star Formation at $z \sim 6$: i-Dropouts in the Advanced Camera for Surveys Guaranteed Time Observation Fields.

See BLAKESLEE, JOHN P., et al. Advanced Camera for Surveys Photometry of the Cluster RDCS 1252.9−2927: The Color-Magnitude Relation at $z = 1.24$.

See MEURER, GERHARDT R., et al. The Discovery of Globular Clusters in the Protospiral Galaxy NGC 2915: Implications for Hierarchical Galaxy Evolution.

FORD, HOLLAND C. See BLAKESLEE, JOHN P., et al. Discovery of Two Distant Type Ia Supernovae in the Hubble Deep Field–North with the Advanced Camera for Surveys.

FORD, PETER G. The X-Ray Afterglows of GRB 020813 and GRB 021004 with *Chandra* HETGS: Possible Evidence for a Supernova prior to GRB 020813. *Nathanial R. Butler, Herman L. Marshall, George R. Ricker, Roland K. Vanderspek, Peter G. Ford, Geoffrey B. Crew, Donald Q. Lamb, & J. Garrett Jernigan.* 597, 1010 (2003)

FORMAN, W. *XMM-Newton* Observations of the Perseus Cluster. I. The Temperature and Surface Brightness Structure. *E. Churazov, W. Forman, C. Jones, & H. Boehringer.* 590, 225 (2003)

See MULLIS, C. R., et al. The 160 Square Degree *ROSAT* Survey: The Revised Catalog of 201 Clusters with Spectroscopic Redshifts.

Chandra Observations of the NGC 1550 Galaxy Group: Implication for the Temperature and Entropy Profiles of 1 keV Galaxy Groups. *M. Sun, W. Forman, A. Vikhlinin, A. Hornstrup, C. Jones, & S. S. Murray.* 598, 250 (2003)

FORMAN, W. R. See MARKEVITCH, M., et al. *Chandra* Temperature Map of A754 and Constraints on Thermal Conduction.

See VIKHLININ, A., et al. Cosmological Constraints from the Evolution of the Cluster Baryon Mass Function at $z \sim 0.5$.

X-Ray Emission from the Hot Interstellar Medium and Southwest Radio Lobe of the Nearby Radio Galaxy Centaurus A. *R. P. Kraft, S. E. Vázquez, W. R. Forman, C. Jones, S. S. Murray, M. J. Hardcastle, D. M. Worrall, & E. Churazov.* 592, 129 (2003)

Radio and X-Ray Observations of the Jet in Centaurus A. *M. J. Hardcastle, D. M. Worrall, R. P. Kraft, W. R. Forman, C. Jones, & S. S. Murray.* 593, 169 (2003)

FORREST, WILLIAM J. Near-Infrared, Adaptive Optics Observations of the T Tauri Multiple-Star System. *Elise Furlan, William J. Forrest, Dan M. Watson, Keven I. Uchida, Bernhard R. Brandl, Luke D. Keller, & Terry L. Herter.* 596, L87 (2003)

The Compact H II Region S88B: Excitation and Extinction. *Jennifer A. Goetz, Robert Gutermuth, Judith L. Pipher, William J. Forrest, & Eric M. Howard.* 599, 1173 (2003)

Near-Infrared, Adaptive Optics Observations of the T Tauri Multiple-Star System: Erratum (ApJ, 596, L87 [2003]). *Elise Furlan, William J. Forrest, Dan M. Watson, Keven I. Uchida, Bernhard R. Brandl, Luke D. Keller, & Terry L. Herter.* 599, L117 (2003) (Orig. paper in 596, L87 (2003))

FORSTER, JAMES R. NGC 7538S—a High-Mass Protostar with a Massive Rotating Disk. *Göran Sandell, Melvyn Wright, & James R. Forster.* 590, L45 (2003)

FORTNEY, J. J. On the Indirect Detection of Sodium in the Atmosphere of the Planetary Companion to HD 209458. *J. J. Fortney, D. Sudarsky, I. Hubeny, C. S. Cooper, W. B. Hubbard, A. Burrows, & J. I. Lunine.* 589, 615 (2003)

FORTNEY, JONATHAN J. Measuring the Oblateness and Rotation of Transiting Extrasolar Giant Planets. *Jason W. Barnes & Jonathan J. Fortney.* 588, 545 (2003)

FORTSON, L. See HOLDER, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.

See DE LA CALLE PÉREZ, I., et al. Search for High-Energy Gamma Rays from an X-Ray–Selected Blazar Sample.

FORVEILLE, T. Multiple Molecular H_2 Outflows in AFGL 618. *P. Cox, P. J. Huggins, J.-P. Maillard, C. Muthu, R. Bachiller, & T. Forveille.* 586, L87 (2003)

FOSALBA, PABLO. Detection of the Integrated Sachs-Wolfe and Sunyaev-Zel'dovich Effects from the Cosmic Microwave Background–Galaxy Correlation. *Pablo Fosalba, Enrique Gaztañaga, & Francisco J. Castander.* 597, L89 (2003)

FOSBURY, R. A. E. Massive Star Formation in a Gravitationally Lensed H II Galaxy at $z = 3.357$. *R. A. E. Fosbury, M. Villar-Martín, A. Humphrey, M. Lombardi, P. Rosati, D. Stern, R. N. Hook, B. P. Holden, S. A. Stanford, G. K. Squires, M. Rauch, & W. L. W. Sargent.* 596, 797 (2003)

FOSCHINI, L. Radiative Acceleration and Transient, Radiation-induced Electric Fields. *L. Zampieri, R. Turolla, L. Foschini, & A. Treves.* 592, 368 (2003)

FOSTER, T. A New Distance Technique for Galactic Plane Objects. *T. Foster & D. Routledge.* 598, 1005 (2003)

FOSTER, TYLER. The Distance to the Supernova Remnant CTB 87 and the Radial Velocity of the Perseus Arm toward $l = 75°$. Derived from H I and CO Observations. *Roland Kothes, Wolfgang Reich, Tyler Foster, & Do-Young Byun.* 588, 852 (2003)

FOUCAUD, S. See WEBB, T. M., et al. The Canada–United Kingdom Deep Submillimeter Survey. V. The Submillimeter Properties of Lyman Break Galaxies.

FOURNIER, KEVIN B. The Fe XXII $I(11.92\ \text{Å})/I(11.77\ \text{Å})$ Density Diagnostic Applied to the *Chandra* High-Energy Transmission Grating Spectrum of EX Hydrae. *Christopher W. Mauche, Duane A. Liedahl, & Kevin B. Fournier.* 588, L101 (2003)

FOURRE, R. A Polarization Survey of SiO Maser Variability in Evolved Stars. *J. Glenn, P. R. Jewell, R. Fourre, & L. Miaja.* 588, 478 (2003)

FOX, ANDREW J. Origins of the Highly Ionized Gas along the Line of Sight toward HD 116852. *Andrew J. Fox, Blair D. Savage, Kenneth R. Sembach, Dirk Fabian, Philipp Richter, David M. Meyer, James Lauroesch, & J. Christopher Howk.* 582, 793 (2003)

FOX, D. See GALAMA, T. J., et al. *Hubble Space Telescope* and Ground-based Optical and Ultraviolet Observations of GRB 010222.

The First Two Host Galaxies of X-Ray Flashes: XRF 011030 and XRF 020427. *J. S. Bloom, D. Fox, P. G. van Dokkum, S. R. Kulkarni, E. Berger, S. G. Djorgovski, & D. A. Frail.* 599, 957 (2003)

FOX, D. W. See PRICE, P. A., et al. GRB 010921: Strong Limits on an Underlying Supernova from the *Hubble Space Telescope*.

Three New Long-Period X-Ray Pulsars Discovered in the Small Magellanic Cloud. *D. J. Macomb, D. W. Fox, R. C. Lamb, & T. A. Prince.* 584, L79 (2003)

Discovery of Early Optical Emission from GRB 021211. *D. W. Fox, P. A. Price, A. M. Soderberg, E. Berger, S. R. Kulkarni, R. Sari, D. A. Frail, F. A. Harrison, S. A. Yost, K. Matthews, B. A. Peterson, I. Tanaka, J. Christiansen, & G. H. Moriarty-Schieven.* 586, L5 (2003)

See PRICE, P. A., et al. Discovery of GRB 020405 and Its Late Red Bump.

See FRAIL, D. A., et al. The Broadband Afterglow of GRB 980703.

Discovery of a Possible Anomalous X-Ray Pulsar in the Small Magellanic Cloud: Addenudum (ApJ, 574, L29 [2002]). *R. C. Lamb, D. W. Fox, D. J. Macomb, & T. A. Prince.* 599, L115 (2003) (Orig. paper in 574, L29 (2002))

FOX, DEREK W. See BARTH, AARON J., et al. Optical Spectropolarimetry of the GRB 020813 Afterglow.

A Limit on the Number of Isolated Neutron Stars Detected in the *ROSAT* Bright Source Catalogue. *Robert E. Rutledge, Derek W. Fox, Milan Bogosavljevic, & Ashish Mahabal.* 598, 458 (2003)

FRAGA, L. See MUKADEM, ANJUM S., et al. Constraining the Evolution of ZZ Ceti.

FRAGILE, P. CHRIS. Non-Oscillatory Central Difference and Artificial Viscosity Schemes for Relativistic Hydrodynamics. *Peter Anninos & P. Chris Fragile.* 144, 243 (2003)

Supernova Enrichment of Dwarf Spheroidal Galaxies. *P. Chris Fragile, Stephen D. Murray, Peter Anninos, & Douglas N. C. Lin.* 590, 778 (2003)

Cosmos: A Radiation-Chemo-Hydrodynamics Code for Astrophysical Problems. *Peter Anninos, P. Chris Fragile, & Stephen D. Murray.* 147, 177 (2003)

FRAIL, D. A. See PRICE, P. A., et al. GRB 010921: Strong Limits on an Underlying Supernova from the *Hubble Space Telescope*.

Continued Radio Monitoring of the Gamma-Ray Burst 991208. *T. J. Galama, D. A. Frail, R. Sari, E. Berger, G. B. Taylor, & S. R. Kulkarni.* 585, 899 (2003)

The Quiescent Counterpart of the Soft Gamma-Ray Repeater SGR 0526−66. *S. R. Kulkarni, D. L. Kaplan, H. L. Marshall, D. A. Frail, T. Murakami, & D. Yonetoku.* 585, 948 (2003)

See FOX, D. W., et al. Discovery of Early Optical Emission from GRB 021211.

See GALAMA, T. J., et al. *Hubble Space Telescope* and Ground-based Optical and Ultraviolet Observations of GRB 010222.

A Radio Flare from GRB 020405: Evidence for a Uniform Medium around a Massive Stellar Progenitor. *E. Berger, A. M. Soderberg, D. A. Frail, & S. R. Kulkarni.* 587, L5 (2003)

A Submillimeter and Radio Survey of Gamma-Ray Burst Host Galaxies: A Glimpse into the Future of Star Formation Studies. *E. Berger, L. L. Cowie, S. R. Kulkarni, D. A. Frail, H. Aussel, & A. J. Barger.* 588, 99 (2003)

See PRICE, P. A., et al. Discovery of GRB 020405 and Its Late Red Bump.

Variability of Submillijansky Radio Sources. *C. L. Carilli, R. J. Ivison, & D. A. Frail.* 590, 192 (2003)

A Standard Kinetic Energy Reservoir in Gamma-Ray Burst Afterglows. *E. Berger, S. R. Kulkarni, & D. A. Frail.* 590, 379 (2003)

The Broadband Afterglow of GRB 980703. *D. A. Frail, S. A. Yost, E. Berger, F. A. Harrison, R. Sari, S. R. Kulkarni, G. B. Taylor, J. S. Bloom, D. W. Fox, G. H. Moriarty-Schieven, & P. A. Price.* 590, 992 (2003)

The Nearby Neutron Star RX J0720.4−3125 from Radio to X-Rays. *D. L. Kaplan, M. H. van Kerkwijk, H. L. Marshall, B. A. Jacoby, S. R. Kulkarni, & D. A. Frail.* 590, 1008 (2003)

Gamma-Ray Burst Energetics and the Gamma-Ray Burst Hubble Diagram: Promises and Limitations. *J. S. Bloom, D. A. Frail, & S. R. Kulkarni.* 594, 674 (2003)

A Study of the Afterglows of Four Gamma-Ray Bursts: Constraining the Explosion and Fireball Model. *S. A. Yost, F. A. Harrison, R. Sari, & D. A. Frail.* 597, 459 (2003)

A Radio Survey of Type Ib and Ic Supernovae: Searching for Engine-driven Supernovae. *E. Berger, S. R. Kulkarni, D. A. Frail, & A. M. Soderberg.* 599, 408 (2003)

The First Two Host Galaxies of X-Ray Flashes: XRF 011030 and XRF 020427. *J. S. Bloom, D. Fox, P. G. van Dokkum, S. R. Kulkarni, E. Berger, S. G. Djorgovski, & D. A. Frail.* 599, 957 (2003)

FRAIL, DALE. Jets in Gamma-Ray Bursts: Tests and Predictions for the Structured Jet Model. *Rosalba Perna, Re'em Sari, & Dale Frail.* 594, 379 (2003)

FRAIL, DALE A. Millimeter Observations of GRB 030329: Continued Evidence for a Two-Component Jet. *Kartik Sheth, Dale A. Frail, Stephen White, Mousumi Das, Frank Bertoldi, Fabian Walter, Shri R. Kulkarni, & Edo Berger.* 595, L33 (2003)

FRANCESCHINI, A. Models for Evolution of Dusty and E/S0 Galaxies Seen in Multiband Surveys. *C. K. Xu, C. J. Lonsdale, D. L. Shupe, A. Franceschini, C. Martin, & D. Schiminovich.* 587, 90 (2003)

See RISALITI, G., et al. Revealing the Active Galactic Nucleus in the Superantennae through *L*-Band Spectroscopy.

FRANCO, JOSÉ. The High-Excitation Planetary Nebula NGC 246: Optical and Near-Ultraviolet Observations and Two-Dimensional Numerical Models. *Andrew Szentgyorgyi, John Raymond, José Franco, Eva Villaver, & Luis López-Martín.* 594, 874 (2003)

FRANK, A. Stellar Outflows Driven by Magnetized Wide-Angle Winds. *T. A. Gardiner, A. Frank, & L. Hartmann.* 582, 269 (2003)

FRANK, ADAM. Fuel-Supply–limited Stellar Relaxation Oscillations: Application to Multiple Rings around Asymptotic Giant Branch Stars and Planetary Nebulae. *Hugh M. Van Horn, John H. Thomas, Adam Frank, & Eric G. Blackman.* 585, 983 (2003)

A Compact X-Ray Source and Possible X-Ray Jets within the Planetary Nebula Menzel 3. *Joel H. Kastner, Bruce Balick, Eric G. Blackman, Adam Frank, Noam Soker, Saeqa D. Vrtilek, & Jingqiang Li.* 591, L37 (2003)

X-Ray Emission from the Pre–Planetary Nebula Henize 3-1475. *Raghvendra Sahai, Joel H. Kastner, Adam Frank, Mark Morris, & Eric G. Blackman.* 599, L87 (2003)

FRANK, JUHAN. Detectability of Gravitational Waves from SN 1987A. *Giovanni Santostasi, Warren Johnson, & Juhan Frank.* 586, 1191 (2003)

Galaxy Formation in Triaxial Halos: Black Hole–Bulge–Dark Halo Correlation. *Amr A. El-Zant, Isaac Shlosman, Mitchell C. Begelman, & Juhan Frank.* 590, 641 (2003)

FRANSSON, CLAES. See WANG, LIFAN, et al. Spectropolarimetry of SN 2001el in NGC 1448: Asphericity of a Normal Type Ia Supernova.

See MICHAEL, ELI, et al. *Hubble Space Telescope* Observations of High-Velocity Lyα and Hα Emission from Supernova Remnant 1987A: The Structure and Development of the Reverse Shock.

FRANX, M. See TRAN, H. D., et al. Advanced Camera for Surveys Observations of Young Star Clusters in the Interacting Galaxy UGC 10214.

See DADDI, E., et al. Detection of Strong Clustering of Red *K*-selected Galaxies at $2 < z_{\rm phot} < 4$ in the Hubble Deep Field–South.

See Bouwens, R. J., et al. Star Formation at $z \sim 6$: i-Dropouts in the Advanced Camera for Surveys Guaranteed Time Observation Fields.

Franx, Marijn. A Significant Population of Red, Near-Infrared–selected High-Redshift Galaxies. *Marijn Franx, Ivo Labbé, Gregory Rudnick, Pieter G. van Dokkum, Emanuele Daddi, Natascha M. Förster Schreiber, Alan Moorwood, Hans-Walter Rix, Huub Röttgering, Arjen van de Wel, Paul van der Werf, & Lottie van Starkenburg.* 587, L79 (2003)

See van Dokkum, Pieter G., et al. Spectroscopic Confirmation of a Substantial Population of Luminous Red Galaxies at Redshifts $z \gtrsim 2$.

See Blakeslee, John P., et al. Discovery of Two Distant Type Ia Supernovae in the Hubble Deep Field–North with the Advanced Camera for Surveys.

Cl 1358+62: Characterizing the Physical Properties of Cluster Galaxies at $z = 0.33$. *Kim-Vy H. Tran, Luc Simard, Garth Illingworth, & Marijn Franx.* 590, 238 (2003)

See Labbé, Ivo, et al. Large Disklike Galaxies at High Redshift.

See Blakeslee, John P., et al. Advanced Camera for Surveys Photometry of the Cluster RDCS 1252.9−2927: The Color-Magnitude Relation at $z = 1.24$.

See Rudnick, Gregory, et al. The Rest-Frame Optical Luminosity Density, Color, and Stellar Mass Density of the Universe from $z = 0$ to $z = 3$.

The Nature of E+A Galaxies in Intermediate Redshift Clusters. *Kim-Vy H. Tran, Marijn Franx, Garth Illingworth, Daniel D. Kelson, & Pieter van Dokkum.* 599, 865 (2003)

Frasca, A. See Bottcher, M., et al. Coordinated Multiwavelength Observations of BL Lacertae in 2000.

Fraser, H. J. Carbon Monoxide Entrapment in Interstellar Ice Analogs. *M. P. Collings, J. W. Dever, H. J. Fraser, M. R. S. McCoustra, & D. A. Williams.* 583, 1058 (2003)

Fraser, O. See Teegarden, B. J., et al. Discovery of a New Nearby Star.

Frayer, D. T. The Host Galaxies of Optically Bright Quasi-stellar Objects: Molecular Gas in $z \leq 0.1$ Palomar-Green Quasi-stellar Objects. *N. Z. Scoville, D. T. Frayer, E. Schinnerer, & M. Christopher.* 585, L105 (2003)

See Neri, R., et al. Interferometric Observations of Powerful CO Emission from Three Submillimeter Galaxies at $z = 2.39$, 2.51, and 3.35.

Frayer, David T. Resolving Molecular Gas in the Central Galaxies of Cooling Flow Clusters. *Alastair C. Edge & David T. Frayer.* 594, L13 (2003)

Frazin, R. A. Empirically Determined Anisotropic Velocity Distributions and Outflows of O^{5+} Ions in a Coronal Streamer at Solar Minimum. *R. A. Frazin, S. R. Cranmer, & J. L. Kohl.* 597, 1145 (2003)

Frederiks, D. Observations of Giant Outbursts from Cygnus X-1. *S. Golenetskii, R. Aptekar, D. Frederiks, E. Mazets, V. Palshin, K. Hurley, T. Cline, & B. Stern.* 596, 1113 (2003)

Frederiks, D. D. See Feroci, M., et al. The 2001 April Burst Activation of SGR 1900+14: X-Ray Afterglow Emission.

Frederiks, Dmitry. See Lenters, Geoffrey T., et al. An Extended Burst Tail from SGR 1900+14 with a Thermal X-Ray Spectrum.

Freed, Melanie. Discovery of a Tight Brown Dwarf Companion to the Low-Mass Star LHS 2397a. *Melanie Freed, Laird M. Close, & Nick Siegler.* 584, 453 (2003)

Detection of Nine M8.0-L0.5 Binaries: The Very Low-Mass Binary Population and Its Implications for Brown Dwarf and Very Low Mass Star Formation. *Laird M. Close, Nick Siegler, Melanie Freed, & Beth Biller.* 587, 407 (2003)

An Adaptive Optics Survey of M6.0–M7.5 Stars: Discovery of Three Very Low Mass Binary Systems Including Two Probably Hyades Members. *Nick Siegler, Laird M. Close, Eric E. Mamajek, & Melanie Freed.* 598, 1265 (2003)

Freedman, D. L. See Matheson, T., et al. Photometry and Spectroscopy of GRB 03029 and Its Associated Supernova 2003dh: The First Two Months.

Freeman, K. See Alcock, C., et al. The MACHO Project Large Magellanic Cloud Variable Star Inventory. XI. Frequency Analysis of the Fundamental Mode RR Lyrae Stars.

Freeman, K. C. Hα Emission from High-Velocity Clouds and Their Distances. *M. E. Putman, J. Bland-Hawthorn, S. Veilleux, B. K. Gibson, K. C. Freeman, & P. R. Maloney.* 597, 948 (2003)

Freeman, Kenneth C. The Magellanic Stream, High-Velocity Clouds, and the Sculptor Group. *Mary E. Putman, Lister Staveley-Smith, Kenneth C. Freeman, Brad K. Gibson, & David G. Barnes.* 586, 170 (2003)

See Napolitano, Nicola R., et al. Intracluster Stellar Population Properties from N-Body Cosmological Simulations. I. Constraints at $z = 0$.

See Pritzl, Barton J., et al. Anomalous Evolution of the Dwarf Galaxy HIPASS J1321−31.

Freese, Katherine. Future Type Ia Supernova Data as Tests of Dark Energy from Modified Friedmann Equations. *Yun Wang, Katherine Freese, Paolo Gondolo, & Matthew Lewis.* 594, 25 (2003)

Fregeau, J. M. Monte Carlo Simulations of Globular Cluster Evolution. III. Primordial Binary Interactions. *J. M. Fregeau, M. A. Gürkan, K. J. Joshi, & F. A. Rasio.* 593, 772 (2003)

Freire, P. C. The Arecibo 430 MHz Intermediate Galactic Latitude Survey: Discovery of Nine Radio Pulsars. *J. Navarro, S. B. Anderson, & P. C. Freire.* 594, 943 (2003)

Freitag, Marc. Gravitational Waves from Stars Orbiting the Sagittarius A* Black Hole. *Marc Freitag.* 583, L21 (2003)

Frenk, C. S. What Shapes the Luminosity Function of Galaxies? *A. J. Benson, R. G. Bower, C. S. Frenk, C. G. Lacey, C. M. Baugh, & S. Cole.* 599, 38 (2003)

Frenk, Carlos S. See Berlind, Andreas A., et al. The Halo Occupation Distribution and the Physics of Galaxy Formation.

Freudling, Wolfram. Iron Emission in $z \approx 6$ QSOs. *Wolfram Freudling, Michael R. Corbin, & Kirk T. Korista.* 587, L67 (2003)

Hot Dust in Radio-loud Active Galactic Nuclei. *Wolfram Freudling, Ralf Siebenmorgen, & Martin Haas.* 599, L13 (2003)

Frey, Natalie. Angular Distribution of Gamma-Ray Bursts and Weak Lensing. *Liliya R. Williams & Natalie Frey.* 583, 594 (2003)

Freyer, Tim. Massive Stars and the Energy Balance of the Interstellar Medium. I. The Impact of an Isolated 60 $M_\odot$ Star. *Tim Freyer, Gerhard Hensler, & Harold W. Yorke.* 594, 888 (2003)

Friedel, D. N. A Survey of Acetic Acid toward Hot Molecular Cores. *A. Remijan, L. E. Snyder, D. N. Friedel, S.-Y. Liu, & R. Y. Shah.* 590, 314 (2003)

Friedman, S. D. See Thorburn, J. A., et al. Some Diffuse Interstellar Bands Related to Interstellar C_2 Molecules.

See Wakker, B. P., et al. The *Far Ultraviolet Spectroscopic Explorer* Survey of O VI Absorption in and near the Galaxy.

Friedman, Scott D. Observations of C_3 In Translucent Sight Lines. *Takeshi Oka, Julie A. Thorburn, Benjamin J. McCall, Scott D. Friedman, Lewis M. Hobbs, Paule Sonnentrucker, Daniel E. Welty, & Donald G. York.* 582, 823 (2003)

Abundances and Physical Conditions in the Interstellar Gas toward HD 185418. *Paule Sonnentrucker, Scott D. Friedman, Daniel E. Welty, Donald G. York, & Theodore P. Snow.* 596, 350 (2003)

Frieman, Joshua A. Corrective Lenses for High-Redshift Supernovae. *Neal Dalal, Daniel E. Holz, Xuelei Chen, & Joshua A. Frieman.* 585, L11 (2003)

See Szalay, Alexander S., et al. Karhunen-Loève Estimation of the Power Spectrum Parameters from the Angular Distribution of Galaxies in Early Sloan Digital Sky Survey Data.

See Budavári, Tamás, et al. Angular Clustering with Photometric Redshifts in the Sloan Digital Sky Survey: Bimodality in the Clustering Properties of Galaxies.

Frinchaboy, Peter M. Exploring Halo Substructure with Giant Stars: Spectroscopy of Stars in the Galactic Anticenter Stellar Structure. *Jeffrey D. Crane, Steven R. Majewski, Helio J. Rocha-Pinto, Peter M. Frinchaboy, Michael F. Skrutskie, & David R. Law.* 594, L119 (2003)

Frisch, Priscilla C. Local Interstellar Matter: The Apex Cloud. *Priscilla C. Frisch.* 593, 868 (2003)

The Chemical Composition and Gas-to-Dust Mass Ratio of Nearby Interstellar Matter. *Priscilla C. Frisch & Jonathan D. Slavin.* 594, 844 (2003)

Frith, James. See Szkody, Paula, et al. Two Rare Magnetic Cataclysmic Variables with Extreme Cyclotron Features Identified in the Sloan Digital Sky Survey.

Froebrich, Dirk. Multiwavelength Spectroscopy of the Bipolar Outflow from Cepheus E. *Michael D. Smith, Dirk Froebrich, & Jochen Eislöffel.* 592, 245 (2003)

Molecular Outflows in The Young Open Cluster IC 348. *Jochen Eislöffel, Dirk Froebrich, Thomas Stanke, & Mark J. McCaughrean.* 595, 259 (2003)

Frogel, Jay A. See Eskridge, Paul B., et al. Ultraviolet-Optical Pixel Maps of Face-on Spiral Galaxies: Clues for Dynamics and Star Formation Histories.

Fromerth, Michael J. Shadowing of the Nascent Jet in NGC 4261 by a Line-Emitting Supersonic Accretion Disk. *Siming Liu, Michael J. Fromerth, & Fulvio Melia.* 596, 879 (2003)

FRONING, CYNTHIA S. Accretion and Outflow in Interacting Binary Systems: *Far Ultraviolet Spectroscopic Explorer* Observations of the Nova-like Cataclysmic Variable UX Ursae Majoris. *Cynthia S. Froning, Knox S. Long, & Christian Knigge.* 584, 433 (2003)

WZ Sagittae: *FUSE* Spectroscopy of the 2001 Outburst. *Knox S. Long, Cynthia S. Froning, Boris Gänsicke, Christian Knigge, Edward M. Sion, & Paula Szkody.* 591, 1172 (2003)

FRONTERA, F. See PRICE, P. A., et al. GRB 010921: Strong Limits on an Underlying Supernova from the *Hubble Space Telescope*.

Gamma-Ray Bursts from Delayed Collapse of Neutron Stars to Quark Matter Stars. *Z. Berezhiani, I. Bombaci, A. Drago, F. Frontera, & A. Lavagno.* 586, 1250 (2003)

See PRICE, P. A., et al. Discovery of GRB 020405 and Its Late Red Bump.

See DE PASQUALE, M., et al. A Comparative Study of the X-Ray Afterglow Properties of Optically Bright and Dark Gamma-Ray Bursts.

Spectral and Temporal Behavior of the Black Hole Candidate XTE J1118+480 as Observed with *BeppoSAX*. *F. Frontera, L. Amati, A. A. Zdziarski, T. Belloni, S. Del Sordo, N. Masetti, M. Orlandini, & E. Palazzi.* 592, 1110 (2003)

See WOODS, P. M., et al. The 2001 April Burst Activation of SGR 1900+14: Pulse Properties and Torque.

FRUCHTER, A. See GREINER, J., et al. GRB 011121: A Collimated Outflow into Wind-blown Surroundings.

FRUCHTER, A. S. See HJORTH, J., et al. Very High Column Density and Small Reddening toward GRB 020124 at $z = 3.20$.

See KNOP, R. A., et al. New Constraints on Ω_M, Ω_Λ, and w from an Independent Set of 11 High-Redshift Supernovae Observed with the *Hubble Space Telescope*.

FRUSCIONE, ANTONELLA. Catching NGC 4051 in the Low State with *Chandra*. *Philip Uttley, Antonella Fruscione, Ian M. Hardy, & Georg Lamer.* 595, 656 (2003)

FRY, J. See FELDMAN, H., et al. An Estimate of Ω_m without Conventional Priors.

FRYE, C. *Chandra* X-Ray Analysis of the Massive High-Redshift Galaxy Clusters Cl J1113.1−2615 and Cl J0152.7−1357. *B. J. Maughan, L. R. Jones, H. Ebeling, E. Perlman, P. Rosati, C. Frye, & C. R. Mullis.* 587, 589 (2003)

FRYER, C. L. How Massive Single Stars End Their Life. *A. Heger, C. L. Fryer, S. E. Woosley, N. Langer, & D. H. Hartmann.* 591, 288 (2003)

FRYER, CHRIS L. Neutrino-driven Explosions in Gamma-Ray Bursts and Hypernovae. *Chris L. Fryer & Peter Mészáros.* 588, L25 (2003)

Gamma-Ray Lines from Asymmetric Supernovae. *Aimee L. Hungerford, Chris L. Fryer, & Michael S. Warren.* 594, 390 (2003)

FRYXELL, B. See DURSI, L. J., et al. The Response of Model and Astrophysical Thermonuclear Flames to Curvature and Stretch.

FU, J. N. See MUKADEM, ANJUM S., et al. Constraining the Evolution of ZZ Ceti.

FUCHS, ULRIKE. Trans-Ethyl Methyl Ether: Assignments and Predictions up to 400 GHz for the Vibrational-Torsional Ground State. *Ulrike Fuchs, Gisbert Winnewisser, Peter Groner, Frank C. De Lucia, & Eric Herbst.* 144, 277 (2003)

FUENTE, A. Detection of Reactive Ions in the Ultracompact H II Regions Monoceros R2 and G29.96−0.02. *J. R. Rizzo, A. Fuente, A. Rodríguez-Franco, & S. García-Burillo.* 597, L153 (2003)

First Evidence of Dusty Disks around Herbig Be Stars. *A. Fuente, A. Rodríguez-Franco, L. Testi, A. Natta, R. Bachiller, & R. Neri.* 598, L39 (2003)

FUJII, MITSUGU. Heliocentric Dependence of the Sodium Emission of Comet 153P/Ikeya-Zhang. *Jun-ichi Watanabe, Hideyo Kawakita, Reiko Furusho, & Mitsugu Fujii.* 585, L159 (2003)

FUJIMOTO, MASA-KATSU. Constraints on Cardassian Expansion from Distant Type Ia Supernovae. *Zhong-Hong Zhu & Masa-Katsu Fujimoto.* 585, 52 (2003)

FUJIMOTO, MASAYUKI Y. See AOKI, WAKO, et al. Europium Isotope Ratios in *s*-Process Element-enhanced Metal-poor Stars: A New Probe of the ^{151}Sm Branching.

FUJIMOTO, SHIN-ICHIROU. *p*-Process Nucleosynthesis inside Supernova-driven Supercritical Accretion Disks. *Shin-ichirou Fujimoto, Masa-aki Hashimoto, Osamu Koike, Kenzo Arai, & Ryuichi Matsuba.* 585, 418 (2003)

FUJITA, AKIMA. The Influence of Supershells and Galactic Outflows on the Escape of Ionizing Radiation from Dwarf Starburst Galaxies. *Akima Fujita, Crystal L. Martin, Mordecai-Mark Mac Low, & Tom Abel.* 599, 50 (2003)

FUJITA, KENTA. See ITOH, YOICHI, et al. Interferometric Observations of the T Tauri Stars in the MBM 12 Cloud.

FUJITA, SHINOBU S. See TANIGUCHI, YOSHIAKI, et al. The Discovery of a Very Narrow Line Star-forming Object at a Redshift of 5.66.

The Hα Luminosity Function and Star Formation Rate at $z \approx 0.24$ Based on Subaru Deep Imaging Data. *Shinobu S. Fujita, Masaru Ajiki, Yasuhiro Shioya, Tohru Nagao, Takashi Murayama, Yoshiaki Taniguchi, Kazuyoshi Umeda, Sanae Yamada, Masafumi Yagi, Sadanori Okamura, & Yutaka Komiyama.* 586, L115 (2003)

FUJITA, YUTAKA. Nonthermal Emissions from Particles Accelerated by Turbulence in Clusters of Galaxies. *Yutaka Fujita, Motokazu Takizawa, & Craig L. Sarazin.* 584, 190 (2003)

Properties of the Brightest Cluster Galaxy and Its Host Cluster. *Haruyoshi Katayama, Kiyoshi Hayashida, Fumio Takahara, & Yutaka Fujita.* 585, 687 (2003)

FUJIWARA, HIDEO. See KAMEGAI, KAZUHISA, et al. Distribution of the C I Emission in the ρ Ophiuchi Dark Cloud.

FUKAGAWA, MISATO. See ITOH, YOICHI, et al. Interferometric Observations of the T Tauri Stars in the MBM 12 Cloud.

Near-Infrared Imaging of the Circumstellar Disk around Herbig Ae Star HD 150193A. *Misato Fukagawa, Motohide Tamura, Yoichi Itoh, Saeko S. Hayashi, & Yumiko Oasa.* 590, L49 (2003)

FUKUDA, NAOYA. See ITOH, YOICHI, et al. Interferometric Observations of the T Tauri Stars in the MBM 12 Cloud.

FUKUGITA, MASATAKA. See EISENSTEIN, DANIEL J., et al. Average Spectra of Massive Galaxies in the Sloan Digital Sky Survey.

See GLAZEBROOK, KARL, et al. The Sloan Digital Sky Survey: The Cosmic Spectrum and Star Formation History.

See SZALAY, ALEXANDER S., et al. Karhunen-Loève Estimation of the Power Spectrum Parameters from the Angular Distribution of Galaxies in Early Sloan Digital Sky Survey Data.

See BLANTON, MICHAEL R., et al. The Galaxy Luminosity Function and Luminosity Density at Redshift $z = 0.1$.

Discovery of Eight New Extremely Metal-poor Galaxies in the Sloan Digital Sky Survey. *Alexei Y. Kniazev, Eva K. Grebel, Lei Hao, Michael A. Strauss, Jonathan Brinkmann, & Masataka Fukugita.* 593, L73 (2003)

See BLANTON, MICHAEL R., et al. The Broadband Optical Properties of Galaxies with Redshifts $0.02 < z < 0.22$.

See BUDAVÁRI, TAMÁS, et al. Angular Clustering with Photometric Redshifts in the Sloan Digital Sky Survey: Bimodality in the Clustering Properties of Galaxies.

See BAHCALL, NETA A., et al. A Merged Catalog of Clusters of Galaxies from Early Sloan Digital Sky Survey Data.

The Probability Distribution Function of Light in the Universe: Results from Hydrodynamic Simulations. *Jeremiah P. Ostriker, Kentaro Nagamine, Renyue Cen, & Masataka Fukugita.* 597, 1 (2003)

FUKUI, Y. High-Latitude Molecular Clouds in an H I Filament toward the MBM 53, 54, and 55 Complex: Existence of an H_2 Cloud with Low CO Intensity. *H. Yamamoto, T. Onishi, A. Mizuno, & Y. Fukui.* 592, 217 (2003)

FUKUSHIGE, TOSHIYUKI. Structure of Dark Matter Halos from Hierarchical Clustering. II. Dependence of Cosmological Models in Cluster-sized Halos. *Toshiyuki Fukushige & Junichiro Makino.* 588, 674 (2003)

FULBRIGHT, JON P. Chemical Substructure in the Milky Way Halo: A New Population of Old Stars. *Inese I. Ivans, Christopher Sneden, C. Renée James, George W. Preston, Jon P. Fulbright, Peter A. Höflich, Bruce W. Carney, & J. Craig Wheeler.* 592, 906 (2003)

Oxygen Abundances in Metal-poor Stars. *Jon P. Fulbright & Jennifer A. Johnson.* 595, 1154 (2003)

FULLER, GEORGE M. See SNEDEN, CHRISTOPHER, et al. The Extremely Metal-poor, Neutron Capture–rich Star CS 22892−052: A Comprehensive Abundance Analysis.

Estimates of Stellar Weak Interaction Rates for Nuclei in the Mass Range $A = 65$–80. *Jason Pruet & George M. Fuller.* 149, 187 (2003)

FULLERTON, A. W. Constraints on the Ionization Balance of Hot-Star Winds from *FUSE* Observations of O Stars in the Large Magellanic Cloud. *D. Massa, A. W. Fullerton, G. Sonneborn, & J. B. Hutchings.* 586, 996 (2003)

Far Ultraviolet Spectroscopic Explorer Snapshot Survey of O VI Variability in the Winds of 66 OB-Type Stars. *N. Lehner, A. W. Fullerton, D. Massa, K. R. Sembach, & J. Zsargó.* 589, 526 (2003)

FUNATO, YOKO. To Circularize or Not to Circularize?—Orbital Evolution of Satellite Galaxies. *Yoshikazu Hashimoto, Yoko Funato, & Junichiro Makino.* 582, 196 (2003)

FURLAN, ELISE. Near-Infrared, Adaptive Optics Observations of the T Tauri Multiple-Star System. *Elise Furlan, William J. Forrest, Dan M. Watson, Keven I. Uchida, Bernhard R. Brandl, Luke D. Keller, & Terry L. Herter.* 596, L87 (2003)

Near-Infrared, Adaptive Optics Observations of the T Tauri Multiple-Star System: Erratum (ApJ, 596, L87 [2003]). *Elise Furlan, William J. Forrest, Dan M. Watson, Keven I. Uchida, Bernhard R. Brandl, Luke D. Keller, & Terry L. Herter.* 599, L117 (2003) (Orig. paper in 596, L87 (2003))

FURLANETTO, STEVEN R. Metal Absorption Lines as Probes of the Intergalactic Medium Prior to the Reionization Epoch. *Steven R. Furlanetto & Abraham Loeb.* 588, 18 (2003)

Mapping the Cosmic Web with Lyα Emission. *Steven R. Furlanetto, Joop Schaye, Volker Springel, & Lars Hernquist.* 599, L1 (2003)

FURUSAWA, H. See SHIMASAKU, K., et al. Subaru Deep Survey. IV. Discovery of a Large-Scale Structure at Redshift $\simeq$5.

FURUSAWA, HISANORI. See OUCHI, MASAMI, et al. Subaru Deep Survey. II. Luminosity Functions and Clustering Properties of Lyα Emitters at $z = 4.86$ in the Subaru Deep Field.

See KOMIYAMA, YUTAKA, et al. Discovery of Latent Star Formation in the Extended H I Gas around the Local Group Dwarf Irregular Galaxy NGC 6822.

See HAMANA, TAKASHI, et al. Cosmic Shear Statistics in the Suprime-Cam 2.1 Square Degree Field: Constraints on Ω_m and Σ_8.

FURUSHO, REIKO. Heliocentric Dependence of the Sodium Emission of Comet 153P/Ikeya-Zhang. *Jun-ichi Watanabe, Hideyo Kawakita, Reiko Furusho, & Mitsugu Fujii.* 585, L159 (2003)

FURUSHO, T. *Chandra* Observation of the Core of the Galaxy Cluster AWM 7. *T. Furusho, N. Y. Yamasaki, & T. Ohashi.* 596, 181 (2003)

FURUYA, RAY S. Water Maser Survey toward Low-Mass Young Stellar Objects in the Northern Sky with the Nobeyama 45 Meter Telescope and the Very Large Array. *Ray S. Furuya, Yoshimi Kitamura, Alwyn Wooten, Mark J. Claussen, & Ryohei Kawabe.* 144, 71 (2003)

FURUZAWA, A. Spatial Distributions of A3558 in the Core Region of the Shapley Supercluster. *F. Akimoto, K. Kondou, A. Furuzawa, Y. Tawara, & K. Yamashita.* 596, 170 (2003)

FUSCO-FEMIANO, ROBERTO. Detection of X-Ray Emission from the Eastern Radio Lobe of Pictor A. *Paola Grandi, Matteo Guainazzi, Laura Maraschi, Raffaella Morganti, Roberto Fusco-Femiano, Mariateresa Fiocchi, Lucia Ballo, & Fabrizio Tavecchio.* 586, 123 (2003)

FUTAMASE, TOSHIFUMI. The Topology of a Weak Lensing Field in the Neighborhood of MS 1054−03. *Jun'ichi Sato, Keiichi Umetsu, Toshifumi Futamase, & Toru Yamada.* 582, L67 (2003)

FYNBO, J. P. U. See HJORTH, J., et al. Very High Column Density and Small Reddening toward GRB 020124 at $z = 3.20$.

FYNBO, J. U. See GREINER, J., et al. GRB 011121: A Collimated Outflow into Wind-blown Surroundings.

GABEL, J. R. The Kinematics and Physical Conditions of the Ionized Gas in Markarian 509. II. STIS Echelle Observations. *S. B. Kraemer, D. M. Crenshaw, T. Yaqoob, B. McKernan, J. R. Gabel, I. M. George, T. J. Turner, & J. P. Dunn.* 582, 125 (2003)

See CRENSHAW, D. M., et al. Simultaneous Ultraviolet and X-Ray Spectroscopy of the Seyfert 1 Galaxy NGC 5548. I. Physical Conditions in the Ultraviolet Absorbers.

Elemental Abundances in NGC 3516. *T. J. Turner, S. B. Kraemer, R. F. Mushotzky, I. M. George, & J. R. Gabel.* 594, 128 (2003)

GABEL, JACK R. The Kinematics and Physical Conditions of the Ionized Gas in Markarian 509. I. *Chandra* High Energy Grating Spectroscopy. *Tahir Yaqoob, Barry McKernan, Steven B. Kraemer, D. Michael Crenshaw, Jack R. Gabel, Ian M. George, & T. Jane Turner.* 582, 105 (2003)

The Ionized Gas and Nuclear Environment in NGC 3783. II. Averaged *Hubble Space Telescope*/STIS and *Far Ultraviolet Spectroscopic Explorer* Spectra. *Jack R. Gabel, D. Michael Crenshaw, Steven B. Kraemer, W. N. Brandt, Ian M. George, Frederick W. Hamann, Mary Elizabeth Kaiser, Shai Kaspi, Gerard A. Kriss, Smita Mathur, Richard F. Mushotzky, Kirpal Nandra, Hagai Netzer, Bradley M. Peterson, Joseph C. Shields, T. J. Turner, & Wei Zheng.* 583, 178 (2003)

The Ionized Gas and Nuclear Environment in NGC 3783. III. Detection of a Decreasing Radial Velocity in an Intrinsic Ultraviolet Absorber. *Jack R. Gabel, D. Michael Crenshaw, Steven B. Kraemer, W. N. Brandt, Ian M. George, Frederick W. Hamann, Mary Elizabeth Kaiser, Shai Kaspi, Gerard A. Kriss, Smita Mathur, Richard F. Mushotzky, Kirpal Nandra, Hagai Netzer, Bradley M. Paterson, Joseph C. Shields, T. J. Turner, & Wei Zheng.* 595, 120 (2003)

See NETZER, HAGAI, et al. The Ionized Gas and Nuclear Environment in NGC 3783. IV. Variability and Modeling of the 900 Kilosecond *Chandra* Spectrum.

GABICI, STEFANO. Nonthermal Radiation from Clusters of Galaxies: The Role of Merger Shocks in Particle Acceleration. *Stefano Gabici & Pasquale Blasi.* 583, 695 (2003)

GABRIEL, A. H. The Contribution of Polar Plumes to the Fast Solar Wind. *A. H. Gabriel, F. Bely-Dubau, & P. Lemaire.* 589, 623 (2003)

GABRIELLI, ANDREA. Bias and the Power Spectrum beyond the Turnover. *Ruth Durrer, Andrea Gabrielli, Michael Joyce, & Francesco Sylos Labini.* 585, L1 (2003)

GADOTTI, D. A. NGC 4608 and NGC 5701: Barred Galaxies without Disks? *D. A. Gadotti & R. E. de Souza.* 583, L75 (2003)

GÄNSICKE, BORIS. WZ Sagittae: *FUSE* Spectroscopy of the 2001 Outburst. *Knox S. Long, Cynthia S. Froning, Boris Gänsicke, Christian Knigge, Edward M. Sion, & Paula Szkody.* 591, 1172 (2003)

GÄNSICKE, BORIS T. *Hubble Space Telescope* STIS Spectroscopy of the White Dwarfs in the Ultrashort-Period Dwarf Novae VY Aquarii and WX Ceti. *Edward M. Sion, Paula Szkody, Fuhua Cheng, Boris T. Gänsicke, & Steve B. Howell.* 583, 907 (2003)

See SION, EDWARD M., et al. *Hubble Space Telescope* Spectroscopy of the Unexpected 2001 July Outburst of the Dwarf Nova WZ Sagittae.

Anomalous Ultraviolet Line Flux Ratios in the Cataclysmic variables 1RXS J232953.9+062814, CE 315, BZ Ursae Majoris, and EY Cygni observed with the *Hubble Space Telescope* Space Telescope Imaging Spectrograph. *Boris T. Gänsicke, Paula Szkody, Domitilla de Martino, Klaus Beuermann, Knox S. Long, Edward M. Sion, Christian Knigge, Tom Marsh, & Ivan Hubeny.* 594, 443 (2003)

Hubble Space Telescope Observations of Ultraviolet Oscillations in WZ Sagittae during the Decline from Outburst. *William F. Welsh, Edward M. Sion, Patrick Godon, Boris T. Gänsicke, Christian Knigge, Knox S. Long, & Paula Szkody.* 599, 509 (2003)

GAENSLER, B. M. See MILLER, J. M., et al. *XMM-Newton* Spectroscopy of the Accretion-driven Millisecond X-Ray Pulsar XTE J1751−305 in Outburst.

Fitting Together the H I Absorption and Emission in the Southern Galactic Plane Survey. *John M. Dickey, N. M. McClure-Griffiths, B. M. Gaensler, & A. J. Green.* 585, 801 (2003)

XMM-Newton Observations of PSR B1823−13: An Asymmetric Synchrotron Nebula around a Vela-like Pulsar. *B. M. Gaensler, N. S. Schulz, V. M. Kaspi, M. J. Pivovaroff, & W. E. Becker.* 588, 441 (2003)

X-Ray Observations of the Compact Central Object in Supernova Remnant G347.3−0.5. *J. S. Lazendic, P. O. Slane, B. M. Gaensler, P. P. Plucinsky, J. P. Hughes, D. K. Galloway, & F. Crawford.* 593, L27 (2003)

A Multifrequency Radio Study of Supernova Remnant G292.0+1.8 and Its Pulsar Wind Nebula. *B. M. Gaensler & B. J. Wallace.* 594, 326 (2003)

Untwisting the Tornado: X-Ray Imaging and Spectroscopy of G357.7−0.1. *B. M. Gaensler, J. K. J. Fogel, P. O. Slane, J. M. Miller, R. Wijnands, S. S. Eikenberry, & W. H. G. Lewin.* 594, L35 (2003)

Loops, Drips, and Walls in the Galactic Chimney GSH 277+00+36. *N. M. McClure-Griffiths, John M. Dickey, B. M. Gaensler, & A. J. Green.* 594, 833 (2003)

Discovery of a New Pulsar Wind Nebula in the Large Magellanic Cloud. *B. M. Gaensler, S. P. Hendrick, S. P. Reynolds, & K. J. Borkowski.* 594, L111 (2003)

A Neutral Hydrogen Self-Absorption Cloud in the Southern Galactic Plane Survey. *D. W. Kavars, J. M. Dickey, N. M. McClure-Griffiths, B. M. Gaensler, & A. J. Green.* 598, 1048 (2003)

GAENSLER, BRYAN M. See POOLEY, DAVID, et al. Dynamical Formation of Close Binary Systems in Globular Clusters.

GAESSLER, W. See GOTO, MIWA, et al. Spatially Resolved 3 Micron Spectroscopy of IRAS 22272+5435: Formation and Evolution of Aliphatic Hydrocarbon Dust in Proto–Planetary Nebulae.

See GOTO, MIWA, et al. Carbon Isotope Ratio in $^{12}CO/^{13}CO$ toward Local Molecular Clouds with Near-Infrared High-Resolution Spectroscopy of Vibrational Transition Bands.

GAESSLER, WOLFGANG. The Lack of Observational Evidence for the Quantum Structure of Spacetime at Planck Scales. *Roberto Ragazzoni, Massimo Turatto, & Wolfgang Gaessler.* 587, L1 (2003)

See Pyo, Tae-Soo, et al. Adaptive Optics Spectroscopy of the [Fe II] Outflow from DG Tauri.

Gaetz, T. See Markevitch, M., et al. *Chandra* Spectra of the Soft X-Ray Diffuse Background.

Gaffney, James A., III. X-Rays in the Orion Nebula Cluster: Constraints on the Origins of Magnetic Activity in Pre–Main-Sequence Stars. *Eric D. Feigelson, James A. Gaffney III, Gordon Garmire, Lynne A. Hillenbrand, & Leisa Townsley.* 584, 911 (2003)

Gagliardi, Simona. Carbon-Oxygen White Dwarfs Accreting CO-rich Matter. I. A Comparison between Rotating and Nonrotating Models. *Luciano Piersanti, Simona Gagliardi, Icko Iben, Jr., & Amedeo Tornambé.* 583, 885 (2003)

Carbon-Oxygen White Dwarf Accreting CO-Rich Matter. II. Self-Regulating Accretion Process up to the Explosive Stage. *Luciano Piersanti, Simona Gagliardi, Icko Iben, Jr., & Amedeo Tornambe.* 598, 1229 (2003)

Gagné, Marc. A Deep *Chandra* X-Ray Observation of the Embedded Young Cluster in NGC 2024. *Stephen Skinner, Marc Gagné, & Emily Belzer.* 598, 375 (2003)

Gaidos, J. See Akerlof, C. W., et al. A Search for Correlations of TeV Gamma Rays with Ultra–High-Energy Cosmic Rays.

Gaidos, J. A. See Holder, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.

See Hall, T. A., et al. Search for TeV Emissions from Pulsars in Binary Systems.

See de la Calle Pérez, I., et al. Search for High-Energy Gamma Rays from an X-Ray–Selected Blazar Sample.

Gaisser, T. K. See Ahrens, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

Galama, T. J. See Price, P. A., et al. GRB 010921: Strong Limits on an Underlying Supernova from the *Hubble Space Telescope*.

Continued Radio Monitoring of the Gamma-Ray Burst 991208. *T. J. Galama, D. A. Frail, R. Sari, E. Berger, G. B. Taylor, & S. R. Kulkarni.* 585, 899 (2003)

Keck Spectroscopy and *Hubble Space Telescope* Imaging of GRB 000926: Probing a Host Galaxy at $z = 2.038$. *S. Castro, T. J. Galama, F. A. Harrison, J. A. Holtzman, J. S. Bloom, S. G. Djorgovski, & S. R. Kulkarni.* 586, 128 (2003)

Hubble Space Telescope and Ground-based Optical and Ultraviolet Observations of GRB 010222. *T. J. Galama, D. Reichart, T. M. Brown, R. A. Kimble, P. A. Price, E. Berger, D. A. Frail, S. R. Kulkarni, S. A. Yost, A. Gal-Yam, J. S. Bloom, F. A. Harrison, R. Sari, D. Fox, & S. G. Djorgovski.* 587, 135 (2003)

See Price, P. A., et al. Discovery of GRB 020405 and Its Late Red Bump.

Galassi, M. See Crew, G. B., et al. *HETE-2* Localization and Observation of the Bright, X-Ray–rich Gamma-Ray Burst GRB 021211.

Galaz, G. CG J1720−67.8: A Detailed Analysis of Optical and Infrared Properties of a New Ultracompact Group of Galaxies. *S. Temporin, R. Weinberger, G. Galaz, & F. Kerber.* 584, 239 (2003)

Candidate Tidal Dwarf Galaxies in the Compact Group CG J1720−67.8. *S. Temporin, R. Weinberger, G. Galaz, & F. Kerber.* 587, 660 (2003)

Gallagher, J. S. A Search for Ionized Gas in the Draco and Ursa Minor Dwarf Spheroidal Galaxies. *J. S. Gallagher, G. J. Madsen, R. J. Reynolds, E. K. Grebel, & T. A. Smecker-Hane.* 588, 326 (2003)

Deep *Hubble Space Telescope* Imaging of IC 1613. II. The Star Formation History. *Evan D. Skillman, Eline Tolstoy, Andrew A. Cole, Andrew E. Dolphin, Abhijit Saha, J. S. Gallagher, R. C. Dohm-Palmer, & Mario Mateo.* 596, 253 (2003)

Gallagher, John S. Galaxy Populations and Evolution in Clusters. IV. Deep H I Observations of Dwarf Elliptical Galaxies in the Virgo Cluster. *Christopher J. Conselice, Karen O'Neil, John S. Gallagher, & Rosemary F. G. Wyse.* 591, 167 (2003)

Gallagher, John S., III. See Eskridge, Paul B., et al. Ultraviolet-Optical Pixel Maps of Face-on Spiral Galaxies: Clues for Dynamics and Star Formation Histories.

Gallagher, Peter T. Hα, Extreme-Ultraviolet, and Microwave Observations of the 2000 March 22 Solar Flare and Spontaneous Magnetic Reconnection. *Jeongwoo Lee, Peter T. Gallagher, Dale E. Gary, Gelu M. Nita, G. S. Choe, Su-Chan Bong, & Hong Sik Yun.* 585, 524 (2003)

Observational Evidence for Mode Coupling in the Chromospheric Network. *R. T. James McAteer, Peter T. Gallagher, David R. Williams, Mihalis Mathioudakis, D. Shaun Bloomfield, Kenneth J. H. Phillips, & Francis P. Keenan.* 587, 806 (2003)

Rapid Acceleration of a Coronal Mass Ejection in the Low Corona and Implications for Propagation. *Peter T. Gallagher, Gareth R. Lawrence, & Brian R. Dennis.* 588, L53 (2003)

Gallagher, S. C. *XMM-Newton* Reveals the Quasar Outflow in PG 1115+080. *G. Chartas, W. N. Brandt, & S. C. Gallagher.* 595, 85 (2003)

Gallagher III, John S. See Pritzl, Barton J., et al. Anomalous Evolution of the Dwarf Galaxy HIPASS J1321−31.

Gallego, Jesús. Luminosity and Stellar Mass Functions of Local Star-forming Galaxies. *Pablo G. Pérez-González, Jesús Gallegeo, Jaime Zamorano, Almudena Alonso-Herrero, Armando Gil de Paz, & Alfonso Aragón-Salamanca.* 587, L27 (2003)

Gallego, J. A Multiwavelength Approach to the Star Formation Rate Estimation in Galaxies at Intermediate Redshifts. *N. Cardiel, D. Elbaz, R. P. Schiavon, C. N. A. Willmer, D. C. Koo, A. C. Phillips, & J. Gallego.* 584, 76 (2003)

See Klose, S., et al. The Very Faint *K*-Band Afterglow of GRB 020819 and the Dust Extinction Hypothesis of the Dark Bursts.

Gallego, Jesús. Spatial Analysis of the Hα Emission in the Local Star-forming UCM Galaxies. *Pablo G. Pérez-González, Jaime Zamorano, Jesús Gallego, Alfonso Aragón-Salamanca, & Armando Gil de Paz.* 591, 827 (2003)

K_s Number Counts in the Groth and Coppi Fields. *David Cristóbal-Hornillos, Marc Balcells, Mercedes Prieto, Rafael Guzmán, Jesús Gallego, Nicolás Cardiel, Ángel Serrano, & Roser Pelló.* 595, 71 (2003)

Gallimore, J. F. The Nuclear Regions of the Seyfert Galaxy NGC 4151: Parsec-Scale H I Absorption and a Remarkable Radio Jet. *C. G. Mundell, J. M. Wrobel, A. Pedlar, & J. F. Gallimore.* 583, 192 (2003)

Expansion of the R4 H_2O Maser Arc near Cepheus A HW2. *J. F. Gallimore, R. J. Cool, M. D. Thornley, & J. McMullin.* 586, 306 (2003)

The Flaring H_2O Megamaser and Conpact Radio Source in Markarian 348. *A. B. Peck, C. Henkel, J. S. Ulvestad, A. Brunthaler, H. Falcke, M. Elitzur, K. M. Menten, & J. F. Gallimore.* 590, 149 (2003)

Gallino, R. See Reifarth, R., et al. Stellar Neutron Capture on Promethium: Implications for the *s*-Process Neutron Density.

See Sonnabend, K., et al. The *s*-Process Branching at ^{185}W.

Gallino, Roberto. *s*-Process Nucleosynthesis in Asymptotic Giant Branch Stars: A Test for Stellar Evolution. *Maria Lugaro, Falk Herwig, John C. Lattanzio, Roberto Gallino, & Oscar Straniero.* 586, 1305 (2003)

Abundances of Post–Iron-Peak Elements in HD 35155: A Symbiotic Star of Spectral Type S. *Andrew D. Vanture, George Wallerstein, Roberto Gallino, & Stefano Masera.* 587, 384 (2003)

Isotopic Compositions of Strontium, Zirconium, Molybdenum, and Barium in Single Presolar SiC Grains and Asymptotic Giant Branch Stars. *Maria Lugaro, Andrew M. Davis, Roberto Gallino, Michael J. Pellin, Oscar Straniero, & Franz Käppeler.* 593, 486 (2003)

Galloway, D. K. X-Ray Observations of the Compact Central Object in Supernova Remnant G347.3−0.5. *J. S. Lazendic, P. O. Slane, B. M. Gaensler, P. P. Plucinsky, J. P. Hughes, D. K. Galloway, & F. Crawford.* 593, L27 (2003)

Galloway, Duncan K. X-Ray Spectroscopy of the Accreting Millisecond Pulsar XTE J0929−314 in Outburst. *Adrienne M. Juett, Duncan K. Galloway, & Deepto Chakrabarty.* 587, 754 (2003)

Eddington-limited X-Ray Bursts as Distance Indicators. I. Systematic Trends and Spherical Symmetry in Bursts from 4U 1728−34. *Duncan K. Galloway, Dimitrios Psaltis, Deepto Chakrabarty, & Michael P. Muno.* 590, 999 (2003)

Galsgaard, K. Magnetic Pinching of Hyperbolic Flux Tubes. I. Basic Estimations. *V. S. Titov, K. Galsgaard, & T. Neukirch.* 582, 1172 (2003)

Magnetic Pinching of Hyperbolic Flux Tubes. II. Dynamic Numerical Model. *K. Galsgaard, V. S. Titov, & T. Neukirch.* 595, 506 (2003)

Gal-Yam, A. See Galama, T. J., et al. *Hubble Space Telescope* and Ground-based Optical and Ultraviolet Observations of GRB 010222.

See Price, P. A., et al. Discovery of GRB 020405 and Its Late Red Bump.

Gammell, S. See Holder, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.

See de la Calle Pérez, I., et al. Search for High-Energy Gamma Rays from an X-Ray–Selected Blazar Sample.

Gammie, Charles F. HARM: A Numerical Scheme for General Relativistic Magnetohydrodynamics. *Charles F. Gammie, Jonathan C. McKinney, & Gábor Tóth.* 589, 444 (2003)

Analysis of Clumps in Molecular Cloud Models: Mass Spectrum, Shapes, Alignment, and Rotation. *Charles F. Gammie, Yen-Ting Lin, James M. Stone, & Eve C. Ostriker.* 592, 203 (2003)

Nonlinear Outcome of Gravitational Instability in Disks with Realistic Cooling. *Bryan M. Johnson & Charles F. Gammie.* 597, 131 (2003)

GANDOLFI, G. See DE PASQUALE, M., et al. A Comparative Study of the X-Ray Afterglow Properties of Optically Bright and Dark Gamma-Ray Bursts.

GANGA, K. Cosmic Microwave Background Anisotropy Measurement from Python V. *K. Coble, S. Dodelson, M. Dragovan, K. Ganga, L. Knox, J. Kovac, B. Ratra, & T. Souradeep.* 584, 585 (2003)

See RUHL, J. E., et al. Improved Measurement of the Angular Power Spectrum of Temperature Anisotropy in the Cosmic Microwave Background from Two New Analyses of BOOMERANG Observations.

GANGA, K. M. See BENSON, B. A., et al. Peculiar Velocity Limits from Measurements of the Spectrum of the Sunyaev-Zeldovich Effect in Six Clusters of Galaxies.

See CRILL, B. P., et al. BOOMERANG: A Balloon-Borne Millimeter-Wave Telescope and Total Power Receiver for Mapping Anisotropy in the Cosmic Microwave Background.

GANGA, KEN. Galactic Foreground Constraints from the Python V Cosmic Microwave Background Anisotropy Data. *Pia Mukherjee, Kim Coble, Mark Dragovan, Ken Ganga, John Kovac, Bharat Ratra, & Tarun Souradeep.* 592, 692 (2003)

GANGADHARA, R. T. Understanding the Radio Emission Geometry of Multiple-Component Radio Pulsars from Retardation and Aberration Effects. *Y. Gupta & R. T. Gangadhara.* 584, 418 (2003)

GANGULY, RAJIB. Probing the Size of Low-Redshift Lyα Absorbers. *Jessica L. Rosenberg, Rajib Ganguly, Mark L. Giroux, & John T. Stocke.* 591, 677 (2003)

An Intrinsic Absorption Complex toward RX J1230.8+0115: Geometry and Photoionization Conditions. *Rajib Ganguly, Joseph Masiero, Jane C. Charlton, & Kenneth R. Sembach.* 598, 922 (2003)

GAO, X. Y. See AMENOMORI, M., et al. Multi-TeV Gamma-Ray Flares from Markarian 421 in 2000 and 2001 Observed with the Tibet Air Shower Array.

GAO, YU. Azimuthal and Kinematic Segregation of Neutral and Molecular Gas in Arp 118: The Yin-Yang Galaxy NGC 1144. *P. N. Appleton, V. Charmandaris, Yu Gao, Tom Jarrett, & M. A. Bransford.* 586, 112 (2003)

Nonnuclear Hyper/Ultraluminous X-Ray Sources in the Starbursting Cartwheel Ring Galaxy. *Yu Gao, Q. Daniel Wang, P. N. Appleton, & Ray A. Lucas.* 596, L171 (2003)

GARAVINI, G. See KNOP, R. A., et al. New Constraints on Ω_M, Ω_Λ, and w from an Independent Set of 11 High-Redshift Supernovae Observed with the *Hubble Space Telescope*.

GARAY, G. VLA and BIMA Observations toward the Exciting Source of the Massive HH 80–81 Outflow. *Y. Gómez, L. F. Rodríguez, J. M. Girart, G. Garay, & J. Martí.* 597, 414 (2003)

See TORRELLES, J. M., et al. Evidence for Evolution of the Outflow Collimation in Very Young Stellar Objects.

GARAY, GUIDO. A Triple Radio Continuum Source Associated with IRAS 16547−4247: A Collimated Stellar Wind Emanating from a Massive Protostar. *Guido Garay, Kate J. Brooks, Diego Mardones, & Ray P. Norris.* 587, 739 (2003)

A Parsec-Scale Flow Associated with the IRAS 16547−4247 Radio Jet. *Kate J. Brooks, Guido Garay, Diego Mardones, & Leonardo Bronfman.* 594, L131 (2003)

GARCÍA, A. Quasars Clustering at $z \approx 3$ on Scales $\lesssim 10\,h^{-1}$ Mpc. *L. Infante, J. Varela, M. Moles, G. Hertling, A. García, & F. Menanteau.* 588, 90 (2003)

GARCIA, M. R. Discovery of Radio/X-Ray/Optical–resolved Supernova Remnants in the Center of the Andromeda Galaxy. *A. K. H. Kong, L. O. Sjouwerman, B. F. Williams, M. R. Garcia, & J. R. Dickel.* 590, L21 (2003)

Resolved Jets and Long-Period Black Hole X-Ray Novae. *M. R. Garcia, J. M. Miller, J. E. McClintock, A. R. King, & J. Orosz.* 591, 388 (2003)

GARCIA, MICHAEL R. *Chandra* Studies of the X-Ray Point Source Luminosity Functions of M31. *Albert K. H. Kong, Rosanne DiStefano, Michael R. Garcia, & Jochen Greiner.* 585, 298 (2003)

Multiwavelength Spectrum of the Black Hole XTE J1118+480 in Quiescence. *Jeffrey E. McClintock, Ramesh Narayan, Michael R. Garcia, Jerome A. Orosz, Ronald A. Remillard, & Stephen S. Murray.* 593, 435 (2003)

GARCÍA, R. A. Excitation and Damping of Low-Degree Solar p-Modes during Activity Cycle 23: Analysis of GOLF and VIRGO/Sun Photometer Data. *S. J. Jiménez-Reyes, R. A. García, A. Jiménez, & W. J. Chaplin.* 595, 446 (2003)

The Rotation of the Deep Solar Layers. *S. Couvidat, R. A. García, S. Turck-Chièze, T. Corbard, C. J. Henney, & S. Jiménez-Reyes.* 597, L77 (2003)

GARCÍA-BERRO, ENRIQUE. The Impact of the Chemical Stratification of White Dwarfs on the Classification of Classical Novae. *Jordi José, Margarita Hernanz, Enrique García-Berro, & Pilar Gil-Pons.* 597, L41 (2003)

GARCÍA-BURILLO, S. Detection of Reactive Ions in the Ultracompact H II Regions Monoceros R2 and G29.96−0.02. *J. R. Rizzo, A. Fuente, A. Rodríguez-Franco, & S. García-Burillo.* 597, L153 (2003)

GARCÍA LORENZO, BEGOÑA. Deep Near-Infrared Mapping of Young and Old Stars in Blue Compact Dwarf Galaxies. *Luz M. Cairós, Nicola Caon, Polychronis Papaderos, Kai Noeske, Jose M. Vílchez, Begoña García Lorenzo, & Casiana Muñoz-Tuñón.* 593, 312 (2003)

GARCÍA-SEGURA, GUILLERMO. Ram Pressure Stripping in Planetary Nebulae. *Eva Villaver, Guillermo García-Segura, & Arturo Manchado.* 585, L49 (2003)

Hot Gas in the Circumstellar Bubble S308. *You-Hua Chu, Martín A. Guerrero, Robert A. Gruendl, Guillermo García-Segura, & Heinrich J. Wendker.* 599, 1189 (2003)

GARDINER, T. A. Stellar Outflows Driven by Magnetized Wide-Angle Winds. *T. A. Gardiner, A. Frank, & L. Hartmann.* 582, 269 (2003)

GARDNER, JEFFREY P. The Influence of Ω_b on High-Redshit Structure. *Jeffrey P. Gardner, Neal Katz, Lars Hernquist, & David H. Weinberg.* 587, 1 (2003)

GARDNER, JONATHAN P. Emission-Line Galaxies in the STIS Parallel Survey. II. Star Formation Density. *Harry I. Teplitz, Nicholas R. Collins, Jonathan P. Gardner, Robert S. Hill, & Jason Rhodes.* 589, 704 (2003)

Emission-Line Galaxies in the Space Telescope Imaging Spectrograph Parallel Survey. I. Observations and Data Analysis. *Harry I. Teplitz, Nicholas R. Collins, Jonathan P. Gardner, Robert S. Hill, Sara R. Heap, Don J. Lindler, Jason Rhodes, & Bruce E. Woodgate.* 146, 209 (2003)

GARMINE, G. See MARKEVITCH, M., et al. *Chandra* Spectra of the Soft X-Ray Diffuse Background.

GARMIRE, G. P. The Redshift Evolution of the 2–8 keV X-Ray Luminosity Function. *L. L. Cowie, A. J. Barger, M. Bautz, W. N. Brandt, & G. P. Garmire.* 584, L57 (2003)

Very High Redshift X-Ray–selected Active Galactic Nuclei in the *Chandra* Deep Field–North. *A. J. Barger, L. L. Cowie, P. Capak, D. M. Alexander, F. E. Bauer, W. N. Brandt, G. P. Garmire, & A. E. Hornschemeier.* 584, L61 (2003)

Chandra Observations of QSO 2237+0305. *X. Dai, G. Chartas, E. Agol, M. W. Bautz, & G. P. Garmire.* 589, 100 (2003)

See MUNO, M. P., et al. A Deep *Chandra* Catalog of X-Ray Point Sources toward the Galactic Center.

See BAGANOFF, F. K., et al. *Chandra* X-Ray Spectroscopic Imaging of Sagittarius A* and the Central Parsec of the Galaxy.

X-Ray Sources with Periodic Variability in a Deep *Chandra* Image of the Galactic Center. *M. P. Muno, F. K. Baganoff, M. W. Bautz, W. N. Brandt, G. P. Garmire, & G. R. Ricker.* 599, 465 (2003)

GARMIRE, GORDON. X-Rays in the Orion Nebula Cluster: Constraints on the Origins of Magnetic Activity in Pre–Main-Sequence Stars. *Eric D. Feigelson, James A. Gaffney III, Gordon Garmire, Lynne A. Hillenbrand, & Leisa Townsley.* 584, 911 (2003)

GARMIRE, GORDON P. The Radial Structure of Supernova Remnant N103B. *Karen T. Lewis, David N. Burrows, John P. Hughes, Patrick O. Slane, Gordon P. Garmire, & John A. Nousek.* 582, 770 (2003)

X-Ray Source Population in the Elliptical Galaxy NGC 720 with *Chandra*. *Tesla E. Jeltema, Claude R. Canizares, David A. Buote, & Gordon P. Garmire.* 585, 756 (2003)

X-Ray Emission from Multiphase Shock in the Large Magellanic Cloud Supernova Remnant N49. *Sangwook Park, David N. Burrows, Gordon P. Garmire, John A. Nousek, John P. Hughes, & Rosa Murphy Williams.* 586, 210 (2003)

Coronal X-Ray Emission from an Intermediate-Age Brown Dwarf. *Yohko Tsuboi, Yoshitomo Maeda, Eric D. Feigelson, Gordon P. Garmire, George Chartas, Koji Mori, & Steven H. Pravdo.* 587, L51 (2003)

Detection of Magnesium-rich Ejecta in the Middle-aged Supernova Remnant N49B. *Sangwook Park, John P. Hughes, Patrick O. Slane, David N. Burrows, Jessica S. Warren, Gordon P. Garmire, & John A. Nousek.* 592, L41 (2003)

10 MK Gas in M17 and the Rosette Nebula: X-Ray Flows in Galactic H II Regions. *Leisa K. Townsley, Eric D. Feigelson, Thierry Montmerle, Patrick S. Broos, You-Hua Chu, & Gordon P. Garmire.* 593, 874 (2003)

0103−72.6: A New Oxygen-rich Supernova Remnant in the Small Magellanic Cloud. *Sangwook Park, John P. Hughes, David N. Burrows, Patrick O. Slane, John A. Nousek, & Gordon P. Garmire.* 598, L95 (2003)

The ϵ Chamaeleontis Young Stellar Group and the Characterization of Sparse Stellar Clusters. *Eric D. Feigelson, Warrick A. Lawson, & Gordon P. Garmire.* 599, 1207 (2003)

GARMOND, S. See KNOP, R. A., et al. New Constraints on Ω_M, Ω_Λ, and w from an Independent Set of 11 High-Redshift Supernovae Observed with the *Hubble Space Telescope*.

GARNAVICH, P. M. See MATHESON, T., et al. The Spectroscopic Variability of GRB 021004.

Discovery of the Low-Redshift Optical Afterglow of GRB 011121 and Its Progenitor Supernova SN 2001ke. *P. M. Garnavich, K. Z. Stanek, L. Wyrzykowski, L. Infante, E. Bendek, D. Bersier, S. T. Holland, S. Jha, T. Matheson, R. P. Kirshner, K. Krisciunas, M. M. Phillips, & R. G. Carlberg.* 582, 924 (2003)

See BERSIER, D., et al. The Strongly Polarized Afterglow of GRB 020405.

See BERSIER, D., et al. The Unusual Optical Afterglow of the Gamma-Ray Burst GRB 021004: Color Changes and Short-Timescale Variability.

See STANEK, K. Z., et al. Spectroscopic Discovery of the Supernova 2003dh Associated with GRB 030329.

See MATHESON, T., et al. Photometry and Spectroscopy of GRB 03029 and Its Associated Supernova 2003dh: The First Two Months.

GARNAVICH, PETER. See MICHAEL, ELI, et al. *Hubble Space Telescope* Observations of High-Velocity Lyα and Hα Emission from Supernova Remnant 1987A: The Structure and Development of the Reverse Shock.

See TONRY, JOHN L., et al. Cosmological Results from High-z Supernovae.

GARNAVICH, PETER M. Limits on Eclipses of the Pre–Main-Sequence Star KH 15D in the First Half of the 20th Century. *Joshua N. Winn, Peter M. Garnavich, K. Z. Stanek, & Dimitar D. Sasselov.* 593, L121 (2003)

See MAZZALI, PAOLO A., et al. The Type Ic Hypernova SN 2003dh/GRB 030329.

GARNETT, DONALD R. The Composition Gradient in M101 Revisited. II. Electron Temperatures and Implications for the Nebular Abundance Scale. *Robert C. Kennicutt, Jr., Fabio Bresolin, & Donald R. Garnett.* 591, 801 (2003)

GARTON, K. See KNOP, R. A., et al. New Constraints on Ω_M, Ω_Λ, and w from an Independent Set of 11 High-Redshift Supernovae Observed with the *Hubble Space Telescope*.

GARY, DALE E. Ho, Extreme-Ultraviolet, and Microwave Observations of the 2000 March 22 Solar Flare and Spontaneous Magnetic Reconnection. *Jeongwoo Lee, Peter T. Gallagher, Dale E. Gary, Gelu M. Nita, G. S. Choe, Su-Chan Bong, & Hong Sik Yun.* 585, 524 (2003)

Decimetric Spike Bursts versus Microwave Continuum. *Gregory D. Fleishman, Dale E. Gary, & Gelu M. Nita.* 593, 571 (2003)

Flare-Related Magnetic Anomaly with a Sign Reversal. *Jiong Qiu & Dale E. Gary.* 599, 615 (2003)

GARZA, DAVID. The Quiescent Corona of VB 10. *Thomas A. Fleming, Mark S. Giampapa, & David Garza.* 594, 982 (2003)

GASKIN, JESSICA A. The Mass, Baryonic Fraction, and X-Ray Temperature of the Luminous, High-Redshift Cluster of Galaxies MS 0451.6−0305. *Megan Donahue, Jessica A. Gaskin, Sandeep K. Patel, Marshall Joy, Doug Clowe, & John P. Hughes.* 598, 190 (2003)

GATHRIGHT, J. See COLAVITA, M., et al. Observations of DG Tauri with the Keck Interferometer.

See SWAIN, MARK, et al. Interferometer Observations of Subparsec-Scale Infrared Emission in the Nucleus of NGC 4151.

GAUDI, B. S. See FIELDS, DALE L., et al. High-Precision Limb-Darkening Measurement of a K3 Giant Using Microlensing.

GAUDI, B. SCOTT. Angular Radii of Stars via Microlensing. *B. Scott Gaudi, David S. Graff, & Cheongho Han.* 586, 451 (2003)

Probing Structures of Distant Extrasolar Planets with Microlensing. *B. Scott Gaudi, Heon-Young Chang, & Cheongho Han.* 586, 527 (2003)

Periodic Flux Variability of Stars Due to the Reflex Doppler Effect Induced by Planetary Companions. *Abraham Loeb & B. Scott Gaudi.* 588, L117 (2003)

Resolving the Microlens Mass Degeneracy for Earth-Mass Planets. *Andrew Gould, B. Scott Gaudi, & Cheongho Han.* 591, L53 (2003)

Identifying Lenses with Small-Scale Structure. I. Cusp Lenses. *Charles R. Keeton, B. Scott Gaudi, & A. O. Petters.* 598, 138 (2003)

GAUG, M. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

GAULT, AMANDA C. Spectroscopic and Spectropolarimetric Observations of V838 Monocerotis. *John P. Wisniewski, Nancy D. Morrison, Karen S. Bjorkman, Anatoly S. Miroshnichenko, Amanda C. Gault, Jennifer L. Hoffman, Marilyn R. Meade, & Jason M. Nett.* 588, 486 (2003)

GAUME, R. A. High-Resolution Continuum Imaging at 1.3 and 0.7 Centimeters of the W3 IRS 5 Region. *T. L. Wilson, D. A. Boboltz, R. A. Gaume, & S. T. Megeath.* 597, 434 (2003)

GAUTIER, T. N., III. A Catalog of Bright Filamentary Structures in the Interstellar Medium. *Tom Jackson, Michael Werner, & T. N. Gautier III.* 149, 365 (2003)

GAVAZZI, G. Capturing a Star Formation Burst in Galaxies Infalling onto the Cluster A1367. *G. Gavazzi, L. Cortese, A. Boselli, J. Iglesias-Paramo, J. M. Vilchez, & L. Carrasco.* 597, 210 (2003)

GAVRIIL, F. P. A Major Soft Gamma Repeater–like Outburst and Rotation Glitch in the No-longer-so-anomalous X-Ray Pulsar 1E 2259+586. *V. M. Kaspi, F. P. Gavriil, P. M. Woods, J. B. Jensen, M. S. E. Roberts, & D. Chakrabarty.* 588, L93 (2003)

A Second Glitch from the "Anomalous" X-Ray Pulsar 1RXS J170849.0−4000910. *V. M. Kaspi & F. P. Gavriil.* 596, L71 (2003)

GAWISER, E. See MATHESON, T., et al. The Spectroscopic Variability of GRB 021004.

GAWISER, ERIC. The ESI/Keck II Damped Lyα Abundance Database. *Jason X. Prochaska, Eric Gawiser, Arthur M. Wolfe, Jeff Cooke, & Dawn Gelino.* 147, 227 (2003)

C II* Absorption in Damped Lyα Systems. I. Star Formation Rates in a Two-Phased Medium. *Arthur M. Wolfe, Jason X. Prochaska, & Eric Gawiser.* 593, 215 (2003)

C II* Absorption in Damped Lyα Systems. I. A New Window on the Star Formation History of the Universe. *Arthur M. Wolfe, Eric Gawiser, & Jason X. Prochaska.* 593, 235 (2003)

The Age-Metallicity Relation of the Universe in Neutral Gas: The First 100 Damped Lyα Systems. *Jason X. Prochaska, Eric Gawiser, Arthur M. Wolfe, Sandra Castro, & S. G. Djorgovski.* 595, L9 (2003)

GAYLEY, K. G. The Statistical Sobolev-Rosseland Mean and the Effects of Frequency Redistribution on Wolf-Rayet Wind Driving. *A. J. Onifer & K. G. Gayley.* 590, 473 (2003)

GAZTAÑAGA, E. See FELDMAN, H., et al. An Estimate of Ω_m without Conventional Priors.

GAZTAÑAGA, ENRIQUE. Correlation between Galaxies and Quasi-stellar Objects in the Sloan Digital Sky Survey: A Signal from Gravitational Lensing Magnification? *Enrique Gaztañaga.* 589, 82 (2003)

Detection of the Integrated Sachs-Wolfe and Sunyaev-Zel'dovich Effects from the Cosmic Microwave Background–Galaxy Correlation. *Pablo Fosalba, Enrique Gaztañaga, & Francisco J. Castander.* 597, L89 (2003)

GE, JIAN. Fixed Delay Interferometry for Doppler Extrasolar Planet Detection: Erratum (ApJ, 571, L165 [2002]). *Jian Ge.* 593, L147 (2003) (Orig. paper in 571, L165 (2002))

GEAR, W. See WEBB, T. M., et al. The Canada–United Kingdom Deep Submillimeter Survey. V. The Submillimeter Properties of Lyman Break Galaxies.

GEAR, W. K. See HOLLAND, W. S., et al. Submillimeter Observations of an Asymmetric Dust Disk around Fomalhaut.

See WEBB, T. M., et al. The Canada-UK Deep Submillimeter Survey. VI. The 3 Hour Field.

The Canada-UK Deep Submillimeter Survey. VII. Optical and Near-Infrared Identifications for the 14 Hour Field. *T. M. A. Webb, S. J. Lilly, D. L. Clements, S. Eales, M. Yun, M. Brodwin, L. Dunne, & W. K. Gear.* 597, 680 (2003)

GEBALLE, T. R. High-Resolution 3 Micron Spectroscopy of Molecules in the Mesosphere and Troposphere of Titan. *T. R. Geballe, S. J. Kim, K. S. Noll, & C. A. Griffith.* 583, L39 (2003)

Winds in R Coronae Borealis Stars. *Geoffrey C. Clayton, T. R. Geballe, & Luciana Bianchi.* 595, 412 (2003)

GEBHARDT, KARL. Axisymmetric Dynamical Models of the Central Regions of Galaxies. *Karl Gebhardt, Douglas Richstone, Scott Tremaine, Tod R. Lauer, Ralf Bender, Gary Bower, Alan Dressler, S. M. Faber, Alexei V. Filippenko, Richard Green, Carl Grillmair, Luis C. Ho, John Kormendy, John Magorrian, & Jason Pinkney.* 583, 92 (2003)

The Black Hole–Bulge Relationship in Quasars. *Gregory A. Shields, Karl Gebhardt, Sarah Salviander, Beverley J. Wills, Bingrong Xie, Michael S. Brotherton, Juntao Yuan, & Matthias Dietrich.* 583, 124 (2003)

See PINKNEY, JASON, et al. Kinematics of 10 Early-Type Galaxies from *Hubble Space Telescope* and Ground-based Spectroscopy.

The DEEP Groth Strip Survery. IX. Evolution of the Fundamental Plane of Field Galaxies. *Karl Gebhardt, S. M. Faber, David C. Koo, Myungshin Im, Luc Simard, Garth D. Illingworth, Andrew C. Phillips, Vicki L. Sarajedini, Nicole P. Vogt, Benjamin Weiner, & Christopher N. A. Willmer.* 597, 239 (2003)

GEHA, M. See ALCOCK, C., et al. The MACHO Project Large Magellanic Cloud Variable Star Inventory. XI. Frequency Analysis of the Fundamental Mode RR Lyrae Stars.

GEHRELS, NEIL. Ozone Depletion from Nearby Supernovae. *Neil Gehrels, Claude M. Laird, Charles H. Jackman, John K. Cannizzo, Barbara J. Mattson, & Wan Chen.* 585, 1169 (2003)

GEHRZ, R. D. See DRAKE, JEREMY J., et al. The Extraordinary X-Ray Light Curve of the Classical Nova V1494 Aquilae (1999 No. 2) in Outburst: The Discovery of Pulsations and a "Burst."

See NESS, J.-U., et al. A *Chandra* Low Energy Transmission Grating Spectrometer Observation of V4743 Sagittarii: A Supersoft X-Ray Source and a Violently Variable Light Curve.

GEIS, NORBERT. Realizing Integral Field Spectroscopy in the Far-Infrared. *Leslie W. Looney, Walfried Raab, Albrecht Poglitsch, & Norbert Geis.* 597, 628 (2003)

GEISS, JOHANNES. Effects of Interstellar and Solar Wind Ionized Helium on the Interaction of the Solar Wind with the Local Interstellar Medium. *Vlad Izmodenov, Yury G. Malama, George Gloeckler, & Johannes Geiss.* 594, L59 (2003)

GELDZAHLER, B. J. The X-Ray Spectral Changes of Scorpius X-1. *C. F. Bradshaw, B. J. Geldzahler, & E. B. Fomalont.* 592, 486 (2003)

GELINO, DAWN. The ESI/Keck II Damped Lyα Abundance Database. *Jason X. Prochaska, Eric Gawiser, Arthur M. Wolfe, Jeff Cooke, & Dawn Gelino.* 147, 227 (2003)

GELINO, DAWN M. GRO J0422+32: The Lowest Mass Black Hole? *Dawn M. Gelino & Thomas E. Harrison.* 599, 1254 (2003)

GELLER, MARGRET J. Tidally Triggered Star Formation in Close Pairs of Galaxies. II. Constraints on Burst Strengths and Ages. *Elizabeth Barton Gillespie, Margret J. Geller, & Scott J. Kenyon.* 582, 668 (2003)

GENDRON, E. See FELDT, M., et al. Discovery of a Candidate for the Central Star of the Ultracompact H II Region G5.89−0.39.

GENG, Q. X. See AMENOMORI, M., et al. Multi-TeV Gamma-Ray Flares from Markarian 421 in 2000 and 2001 Observed with the Tibet Air Shower Array.

GENOVA, RICARDO. Kinematical Structure of the Local Interstellar Medium: The Galactic Anticenter Hemisphere. *Ricardo Génova & John E. Beckman.* 145, 355 (2003)

GENZEL, R. The Position of Sagittarius A*. II. Accurate Positions and Proper Motions of Stellar SiO Masers near the Galactic Center. *M. J. Reid, K. M. Menten, R. Genzel, T. Ott, R. Schödel, & A. Eckart.* 587, 208 (2003)

The [C II] 158 Micron Line Deficit in Ultraluminous Infrared Galaxies Revisited. *M. L. Luhman, S. Satyapal, J. Fischer, M. G. Wolfire, E. Sturm, C. C. Dudley, D. Lutz, & R. Genzel.* 594, 758 (2003)

The Stellar Cusp around the Supermassive Black Hole in the Galactic Center. *R. Genzel, R. Schödel, T. Ott, F. Eisenhauer, R. Hofmann, M. Lehnert, A. Eckart, T. Alexander, A. Sternberg, R. Lenzen, Y. Clénet, F. Lacombe, D. Rouan, A. Renzini, & L. E. Tacconi-Garman.* 594, 812 (2003)

Stellar Dynamics in the Central Arcsecond of Our Galaxy. *R. Schödel, T. Ott, R. Genzel, A. Eckart, N. Mouawad, & T. Alexander.* 596, 1015 (2003)

See NERI, R., et al. Interferometric Observations of Powerful CO Emission from Three Submillimeter Galaxies at $z = 2.39$, 2.51, and 3.35.

A Geometric Determination of the Distance to the Galactic Center. *F. Eisenhauer, R. Schödel, R. Genzel, T. Ott, M. Tecza, R. Abuter, A. Eckart, & T. Alexander.* 597, L121 (2003)

The Nature of Starburst Activity in M82. *N. M. Förster Schreiber, R. Genzel, D. Lutz, & A. Sternberg.* 599, 193 (2003)

GENZEL, REINHARD. Spatially Resolved Millimeter Interferometry of SMM J02399−0136: A Very Massive Galaxy at $z = 2.8$. *Reinhard Genzel, Andrew J. Baker, Linda J. Tacconi, Dieter Lutz, Pierre Cox, Stéphane Guilloteau, & Alain Omont.* 584, 633 (2003)

GEORGAKILAS, A. A. Temporal Behavior of the Evershed Effect. *A. A. Georgakilas & E. B. Christopoulou.* 584, 509 (2003)

Wavelet Analysis of Umbral Oscillations. *E. B. Christopoulou, A. Skodras, A. A. Georgakilas, & S. Koutchmy.* 591, 416 (2003)

GEORGANOPOULOS, MARKOS. Relativistic and Slowing Down: The Flow in the Hot Spots of Powerful Radio Galaxies and Quasars. *Markos Georganopoulos & Demosthenes Kazanas.* 589, L5 (2003)

Decelerating Flows in TeV Blazars: A Resolution to the BL Lacertae–FR I Unification Problem. *Markos Georganopoulos & Demosthenes Kazanas.* 594, L27 (2003)

GEORGANTOPOULOS, I. SHEEP: The Search for the High-Energy Extragalactic Population. *K. Nandra, I. Georgantopoulos, A. Ptak, & T. J. Turner.* 582, 615 (2003)

X-Ray Luminous Galaxies. I. *Chandra* Observations of IRAS 00317−2142. *I. Georgantopoulos, A. Zezas, & M. J. Ward.* 584, 129 (2003)

Chandra Observations of NGC 4698: A Seyfert 2 Galaxy with No Absorption. *I. Georgantopoulos & A. Zezas.* 594, 704 (2003)

GEORGE, I. M. The Kinematics and Physical Conditions of the Ionized Gas in Markarian 509. II. STIS Echelle Observations. *S. B. Kraemer, D. M. Crenshaw, T. Yaqoob, B. McKernan, J. R. Gabel, I. M. George, T. J. Turner, & J. P. Dunn.* 582, 125 (2003)

See MARKOWITZ, A., et al. X-Ray Fluctuation Power Spectral Densities of Seyfert 1 Galaxies.

See CRENSHAW, D. M., et al. Simultaneous Ultraviolet and X-Ray Spectroscopy of the Seyfert 1 Galaxy NGC 5548. I. Physical Conditions in the Ultraviolet Absorbers.

Elemental Abundances in NGC 3516. *T. J. Turner, S. B. Kraemer, R. F. Mushotzky, I. M. George, & J. R. Gabel.* 594, 128 (2003)

GEORGE, IAN M. The Kinematics and Physical Conditions of the Ionized Gas in Markarian 509. I. *Chandra* High Energy Grating Spectroscopy. *Tahir Yaqoob, Barry McKernan, Steven B. Kraemer, D. Michael Crenshaw, Jack R. Gabel, Ian M. George, & T. Jane Turner.* 582, 105 (2003)

See GABEL, JACK R., et al. The Ionized Gas and Nuclear Environment in NGC 3783. II. Averaged *Hubble Space Telescope*/STIS and *Far Ultraviolet Spectroscopic Explorer* Spectra.

The Nature of the Ultraviolet/X-Ray Absorber in PG 2302+029. *Bassem M. Sabra, Fred Hamann, Buell T. Jannuzi, Ian M. George, & Joseph C. Shields.* 590, 66 (2003)

The Kinematics and Physical Conditions of the Ionized Gas in NGC 4593 from *Chandra* High-Energy Grating Spectroscopy. *Barry McKernan, Tahir Yaqoob, Ian M. George, & T. J. Turner.* 593, 142 (2003)

See GABEL, JACK R., et al. The Ionized Gas and Nuclear Environment in NGC 3783. III. Detection of a Decreasing Radial Velocity in an Intrinsic Ultraviolet Absorber.

Fe XXV and Fe XXVI Diagnostics of the Black Hole and Accretion Disk in Active Galaxies: *Chandra* Time-resolved Grating Spectroscopy of NGC 7314. *Tahir Yaqoob, Ian M. George, Timothy R. Kallman, Urmila Padmanabhan, Kimberly A. Weaver, & T. Jane Turner.* 596, 85 (2003)

A Warm/Hot Intergalactic Medium toward 3C 120? *Barry McKernan, Tahir Yaqoob, Richard Mushotzky, Ian M. George, & T. Jane Turner.* 598, L83 (2003)

See NETZER, HAGAI, et al. The Ionized Gas and Nuclear Environment in NGC 3783. IV. Variability and Modeling of the 900 Kilosecond *Chandra* Spectrum.

GEORGE, NATHAN D. Off-Axis Neutrino Scattering in Gamma-Ray Burst Central Engines. *Warner A. Miller, Nathan D. George, Arkady Kheyfets, & John M. McGhee.* 583, 833 (2003)

GEORGOBIANI, DALI. What Causes *p*-Mode Asymmetry Reversal? *Dali Georgobiani, Robert F. Stein, & Åke Nordlund.* 596, 698 (2003)

GERARDY, C. L. See SCHAEFER, BRADLEY E., et al. GRB 021004: A Massive Progenitor Star Surrounded by Shells.

GER DE BRUYN, A. A Westerbork Synthesis Radio Telescope 1400 and 350 MHz Continuum Survey of the Cygnus OB2 Association, in Search of Hot Massive Stars. *Diah Y. A. Setia Gunawan, A. Ger de Bruyn, Karel A. van der Hucht, & Peredur M. Williams.* 149, 123 (2003)

GERHARD, ORTWIN. The Origin of IRS 16: Dynamically Driven Inspiral of a Dense Star Cluster to the Galactic Center? *Simon F. Portegies Zwart, Stephen L. W. McMillan, & Ortwin Gerhard.* 593, 352 (2003)

See NAPOLITANO, NICOLA R., et al. Intracluster Stellar Population Properties from *N*-Body Cosmological Simulations. I. Constraints at $z = 0$.

GERHARDT, L. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

GERKE, BRIAN. See MADGWICK, DARREN S., et al. The DEEP2 Galaxy Redshift Survey: Spectral Classification of Galaxies at $z \sim 1$.

GERSSEN, J. See MARCONI, A., et al. Is There Really a Black Hole at the Center of NGC 4041? Constraints from Gas Kinematics.

GEZARI, S. Follow-Up *Hubble Space Telescope*/Space Telescope Imaging Spectroscopy of Three Candidate Tidal Disruption Events. *S. Gezari, J. P. Halpern, S. Komossa, D. Grupe, & K. M. Leighly.* 592, 42 (2003)

GHARAGYOZYAN, G. Detection of the High-Energy Cosmic Rays from the Monogem Ring. *A. Chilingarian, H. Martirosia, & G. Gharagyozyan.* 597, L129 (2003)

GHAVAMIAN, PARVIZ. Iron-rich Ejecta in the Supernova Remnant DEM L71. *John P. Hughes, Parviz Ghavamian, Cara E. Rakowski, & Patrick O. Slane.* 582, L95 (2003)

Far-Ultraviolet Spectra of a Nonradiative Shock Wave in the Cygnus Loop. *John C. Raymond, Parviz Ghavamian, Ravi Sankrit, William P. Blair, & Salvador Curiel.* 584, 770 (2003)

The Physics of Supernova Blast Waves. I. Kinematics of DEM L71 in the Large Magellanic Cloud. *Parviz Ghavamian, Cara E. Rakowski, John P. Hughes, & T. B. Williams.* 590, 833 (2003)

The Physics of Supernova Remnant Blast Waves. II. Electron-Ion Equilibration in DEM L71 in the Large Magellanic Cloud. *Cara E. Rakowski, Parviz Ghavamian, & John P. Hughes.* 590, 846 (2003)

GHEZ, A. M. The First Measurement of Spectral Lines in a Short-Period Star Bound to the Galaxy's Central Black Hole: A Paradox of Youth. *A. M. Ghez, G. Duchêne, K. Matthews, S. D. Hornstein, A. Tanner, J. Larkin, M. Morris, E. E. Becklin, S. Salim, T. Kremenek, D. Thompson, B. T. Soifer, G. Neugebauer, & I. McLean.* 586, L127 (2003)

The First Detection of Spatially Resolved Mid-Infrared Scattered Light from a Protoplanetary Disk. *C. McCabe, G. Duchêne, & A. M. Ghez.* 588, L113 (2003)

No Fossil Disk in the T Tauri Multiple System V773 Tauri. *G. Duchêne, A. M. Ghez, C. McCabe, & A. J. Weinberger.* 592, 288 (2003)

GHIGNA, SEBASTIANO. See NAPOLITANO, NICOLA R., et al. Intracluster Stellar Population Properties from *N*-Body Cosmological Simulations. I. Constraints at $z = 0$.

GHIGO, FRANK D. Statistical Analysis of 5 Year Continuous Radio Flare Data from β Persei, V711 Tauri, δ Librae, and UX Arietis. *Mercedes T. Richards, Elizabeth B. Waltman, Frank D. Ghigo, & Donald St. P. Richards.* 147, 337 (2003)

GHIL, M. Successive Refinements in Long-Term Integrations of Planetary Orbits. *F. Varadi, B. Runnegar, & M. Ghil.* 592, 620 (2003)

GHISELLINI, G. See BÖTTCHER, M., et al. Coordinated Multiwavelength Observations of BL Lacertae in 2000.

GHIZZARDI, SIMONA. SMAUG: A New Technique for the Deprojection of Galaxy Clusters. *Fabio Pizzolato, Silvano Molendi, Simona Ghizzardi, & Sabrina De Grandi.* 592, 62 (2003)

GHOSH, KAJAL K. *Chandra* X-Ray Observations of the Spiral Galaxy M81. *Douglas A. Swartz, Kajal K. Ghosh, Michael L. McCollough, Thomas G. Pannuti, Allyn F. Tennant, & Kinwah Wu.* 144, 213 (2003)

GIACCONI, R. See GILLI, R., et al. Tracing the Large-Scale Structure in the *Chandra* Deep Field South.

See GROGIN, N. A., et al. *Hubble Space Telescope* Imaging in the *Chandra* Deep Field–South. III. Quantitative Morphology of the 1 Million Second *Chandra* Counterparts and Comparison with the Field Population.

GIACOMETTI, M. See CRILL, B. P., et al. BOOMERANG: A Balloon-Borne Millimeter-Wave Telescope and Total Power Receiver for Mapping Anisotropy in the Cosmic Microwave Background.

See RUHL, J. E., et al. Improved Measurement of the Angular Power Spectrum of Temperature Anisotropy in the Cosmic Microwave Background from Two New Analyses of BOOMERANG Observations.

GIALLONGO, E. A European Southern Observatory Very Large Telescope Survey of Near-Infrared ($Z \leq 25$) Selected Galaxies at Redshifts $4.5 < z < 6$: Constraining the Cosmic Star Formation Rate near the Reionization Epoch. *A. Fontana, F. Poli, N. Menci, M. Nonino, E. Giallongo, S. Cristiani, & S. D'Odorico.* 587, 544 (2003)

Quasar Evolution Driven by Galaxy Encounters in Hierarchical Structures. *N. Menci, A. Cavaliere, A. Fontana, E. Giallongo, F. Poli, & V. Vittorini.* 587, L63 (2003)

See POLI, F., et al. The Evolution of the Galaxy Luminosity Function in the Rest-Frame Blue Band up to $z = 3.5$.

See FONTANA, A., et al. The Assembly of Massive Galaxies from Near-Infrared Observations of the Hubble Deep Field–South.

GIAMPAPA, MARK S. The Quiescent Corona of VB 10. *Thomas A. Fleming, Mark S. Giampapa, & David Garza.* 594, 982 (2003)

GIAVALISCO, MAURO. Lyman Break Galaxies at Redshift $z \sim 3$: Survey Description and Full Data Set. *Charles C. Steidel, Kurt L. Adelberger, Alice E. Shapley, Max Pettini, Mark Dickenson, & Mauro Giavalisco.* 592, 728 (2003)

The Internal Ultraviolet–Optical Color Dispersion: Quantifying the Morphological *K*-Correction. *Casey Papovich, Mauro Giavalisco, Mark Dickinson, Christopher J. Conselice, & Henry C. Ferguson.* 598, 827 (2003)

Near-Infrared Observations of BL Lacertae Host Galaxies. *C. C. Cheung, C. Megan Urry, Riccardo Scarpa, & Mauro Giavalisco.* 599, 155 (2003)

GIBBONS, R. See KNOP, R. A., et al. New Constraints on Ω_M, Ω_Λ, and w from an Independent Set of 11 High-Redshift Supernovae Observed with the *Hubble Space Telescope*.

GIBBS, K. See HOLDER, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.

See DE LA CALLE PÉREZ, I., et al. Search for High-Energy Gamma Rays from an X-Ray–Selected Blazar Sample.

GIBLIN, TIMOTHY W. How Sample Completeness Affects Gamma-Ray Burst Classification. *Jon Hakkila, Timothy W. Giblin, Richard J. Roiger, David J. Haglin, William S. Paciesas, & Charles A. Meegan.* 582, 320 (2003)

GIBSON, B. K. Hα Emission from High-Velocity Clouds and Their Distances. *M. E. Putman, J. Bland-Hawthorn, S. Veilleux, B. K. Gibson, K. C. Freeman, & P. R. Maloney.* 597, 948 (2003)

GIBSON, BRAD K. Galactic Halo Stars in Phase Space: A Hint of Satellite Accretion? *Chris B. Brook, Daisuke Kawata, Brad K. Gibson, & Chris Flynn.* 585, L125 (2003)

The Magellanic Stream, High-Velocity Clouds, and the Sculptor Group. *Mary E. Putman, Lister Staveley-Smith, Kenneth C. Freeman, Brad K. Gibson, & David G. Barnes.* 586, 170 (2003)

The Metallicity of Pregalactic Globular Clusters: The Observational Consequences of the First Stars. *Michael A. Beasley, Daisuke Kawata, Frazer R. Pearce, Duncan A. Forbes, & Brad K. Gibson.* 596, L187 (2003)

GIBSON, S. E. The Emergence of a Twisted Magnetic Flux Tube into a Preexisting Coronal Arcade. *Y. Fan & S. E. Gibson.* 589, L105 (2003)

GIBSON, STEVEN J. The Pleiades Reflection Nebula. I. Ultraviolet, Optical, and Far-Infrared Imaging Photometry. *Steven J. Gibson & Kenneth H. Nordsieck.* 589, 347 (2003)

The Pleiades Reflection Nebula. II. Simple Model Constraints on Dust Properties and Scattering Geometry. *Steven J. Gibson & Kenneth H. Nordsieck.* 589, 362 (2003)

GIEBELS, B. See TOURNEAR, D., et al. X-Ray Bursts in Neutron Star and Black Hole Binaries from Unconvetional Stellar Aspect Experiment and *Rossi X-Ray Timing Explorer* Data: Detections and Upper Limits.

GIEBINK, CYNTHIA. How Well Can We Infer the Properties of the Solar Acoustic Sources? *Stuart M. Jefferies, Giuseppe Severino, Pier-Francesco Moretti, Maurizio Oliviero, & Cynthia Giebink.* 596, L117 (2003)

GIEREN, WOLFGANG. Quantitative Spectral Analysis of Early B-Type Supergiants in the Sculptor Galaxy NGC 300. *Miguel Alejandro Urbaneja, Aremio Herrero, Fabio Bresolin, Rolf-Peter Kudritzki, Wolfgang Gieren, & Joachim Puls.* 584, L73 (2003)

GIERLINSKI, MAREK. Correlated Timing and Spectral Behavior of 4U 1705−44. *Jean-Francois Olive, Didier Barret, & Marek Gierlinski.* 583, 416 (2003)

GIES, D. R. Wind Accretion and State Transitions in Cygnus X-1. *D. R. Gies, C. T. Bolton, J. R. Thomson, W. Huang, M. V. McSwain, R. L. Riddle, Z. Wang, P. J. Wiita, D. W. Wingert, B. Csak, & L. L. Kiss.* 583, 424 (2003)

GIL, JANUSZ. Using the Intensity Modulation Index to Test Pulsar Radio Emission Models. *Fredrick A. Jenet & Janusz Gil.* 596, L215 (2003)

GIL, JANUSZ A. Drifting Subpulses in PSR B0943+10. *Janusz A. Gil & Marek Sendyk.* 585, 453 (2003)

GILBANK, D. G. A SCUBA Galaxy in the Protocluster around 53W002 at $z = 2.4$. *Ian Smail, R. J. Ivison, D. G. Gilbank, J. S. Dunlop, W. C. Keel, K. Motohara, & J. A. Stevens.* 583, 551 (2003)

GILBERT, ANDREA M. Kinematic Masses of Super–Star Clusters in M82 from High-Resolution Near-Infrared Spectroscopy. *Nate McCrady, Andrea M. Gilbert, & James R. Graham.* 596, 240 (2003)

See FIGER, DONALD F., et al. High-Precision Stellar Radial Velocities in the Galactic Center.

GILBERT, KAROLINE M. An Intrinsic Baldwin Effect in the Hβ Broad Emission Line in the Spectrum of NGC 5548. *Karoline M. Gilbert & Bradley M. Peterson.* 587, 123 (2003)

GIL DE PAZ, A. Palomar/Las Campanas Imaging Atlas of Blue Compact Dwarf Galaxies. I. Images and Integrated Photometry. *A. Gil de Paz, B. F. Madore, & O. Pevunova.* 147, 29 (2003)

Discovery of a Double Ring in the Dwarf Galaxy Markarian 409. *A. Gil de Paz, B. F. Madore, K. Noeske, L. M. Cairós, P. Papaderos, & S. A. Silich.* 596, L179 (2003)

GIL DE PAZ, ARMANDO. Luminosity and Stellar Mass Functions of Local Star-forming Galaxies. *Pablo G. Pérez-González, Jesús Gallegeo, Jaime Zamorano, Almudena Alonso-Herrero, Armando Gil de Paz, & Alfonso Aragón-Salamanca.* 587, L27 (2003)

Spatial Analysis of the Hα Emission in the Local Star-forming UCM Galaxies. *Pablo G. Pérez-González, Jaime Zamorano, Jesús Gallego, Alfonso Aragón-Salamanca, & Armando Gil de Paz.* 591, 827 (2003)

GILLANDERS, G. H. See HALL, T. A., et al. Search for TeV Emissions from Pulsars in Binary Systems.

GILLESPIE, ELIZABETH BARTON. Tidally Triggered Star Formation in Close Pairs of Galaxies. II. Constraints on Burst Strengths and Ages. *Elizabeth Barton Gillespie, Margret J. Geller, & Scott J. Kenyon.* 582, 668 (2003)

GILLI, R. A *Chandra* Minisurvey of X-Ray–weak Quasars. *G. Risaliti, M. Elvis, R. Gilli, & M. Salvati.* 587, L9 (2003)

See WANG, J., et al. A Puzzling X-Ray Source Found in the *Chandra* Deep Field–South.

Tracing the Large-Scale Structure in the *Chandra* Deep Field South. *R. Gilli, A. Cimatti, E. Daddi, G. Hasinger, P. Rosati, G. Szokoly, P. Tozzi, J. Bergeron, S. Borgani, R. Giacconi, L. Kewley, V. Mainieri, M. Mignoli, M. Nonino, C. Norman, J. Wang, G. Zamorani, W. Zheng, & A. Zirm.* 592, 721 (2003)

GILLI, ROBERTO. What Do the *Hubble Space Telescope* and *Chandra* Tell Us about the Jet and the Nuclear Region of the Radio Galaxy 3C 270? *Marco Chiaberge, Roberto Gilli, F. Duccio Macchetto, William B. Sparks, & Alessandro Capetti.* 582, 645 (2003)

The Nuclear Spectral Energy Distribution of NGC 6251: A BL Lacertae Object in the Center of an FR I Radio Galaxy. *Marco Chiaberge, Roberto Gilli, Alessandro Capetti, & F. Duccio Macchetto.* 597, 166 (2003)

GILLILAND, RONALD L. Near-Field Microlensing and Its Effects on Stellar Transit Observations by *Kepler*. *Kailash C. Sahu & Ronald L. Gilliland.* 584, 1042 (2003)

An Extensive Census of *Hubble Space Telescope* Counterparts to *Chandra* X-Ray Sources in the Globular Cluster 47 Tucanae. I. Astrometry and Photometry. *Peter D. Edmonds, Ronald L. Gilliland, Craig O. Heinke, & Jonathan E. Grindlay.* 596, 1177 (2003)

An Extensive Census of *Hubble Space Telescope* Counterparts to *Chandra* X-Ray Sources in the Globular Cluster 47 Tucanae. II. Time Series and Analysis. *Peter D. Edmonds, Ronald L. Gilliland, Craig O. Heinke, & Jonathan E. Grindlay.* 596, 1197 (2003)

A *V*-Band Survey for Variable Galactic Nuclei in the Hubble Deep Field. *Vicki L. Sarajedini, Ronald L. Gilliland, & Christina Kasm.* 599, 173 (2003)

A Far-Ultraviolet Survey of 47 Tucanae. II. The Long-Period Cataclysmic Variable AKO 9. *Christian Knigge, David R. Zurek, Michael M. Shara, Knox S. Long, & Ronald L. Gilliland.* 599, 1320 (2003)

GILMAN, PETER A. Clamshell and Tipping Instabilities in a Two-dimensional Magnetohydrodynamic Tachocline. *Paul S. Cally, Mausumi Dikpati, & Peter A. Gilman.* 582, 1190 (2003)

Stability Analysis of Tachocline Latitudinal Differential Rotation and Coexisting Toroidal Band Using a Shallow-Water Model. *Mausumi Dikpati, Peter A. Gilman, & Matthias Rempel.* 596, 680 (2003)

GILMORE, DIANE. See FIGER, DONALD F., et al. High-Precision Stellar Radial Velocities in the Galactic Center.

GILMORE, DIANE M. The Speed and Orientation of the Parsec-Scale Jet in 3C 279. *B. Glenn Piner, Stephen C. Unwin, Ann E. Wehrle, Alma C. Zook, C. Megan Urry, & Diane M. Gilmore.* 588, 716 (2003)

GILMORE, GERARD. A Dynamical Fossil in the Ursa Minor Dwarf Spheroidal Galaxy. *Jan T. Kleyna, Mark I. Wilkinson, Gerard Gilmore, & N. Wyn Evans.* 588, L21 (2003)

A Dynamical Fossil in the Ursa Minor Dwarf Spheroidal Galaxy: Erratum (ApJ, 588, L21 [2003]). *Jan T. Kleyna, Mark I. Wilkinson, Gerard Gilmore, & N. Wyn Evans.* 589, L59 (2003) (Orig. paper in 588, L21 (2003))

GIL-PONS, PILAR. The Impact of the Chemical Stratification of White Dwarfs on the Classification of Classical Novae. *Jordi José, Margarita Hernanz, Enrique García-Berro, & Pilar Gil-Pons.* 597, L41 (2003)

GIMÉNEZ DE CASTRO, CARLOS G. Properties of Fast Submillimeter Time Structures during a Large Solar Flare. *Jean-Pierre Raulin, Pierre Kaufmann, Carlos G. Giménez de Castro, Alessandra A. Pacini, Vladimir S. Makhmutov, Hugo Levato, & Marta Rovira.* 592, 580 (2003)

GINESTET, N. See PRIEUR, J. L., et al. Speckle Observations of Composite Spectrum Stars. II. Differential Photometry of the Binary Components.

GIOIA, I. See VIKHLININ, A., et al. Cosmological Constraints from the Evolution of the Cluster Baryon Mass Function at $z \sim 0.5$.

GIOIA, I. M. See MULLIS, C. R., et al. The 160 Square Degree *ROSAT* Survey: The Revised Catalog of 201 Clusters with Spectroscopic Redshifts.

The *ROSAT* North Ecliptic Pole Survey: The Optical Identifications. *I. M. Gioia, J. P. Henry, C. R. Mullis, H. Böhringer, U. G. Briel, W. Voges, & J. P. Huchra.* 149, 29 (2003)

GIOMMI, PAOLO. What Types of Jets Does Nature Make? A New Population of Radio Quasars. *Paolo Padovani, Eric S. Perlman, Hermine Landt, Paolo Giommi, & Matteo Perri.* 588, 128 (2003)

GIOVANELLI, R. See FELDMAN, H., et al. An Estimate of Ω_m without Conventional Priors.

GIOVANNI, M. See GREEN, E. M., et al. Discovery of a New Class of Pulsating Stars: Gravity-Mode Pulsators among Subdwarf B Stars.

GIOVANNINI, O. See MUKADEM, ANJUM S., et al. Constraining the Evolution of ZZ Ceti.

GIRARD, TERRENCE M. See DINESCU, DANA I., et al. Absolute Proper Motions to $B \sim 22.5$. V. Detection of Sagittarius Dwarf Spheroidal Debris in the Direction of the Galactic Anticenter: Erratum (ApJ, 575, L67 [2002]).

GIRARDI, MARISA. The Mass Profile of Galaxy Clusters out to $\sim 2r_{200}$. *Andrea Biviano & Marisa Girardi.* 585, 205 (2003)

GIRART, J. M. Very Large Array Observations of Proper Motions in YLW 15. *S. Curiel, J. M. Girart, L. F. Rodríguez, & J. Canto.* 582, L109 (2003)

VLA and BIMA Observations toward the Exciting Source of the Massive HH 80–81 Outflow. *Y. Gómez, L. F. Rodríguez, J. M. Girart, G. Garay, & J. Martí.* 597, 414 (2003)

GIRART, JOSÉ M. Interferometric Mapping of Magnetic Fields in Star-Forming Regions. III. Dust and CO Polarization in DR 21(OH). *Shih-Ping Lai, José M. Girart, & Richard M. Crutcher.* 598, 392 (2003)

GIRAUD-HERAUD, Y. See KERINS, E., et al. Theory of Pixel Lensing toward M31. II. The Velocity Anisotropy and Flattening of the MACHO Distribution.

GIROUX, MARK L. A Survey of *Far Ultraviolet Spectroscopic Explorer* and *Hubble Space Telescope* Sight Lines through High-Velocity Cloud Complex C. *Joseph A. Collins, J. Michael Shull, & Mark L. Giroux.* 585, 336 (2003)

Probing the Size of Low-Redshift Lyα Absorbers. *Jessica L. Rosenberg, Rajib Ganguly, Mark L. Giroux, & John T. Stocke.* 591, 677 (2003)

The Multiphase Intergalactic Medium toward PKS 2155−304. *J. Michael Shull, Jason Tumlinson, & Mark L. Giroux.* 594, L107 (2003)

GISLER, G. See ATKINS, R., et al. The High-Energy Gamma-Ray Fluence and Energy Spectrum of GRB 970417A from Observations with Milagrito.

See FALCONE, A., et al. Observation of GeV Solar Energetic Particles from the 1997 November 6 Event Using Milagrito.

See ATKINS, R., et al. Observation of TeV Gamma Rays from the Crab Nebula with Milagro Using a New Background Rejection Technique.

GIZIS, JOHN E. Binarity in Brown Dwarfs: T Dwarf Binaries Discovered with the *Hubble Space Telescope* Wide Field Planetary Camera 2. *Adam J. Burgasser, J. Davy Kirkpatrick, I. Neill Reid, Michael E. Brown, Cherie L. Miskey, & John E. Gizis.* 586, 512 (2003)

See BURGASSER, ADAM J., et al. The First Substellar Subdwarf? Discovery of a Metal-poor L Dwarf with Halo Kinematics.

GIZON, L. Determining the Inclination of the Rotation Axis of a Sun-like Star. *L. Gizon & S. K. Solanki.* 589, 1009 (2003)

GLADDERS, MICHAEL D. The EXPLORE Project. I. A Deep Search for Transiting Extrasolar Planets. *G. Mallén-Ornelas, S. Seager, H. K. C. Yee, D. Minniti, Michael D. Gladders, G. M. Mallén-Fullerton, & T. M. Brown.* 582, 1123 (2003)

The Incidence of Strong-Lensing Clusters in the Red-Sequence Cluster Survey. *Michael D. Gladders, Henk Hoekstra, H. K. C. Yee, Patrick B. Hall, & L. Felipe Barrientos.* 593, 48 (2003)

GLAZEBROOK, K. The Hawaii+Anglo-Australian Observatory *K*-Band Galaxy Redshift Survey. I. The Local *K*-Band Luminosity Function. *J.-S. Huang, K. Glazebrook, L. L. Cowie, & C. Tinney.* 584, 203 (2003)

GLAZEBROOK, KARL. The Sloan Digital Sky Survey: The Cosmic Spectrum and Star Formation History. *Karl Glazebrook, Ivan K. Baldry, Michael R. Blanton, Jon Brinkmann, Andrew Connolly, István Csabai, Masataka Fukugita, Željko Ivezić, Jon Loveday, Avery Meiksin, Robert Nichol, Eric Peng, Don Schneider, Mark SubbaRao, Christy Tremonti, & Donald G. York.* 587, 55 (2003)

Constraints on a Universal Initial Mass Function from Ultraviolet to Near-Infrared Galaxy Luminosity Densities. *Ivan K. Baldry & Karl Glazebrook.* 593, 258 (2003)

Probing Dark Energy Using Baryonic Oscillations in the Galaxy Power Spectrum as a Cosmological Ruler. *Chris Blake & Karl Glazebrook.* 594, 665 (2003)

GLENN, J. A Polarization Survey of SiO Maser Variability in Evolved Stars. *J. Glenn, P. R. Jewell, R. Fourre, & L. Miaja.* 588, 478 (2003)

GLICENSTEIN, J. F. See FIELDS, DALE L., et al. High-Precision Limb-Darkening Measurement of a K3 Giant Using Microlensing.

GLICENSTEIN, J.-F. Exotic Lensing Corrections to the Microlensing Optical Depth. *J.-F. Glicenstein.* 584, 278 (2003)

GLIOZZI, M. The *XMM-Newton* View of the Nucleus of NGC 4261. *R. M. Sambruna, M. Gliozzi, M. Eracleous, W. N. Brandt, & R. Mushotzky.* 586, L37 (2003)

GLIOZZI, MARIO. Long-Term Continuous Monitoring of the Broad-Line Radio Galaxies 3C 390.3 and 3C 120 with the *Rossi X-Ray Timing Explorer*. *Mario Gliozzi, Rita M. Sambruna, & Michael Eracleous.* 584, 176 (2003)

GLOECKLER, GEORGE. Effects of Interstellar and Solar Wind Ionized Helium on the Interaction of the Solar Wind with the Local Interstellar Medium. *Vlad Izmodenov, Yury G. Malama, George Gloeckler, & Johannes Geiss.* 594, L59 (2003)

GLOVER, SIMON C. O. Comparing Gas-Phase and Grain-catalyzed H_2 Formation. *Simon C. O. Glover.* 584, 331 (2003)

GNEDIN, NICKOLAY Y. Linear Gas Dynamics in the Expanding Universe. *Nickolay Y. Gnedin, Emily J. Baker, Thomas J. Bethell, Meredith M. Drosback, A. Gayler Harford, Amalia K. Hicks, Adam G. Jensen, Brian A. Keeney, Christopher M. Kelso, Mark C. Neyrinck, Scott E. Pollack, & Timothy P. van Vliet.* 583, 525 (2003)

Lyman Break Galaxies and Reionization of the Universe. *A. Gayler Harford & Nickolay Y. Gnedin.* 597, 74 (2003)

GNEDIN, OLEG Y. Tidal Effects in Clusters of Galaxies. *Oleg Y. Gnedin.* 582, 141 (2003)

Dynamical Evolution of Galaxies in Clusters. *Oleg Y. Gnedin.* 589, 752 (2003)

Thermal Structure and Cooling of Superfluid Neutron Stars with Accreted Magnetized Envelopes. *Alexander Y. Potekhin, Dmitry G. Yakovlev, Gilles Chabrier, & Oleg Y. Gnedin.* 594, 404 (2003)

GODFREY, G. See TOURNEAR, D., et al. X-Ray Bursts in Neutron Star and Black Hole Binaries from Unconvetional Stellar Aspect Experiment and *Rossi X-Ray Timing Explorer* Data: Detections and Upper Limits.

GODON, PATRICK. Modeling Accretional Heating in Dwarf Novae. *Patrick Godon & Edward M. Sion.* 586, 427 (2003)

See SION, EDWARD M., et al. *Hubble Space Telescope* Spectroscopy of the Unexpected 2001 July Outburst of the Dwarf Nova WZ Sagittae.

Hubble Space Telescope Observations of Ultraviolet Oscillations in WZ Sagittae during the Decline from Outburst. *William F. Welsh, Edward M. Sion, Patrick Godon, Boris T. Gänsicke, Christian Knigge, Knox S. Long, & Paula Szkody.* 599, 509 (2003)

GOEBEL, J. H. Guilt by Association: The 13 Micron Dust Emission Feature and Its Correlation to Other Gas and Dust Features. *G. C. Sloan, Kathleen E. Kraemer, J. H. Goebel, & Stephan D. Price.* 594, 482 (2003)

GÖĞÜŞ, E. See WOODS, P. M., et al. The 2001 April Burst Activation of SGR 1900+14: Pulse Properties and Torque.

See KOUVELIOTOU, C., et al. Unraveling the Cooling Trend of the Soft Gamma Repeater SGR 1627−41.

GÖĞÜŞ, ERSIN. See PATEL, SANDEEP K., et al. *Chandra* Observations of the Anomalous X-Ray Pulsar 4U 0142+61.

See LENTERS, GEOFFREY T., et al. An Extended Burst Tail from SGR 1900+14 with a Thermal X-Ray Spectrum.

GÖSSL, CLAUS A. The Wendelstein Calar Alto Pixellensing Project (WeCAPP): First MACHO Candidates. *Arno Riffeser, Jürgen Fliri, Ralf Bender, Stella Seitz, & Claus A. Gössl.* 599, L17 (2003)

GÖTZ, D. See MEREGHETTI, S., et al. *Integral* and *XMM-Newton* Observations of the Weak Gamma-Ray Burst GRB 030227.

GOETZ, JENNIFER A. The Compact H II Region S88B: Excitation and Extinction. *Jennifer A. Goetz, Robert Gutermuth, Judith L. Pipher, William J. Forrest, & Eric M. Howard.* 599, 1173 (2003)

GÖTZ, MARTIN. Galaxy Formation: Cold Dark Matter, Feedback, and the Hubble Sequence. *Jesper Sommer-Larsen, Martin Götz, & Laura Portinari.* 596, 47 (2003)

GOICOECHEA, LUIS J. See COLLEY, WESLEY N., et al. Around-the-Clock Observations of the Q9057+561A,B Gravitationally Lensed Quasar. II. Results for the Second Observing Season.

GOLBASI, ORHAN. See COLLEY, WESLEY N., et al. Around-the-Clock Observations of the Q9057+561A,B Gravitationally Lensed Quasar. II. Results for the Second Observing Season.

GOLD, R. E. Evidence for a Suprathermal Seed Population of Heavy Ions Accelerated by Interplanetary Shocks near 1 AU. *M. I. Desai, G. M. Mason, J. R. Dwyer, J. E. Mazur, R. E. Gold, S. M. Krimigis, C. W. Smith, & R. M. Skoug.* 588, 1149 (2003)

GOLDBERG, DORIT. On the Mass-Ratio Distribution of Spectroscopic Binaries. *Dorit Goldberg, Tsevi Mazeh, & David W. Latham.* 591, 397 (2003)

GOLDEN, A. Pulsar PSR B0656+14, the Monogem Ring, and the Origin of the "Knee" in the Primary Cosmic-Ray Spectrum. *S. E. Thorsett, R. A. Benjamin, Walter F. Brisken, A. Golden, & W. M. Goss.* 592, L71 (2003)

The Distance and Radius of the Neutron Star PSR B0656+14. *Walter F. Brisken, S. E. Thorsett, A. Golden, & W. M. Goss.* 593, L89 (2003)

GOLDHABER, G. See KNOP, R. A., et al. New Constraints on Ω_M, Ω_Λ, and w from an Independent Set of 11 High-Redshift Supernovae Observed with the *Hubble Space Telescope*.

GOLDHABER, GERSON. Multicolor Light Curves of Type Ia Supernovae on the Color-Magnitude Diagram: A Novel Step toward More Precise Distance and Extinction Estimates. *Lifan Wang, Gerson Goldhaber, Greg Aldering, & Saul Perlmutter.* 590, 944 (2003)

GOLDONI, P. A New X-Ray Flare from the Galactic Nucleus Detected with the *XMM-Newton* Photon Imaging Cameras. *A. Goldwurm, E. Brion, P. Goldoni, P. Ferrando, F. Daigne, A. Decourchelle, R. S. Warwick, & P. Predehl.* 584, 751 (2003)

GOLDREICH, PETER. Imbalanced Weak Magnetohydrodynamic Turbulence. *Yoram Lithwick & Peter Goldreich.* 582, 1220 (2003)

Eccentricity Evolution for Planets in Gaseous Disks. *Peter Goldreich & Re'em Sari.* 585, 1024 (2003)

GOLDSCHMIDT, A. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

GOLDSMITH, P. F. H I Narrow Self-Absorption in Dark Clouds. *D. Li & P. F. Goldsmith.* 585, 823 (2003)

Massive Quiescent Cores in Orion. I. Temperature Structure. *D. Li, P. F. Goldsmith, & K. Menten.* 587, 262 (2003)

GOLDSMITH, PAUL. A C-Band Spectral Scan of IRC +10°216. *Esteban Araya, Peter Hofner, Paul Goldsmith, Slava Slysh, & Shuro Takano.* 596, 556 (2003)

GOLDSMITH, PAUL F. Detections of OH toward the Extreme Carbon Star IRC +10216. *K. E. Saavik Ford, David A. Neufeld, Paul F. Goldsmith, & Gary J. Melnick.* 589, 430 (2003)

Submillimeter Wave Astronomy Satellite Mapping Observations of Water Vapor around Sagittarius B2. *David A. Neufeld, Edwin A. Bergin, Gary J. Melnick, & Paul F. Goldsmith.* 590, 882 (2003)

GOLDSTEIN, J. H. See RUNYAN, M. C., et al. ACBAR: The Arcminute Cosmology Bolometer Array Receiver.

Estimates of Cosmological Parameters Using the Cosmic Microwave Background Angular Power Spectrum of ACBAR. *J. H. Goldstein, P. A. R. Ade, J. J. Bock, J. R. Bond, C. Cantalupo, C. R. Contaldi, M. D. Daub, W. L. Holzapfel, C. Kuo, A. E. Lange, M. Lueker, M. Newcomb, J. B. Peterson, D. Pogosyan, J. E. Ruhl, M. C. Runyan, & E. Torbet.* 599, 773 (2003)

GOLDWURM, A. A New X-Ray Flare from the Galactic Nucleus Detected with the *XMM-Newton* Photon Imaging Cameras. *A. Goldwurm, E. Brion, P. Goldoni, P. Ferrando, F. Daigne, A. Decourchelle, R. S. Warwick, & P. Predehl.* 584, 751 (2003)

GOLENETSKII, S. See PRICE, P. A., et al. Discovery of GRB 020405 and Its Late Red Bump.

Observations of Giant Outbursts from Cygnus X-1. *S. Golenetskii, R. Aptekar, D. Frederiks, E. Mazets, V. Palshin, K. Hurley, T. Cline, & B. Stern.* 596, 1113 (2003)

GOLENETSKII, S. V. See FEROCI, M., et al. The 2001 April Burst Activation of SGR 1900+14: X-Ray Afterglow Emission.

Golenetskii, Sergey. See Lenters, Geoffrey T., et al. An Extended Burst Tail from SGR 1900+14 with a Thermal X-Ray Spectrum.

Golimowski, D. A. See Tran, H. D., et al. Advanced Camera for Surveys Observations of Young Star Clusters in the Interacting Galaxy UGC 10214.

See Bouwens, R. J., et al. Star Formation at $z \sim 6$: i-Dropouts in the Advanced Camera for Surveys Guaranteed Time Observation Fields.

See Blakeslee, John P., et al. Advanced Camera for Surveys Photometry of the Cluster RDCS 1252.9−2927: The Color-Magnitude Relation at $z = 1.24$.

See Meurer, Gerhardt R., et al. The Discovery of Globular Clusters in the Protospiral Galaxy NGC 2915: Implications for Hierarchical Galaxy Evolution.

Golimowski, David A. See Blakeslee, John P., et al. Discovery of Two Distant Type Ia Supernovae in the Hubble Deep Field–North with the Advanced Camera for Surveys.

Golub, J. SPINR—a Wide-Field Ultraviolet Spectral Imaging System. *T. A. Cook, V. J. Gsell, J. Golub, & S. Chakrabarti.* 585, 1177 (2003)

Golub, L. Constraints on Active Region Coronal Heating. *S. K. Antiochos, J. T. Karpen, E. E. DeLuca, L. Golub, & P. Hamilton.* 590, 547 (2003)

Golub, Leon. The Dynamical Morphologies of Flares Associated with the Two Types of Solar Coronal Mass Ejections. *Mei Zhang & Leon Golub.* 595, 1251 (2003)

Gombosi, T. I. See Roussev, I. I., et al. A Three-dimensional Model of the Solar Wind Incorporating Solar Magnetogram Observations.

Gombosi, Tamas I. A Three-dimensional Flux Rope Model for Coronal Mass Ejections Based on a Loss of Equilibrium. *Ilia I. Roussev, Terry G. Forbes, Tamas I. Gombosi, Igor V. Sokolov, Darren L. DeZeeuw, & Joachim Birn.* 588, L45 (2003)

Probing the Edge of the Solar System: Formation of an Unstable Jet-Sheet. *Merav Opher, Paulett C. Liewer, Tamas I. Gombosi, Ward Manchester, Darren L. DeZeeuw, Igor Sokolov, & Gabor Toth.* 591, L61 (2003)

Gómez, Daniel O. Role of the Hall Current in Magnetohydrodynamic Dynamos. *Pablo D. Mininni, Daniel O. Gómez, & Swadesh M. Mahajan.* 584, 1120 (2003)

Dynamo Action in Magnetohydrodynamics and Hall-Magnetohydrodynamics. *Pablo D. Mininni, Daniel O. Gómez, & Swadesh M. Mahajan.* 587, 472 (2003)

Gómez, J. F. See Torrelles, J. M., et al. Evidence for Evolution of the Outflow Collimation in Very Young Stellar Objects.

Gómez, José F. See Trinidad, Miguel A., et al. Observations of Water Masers and Radio Continuum Emission in AFGL 2591.

Gómez, José-Luís. Three-dimensional Simulations of Relativistic Precessing Jets Probing the Structure of Superluminal Sources. *Miguel-Ángel Aloy, José-María Martí, José-Luís Gómez, Iván Agudo, Ewald Müller, & José-María Ibáñez.* 585, L109 (2003)

Gómez, P. L. See Hopkins, A. M., et al. Star Formation Rate Indicators in the Sloan Digital Sky Survey.

Gomez, Percy L. Galaxy Star Formation as a Function of Environment in the Early Data Release of the Sloan Digital Sky Survey. *Percy L. Gomez, Robert C. Nichol, Christopher L. Miller, Michael L. Balogh, Tomotsugu Goto, Ann I. Zabludoff, A. Kathy Romer, Mariengela Bernardi, Ravi Sheth, Andrew M. Hopkins, Francisco J. Castander, Andrew J. Connolly, Donald P. Schneider, Jon Brinkmann, Don Q. Lamb, Mark SubbaRao, & Donald G. York.* 584, 210 (2003)

The Environment of Active Galactic Nuclei in the Sloan Digital Sky Survey. *Christopher J. Miller, Robert C. Nichol, Percy L. Gómez, Andrew M. Hopkins, & Mariangela Bernardi.* 597, 142 (2003)

Gómez, Y. VLA and BIMA Observations toward the Exciting Source of the Massive HH 80–81 Outflow. *Y. Gómez, L. F. Rodríguez, J. M. Girart, G. Garay, & J. Martí.* 597, 414 (2003)

Gómez, Yolanda. A Cluster of Compact Radio Sources in NGC 2024 (Orion B). *Luis F. Rodríguez, Yolanda Gómez, & Bo Reipurth.* 598, 1100 (2003)

Gomez de Castro, Ana I. *Hubble Space Telescope* STIS Spectrum of RW Aurigae A: Evidence for an Ionized Beltlike Structure and Mass Ejection in Timescales of a Few Hours. *Ana I. Gomez de Castro & Eva Verdugo.* 597, 443 (2003)

Gómez-Flechoso, M. Ángeles. A New Method of Estimating the Mass-to-Light Ratio of the Ursa Minor Dwarf Spheroidal Galaxy. *M. ángeles Gómez-Flechoso & D. Martínez-Delgado.* 586, L123 (2003)

Goncalves, Denise R. The Physical Parameters, Excitation, and Chemistry of the Rim, Jets, and Knots of the Planetary Nebula NGC 7009. *Denise R. Goncalves, Romano L. M. Corradi, Antonio Mampaso, & Mario Perinotto.* 597, 975 (2003)

Gondolo, Paolo. Future Type Ia Supernova Data as Tests of Dark Energy from Modified Friedmann Equations. *Yun Wang, Katherine Freese, Paolo Gondolo, & Matthew Lewis.* 594, 25 (2003)

Gonzalez, Anthony H. On the Incidence of Strong Gravitational Lensing by Clusters in the Las Campanas Distant Cluster Survey. *Dennis Zaritsky & Anthony H. Gonzalez.* 584, 691 (2003)

Gonzalez, Guillermo. A Reevaluation of the Super–Lithium-rich Star in NGC 6633. *Chris Laws & Guillermo Gonzalez.* 595, 1148 (2003)

González, J. J. Differences in Carbon and Nitrogen Abundances between Field and Cluster Early-Type Galaxies. *P. Sánchez-Blázquez, J. Gorgas, N. Cardiel, J. Cenarro, & J. J. González.* 590, L91 (2003)

Gonzalez, M. M. See Atkins, R., et al. The High-Energy Gamma-Ray Fluence and Energy Spectrum of GRB 970417A from Observations with Milagrito.

See Atkins, R., et al. Observation of TeV Gamma Rays from the Crab Nebula with Milagro Using a New Background Rejection Technique.

Gonzalez, Marjorie. New Constraints on the Energetics, Progenitor Mass, and Age of the Supernova Remnant G292.0+1.8 Containing PSR J1124−5916. *Marjorie Gonzalez & Samar Safi-Harb.* 583, L91 (2003)

Chandra Detection of the High Magnetic Field Radio Pulsar J1119−6127 in the Supernova Remnant G292.2−0.5. *Marjorie Gonzalez & Samar Safi-Harb.* 591, L143 (2003)

Gonzalez Delgado, Rosa. Detection of a Super–Star Cluster as the Ionizing Source in the Low-Luminosity Active Galactic Nucleus NGC 4303: Erratum (ApJ, 579, 545 [2002]). *Luis Colina, Rosa Gonzalez Delgado, J. Miguel Mas-Hesse, Claus Leitherer, & Elena Jiménez Bailón.* 582, 1269 (2003) (Orig. paper in 579, 545 (2002))

Detection of a Super–Star Cluster as the Ionizing Source in the Low-Luminosity Active Galactic Nucleus NGC 4303: Erratum (ApJ, 582, 1269 [2003]). *Luis Colina, Rosa Gonzalez-Delgado, J. Miguel Mas-Hesse, Claus Leitherer, & Elena Jiménez-Bailón.* 586, 692 (2003) (Orig. paper in 582, 1269 (2003))

González Delgado, Rosa M. Nuclear Activity and Massive Star Formation in the Low-Luminosity Active Galactic Nucleus NGC 4303: *Chandra* X-Ray Observations. *E. Jiménez-Bailón, M. Santos-Lleó, J. M. Mas-Hesse, M. Guainazzi, L. Colina, M. Cerviño, & Rosa M. González Delgado.* 593, 127 (2003)

González-Nuevo, J. Contributions of Point Extragalactic Sources to the Cosmic Microwave Background Bispectrum. *F. Argüeso, J. González-Nuevo, & L. Toffolatti.* 598, 86 (2003)

Gonzalez-Perez, J. M. See Mukadem, Anjum S., et al. Constraining the Evolution of ZZ Ceti.

Gonzalez Serrano, J. I. Decline of the Space Density of Quasars between $z = 2$ and $z = 4$. *M. Vigotti, R. Carballo, C. R. Benn, G. De Zotti, R. Fanti, J. I. Gonzalez Serrano, K.-H. Mack, & J. Holt.* 591, 43 (2003)

Goobar, A. See Knop, R. A., et al. New Constraints on Ω_M, Ω_Λ, and w from an Independent Set of 11 High-Redshift Supernovae Observed with the *Hubble Space Telescope*.

Goode, P. R. Signature of Avalanche in Solar Flares as Measured by Photospheric Magnetic Fields. *V. I. Abramenko, V. B. Yurchyshyn, H. Wang, T. J. Spirock, & P. R. Goode.* 597, 1135 (2003)

Goodman, Alyssa A. The Spectral Correlation Function of Molecular Clouds: A Statistical Test for Theoretical Models. *Paolo Padoan, Alyssa A. Goodman, & Mika Juvela.* 588, 881 (2003)

Goodman, J. A. See Atkins, R., et al. The High-Energy Gamma-Ray Fluence and Energy Spectrum of GRB 970417A from Observations with Milagrito.

See Falcone, A., et al. Observation of GeV Solar Energetic Particles from the 1997 November 6 Event Using Milagrito.

See Atkins, R., et al. Observation of TeV Gamma Rays from the Crab Nebula with Milagro Using a New Background Rejection Technique.

Goodman, Jeremy. Nonaxisymmetric g-Mode and p-Mode Instability in a Hydrodynamic Thin Accretion Disk. *Li-Xin Li, Jeremy Goodman, & Ramesh Narayan.* 593, 980 (2003)

Goodrich, Robert W. See Barth, Aaron J., et al. Optical Spectropolarimetry of the GRB 020813 Afterglow.

Goossens, Marcel. Observational Tests of Damping by Resonant Absorption in Coronal Loop Oscillations. *Markus J. Aschwanden, Richard W. Nightingale, Jesse Andries, Marcel Goossens, & Tom Van Doorsselaere.* 598, 1375 (2003)

GOPAL-KRISHNA. Clear Evidence for Intranight Optical Variability in Radio-quiet Quasars. *Gopal-Krishna, C. S. Stalin, Ram Sagar, & Paul J. Wiita.* 586, L25 (2003)

The Origin of X-shaped Radio Galaxies: Clues from the Z-symmetric Secondary Lobes. *Gopal-Krishna, Peter L. Biermann, & Paul J. Wiita.* 594, L103 (2003)

GOPALSWAMY, N. A New Method for Estimating Widths, Velocities, and Source Location of Halo Coronal Mass Ejections. *G. Michalek, N. Gopalswamy, & S. Yashiro.* 584, 472 (2003)

Prominence Eruptions and Coronal Mass Ejection: A Statistical Study using Microwave Observations. *N. Gopalswamy, M. Shimojo, W. Lu, S. Yashiro, K. Shibasaki, & R. A. Howard.* 586, 562 (2003)

Coronal Mass Ejections and Solar Polarity Reversal. *N. Gopalswamy, A. Lara, S. Yashiro, & R. A. Howard.* 598, L63 (2003)

GORCZYCA, T. W. Assessment of the Fluorescence and Auger Database used in Plasma Modeling. *T. W. Gorczyca, C. N. Kodituwakku, K. T. Korista, O. Zatsarinny, N. R. Badnell, E. Behar, M. H. Chen, & D. W. Savin.* 592, 636 (2003)

See SAVIN, D. W., et al. Dielectronic Recombination of the Fe XXI and Fe XXII via $N = 2 \rightarrow N' = 2$ Core Excitations.

GORDON, K. D. Dust Grain Size Distributions from MRN to MEM. *Geoffrey C. Clayton, Michael J. Wolff, Ulysses J. Sofia, K. D. Gordon, & K. A. Misselt.* 588, 871 (2003)

GORDON, KARL. Small Magellanic Cloud–Type Interstellar Dust in the Milky Way. *Lynne A. Valencic, Geoffrey C. Clayton, Karl Gordon, & Tracy L. Smith.* 598, 369 (2003)

GORDON, KARL D. The Dust in Lyman Break Galaxies. *Uma P. Vijh, Adolph N. Witt, & Karl D. Gordon.* 587, 533 (2003)

See CLAYTON, GEOFFREY C., et al. The Role of Polycyclic Aromatic Hydrocarbons in Ultraviolet Extinction. I. Probing Small Molecular Polycyclic Aromatic Hydrocarbons.

A Quantitative Comparison of Small Magellanic Cloud, Large Magellanic Cloud, and Milky Way Ultraviolet to Near-Infrared Extinction Curves. *Karl D. Gordon, Geoffrey C. Clayton, K. A. Misselt, Arlo U. Landolt, & Michael J. Wolff.* 594, 279 (2003)

GORDON, M. A. The Stellar "Wind" of MWC 349A. *M. A. Gordon.* 589, 953 (2003)

GORDON, V. D. Rotational Spectra of the Nitrogen-Sulfur Carbon NC_nS, $n = 1$–7. *M. C. McCarthy, A. L. Cooksy, S. Mohamed, V. D. Gordon, & P. Thaddeus.* 144, 287 (2003)

GORGAS, J. Differences in Carbon and Nitrogen Abundances between Field and Cluster Early-Type Galaxies. *P. Sánchez-Blázquez, J. Gorgas, N. Cardiel, J. Cenarro, & J. J. González.* 590, L91 (2003)

GORHAM, P. W. See BÖTTCHER, M., et al. Coordinated Multiwavelength Observations of BL Lacertae in 2000.

GORLOVA, N. I. Gravity Indicators in the Near-Infrared Spectra of Brown Dwarfs. *N. I. Gorlova, M. R. Meyer, G. H. Rieke, & J. Liebert.* 593, 1074 (2003)

GOROSABEL, J. See KLOSE, S., et al. The Very Faint *K*-Band Afterglow of GRB 020819 and the Dust Extinction Hypothesis of the Dark Bursts.

See HJORTH, J., et al. Very High Column Density and Small Reddening toward GRB 020124 at $z = 3.20$.

See GREINER, J., et al. GRB 011121: A Collimated Outflow into Wind-blown Surroundings.

GORSKI, KRZYSZTOF M. *COBE* DMR–normalized Dark Energy Cosmogony. *Pia Mukherjee, A. J. Banday, Alain Riazuelo, Krzysztof M. Górski, & Bharat Ratra.* 598, 767 (2003)

GOSS, W. M. The Sizes of OH (1720 MHz) Supernova Remnant Masers: MERLIN and Very Long Baseline Array Observations of IC 443. *I. M. Hoffman, W. M. Goss, C. L. Brogan, M. J. Claussen, & A. M. S. Richards.* 583, 272 (2003)

Variability of Sagittarius A*: Flares at 1 Millimeter. *Jun-Hui Zhao, K. H. Young, R. M. Herrnstein, P. T. P. Ho, T. Tsutsumi, K. Y. Lo, W. M. Goss, & G. C. Bower.* 586, L29 (2003)

Pulsar PSR B0656+14, the Monogem Ring, and the Origin of the "Knee" in the Primary Cosmic-Ray Spectrum. *S. E. Thorsett, R. A. Benjamin, Walter F. Brisken, A. Golden, & W. M. Goss.* 592, L71 (2003)

The Distance and Radius of the Neutron Star PSR B0656+14. *Walter F. Brisken, S. E. Thorsett, A. Golden, & W. M. Goss.* 593, L89 (2003)

The Formaldehyde Masers in NGC 7538 and G29.96−0.02: Very Long Baseline Array, Multielement Radio-linked Interferometer Network, and Very Large Array Observations. *Ian M. Hoffman, W. M. Goss, Patrick Palmer, & A. M. S. Richards.* 598, 1061 (2003)

Phase-Referenced Very Long Baseline Array Observations of OH Masers at 4765 MHz. *Patrick Palmer, W. M. Goss, & K. E. Devine.* 599, 323 (2003)

GOTO, MIWA. X-Ray Properties of Young Stellar Objects in OMC-2 and OMC-3 from the *Chandra X-Ray Observatory*: Erratum (ApJ, 566, 974 [2002]). *Masahiro Tsujimoto, Katsuji Koyama, Yohko Tsuboi, Miwa Goto, & Naoto Kobayashi.* 585, 602 (2003) (Orig. paper in 566, 974 (2002))

Spatially Resolved 3 Micron Spectroscopy of IRAS 22272+5435: Formation and Evolution of Aliphatic Hydrocarbon Dust in Proto–Planetary Nebulae. *Miwa Goto, W. Gaessler, Yutaka Hayano, Masanori Iye, Yukiko Kamata, Tomio Kanzawa, Naoto Kobayashi, Yosuke Minowa, D. J. Saint-Jacques, Hideki Takami, Naruhisa Takato, & Hiroshi Terada.* 589, 419 (2003)

See PYO, TAE-SOO, et al. Adaptive Optics Spectroscopy of the [Fe II] Outflow from DG Tauri.

See IYE, MASANORI, et al. ERO R1 in the Field of Cl 0939+4713: Evidence for an S0-Like Galaxy at $z \sim 1.5$.

Carbon Isotope Ratio in $^{12}CO/^{13}CO$ toward Local Molecular Clouds with Near-Infrared High-Resolution Spectroscopy of Vibrational Transition Bands. *Miwa Goto, Tomomori Usuda, Naruhisa Takato, Masa Hayashi, Seiichi Sakamoto, W. Gaessler, Yutaka Hayano, Masanori Iye, Yukiko Kamata, Tomio Kanzawa, Naoto Kobayashi, Yosuke Minowa, Ko Nedachi, Shin Oya, T.-S. Pyo, D. Saint-Jacques, Hiroshi Suto, Hideki Takami, Hiroshi Terada, & George F. Mitchell.* 598, 1038 (2003)

GOTO, T. See HOPKINS, A. M., et al. Star Formation Rate Indicators in the Sloan Digital Sky Survey.

GOTO, TOMO. See BAHCALL, NETA A., et al. A Merged Catalog of Clusters of Galaxies from Early Sloan Digital Sky Survey Data.

GOTO, TOMOTSUGU. See GOMEZ, PERCY L., et al. Galaxy Star Formation as a Function of Environment in the Early Data Release of the Sloan Digital Sky Survey.

See BAHCALL, NETA A., et al. The Cluster Mass Function from Early Sloan Digital Sky Survey Data: Cosmological Implications.

GOTTHELF, E. V. *Chandra* X-Ray Imaging Spectroscopy of the Young Supernova Remnant Kesteven 75. *David J. Helfand, Benjamin F. Collins, & E. V. Gotthelf.* 582, 783 (2003)

Search for a Point-Source Counterpart of the Unidentified Gamma-Ray Source TeV J2032+4130 in Cygnus. *R. Mukherjee, J. P. Halpern, E. V. Gotthelf, M. Eracleous, & N. Mirabal.* 589, 487 (2003)

X-Ray Spectra of Young Pulsars and Their Wind Nebulae: Dependence on Spin-Down Energy Loss Rate. *E. V. Gotthelf.* 591, 361 (2003)

An X-Ray Image of the Composite Supernova Remnant G16.7+0.1. *David J. Helfand, Marcel A. Agüeros, & E. V. Gotthelf.* 592, 941 (2003)

GOTTHELF, ERIC V. The Pulsar Wind Nebula in G11.2−0.3. *Mallory S. E. Roberts, Cindy R. Tam, Victoria M. Kaspi, Maxim Lyutikov, Gautam Vasisht, Michael Pivovaroff, Eric V. Gotthelf, & Nobuyuki Kawai.* 588, 992 (2003)

GOTTLIEB, C. A. Precise Millimeter-Wave Laboratory Frequences for CS and $C^{34}S$. *C. A. Gottlieb, P. C. Myers, & P. Thaddeus.* 588, 655 (2003)

The Radio Spectrum of the Phenyl Radical. *R. J. McMahon, M. C. McCarthy, C. A. Gottlieb, J. B. Dudek, J. F. Stanton, & P. Thaddeus.* 590, L61 (2003)

GOTTLÖBER, STEFAN. Constrained Simulations of the Real Universe: The Local Supercluster. *Anatoly Klypin, Yehuda Hoffman, Andrey V. Kravtsov, & Stefan Gottlöber.* 596, 19 (2003)

GOUGH, R. A Survey for H_2O Megamasers. III. Monitoring Water Vapor Masers in Active Galaxies. *J. A. Braatz, A. S. Wilson, C. Henkel, R. Gough, & M. Sinclair.* 146, 249 (2003)

GOUKENLEUQUE, CEDRIC. Infrared Observations during the Secondary Eclipse of HD 209458b. I. 3.6 Micron Occultation Spectroscopy Using the Very Large Telescope. *L. Jeremy Richardson, Drake Deming, Guenter Wiedemann, Cedric Goukenleuque, David Steyert, Joseph Harrington, & Larry W. Esposito.* 584, 1053 (2003)

GOULD, A. See FIELDS, DALE L., et al. High-Precision Limb-Darkening Measurement of a K3 Giant Using Microlensing.

See KERINS, E., et al. Theory of Pixel Lensing toward M31. II. The Velocity Anisotropy and Flattening of the MACHO Distribution.

GOULD, ANDREW. Improved Astrometry and Photometry for the Luyten Catalog. I. Bright Stars. *Andrew Gould & Samir Salim.* 582, 1001 (2003)

Improved Astrometry and Photometry for the Luyten Catalog. II. Faint Stars and Revised Catalog. *Samir Salim & Andrew Gould.* 582, 1011 (2003)

Stellar Halo Parameters from 4588 Subdwarfs. *Andrew Gould.* 583, 765 (2003)

Transit Target Selection Using Reduced Proper Motions. *Andrew Gould & Christopher W. Morgan.* 585, 1056 (2003)

Resolving the Microlens Mass Degeneracy for Earth-Mass Planets. *Andrew Gould, B. Scott Gaudi, & Cheongho Han.* 591, L53 (2003)

Early-Type Stars: Most Favorable Targets for Astrometrically Detectable Planets in the Habitable Zone. *Andrew Gould, Eric B. Ford, & Debra A. Fischer.* 591, L155 (2003)

Stellar Contribution to the Galactic Bulge Microlensing Optical Depth. *Cheongho Han & Andrew Gould.* 592, 172 (2003)

Sagittarius A* Companion S0-2: A Probe of Very High Mass Star Formation. *Andrew Gould & Alice C. Quillen.* 592, 935 (2003)

An Upper Limit on the Granularity of the Local Stellar Halo. *Andrew Gould.* 592, L63 (2003)

Sensitivity of Transit Searches to Habitable-Zone Planets. *Andrew Gould, Joshua Pepper, & D. L. DePoy.* 594, 533 (2003)

GOUPELL, JOHNATHAN E. See LENTERS, GEOFFREY T., et al. An Extended Burst Tail from SGR 1900+14 with a Thermal X-Ray Spectrum.

GOVERNATO, FABIO. See NAPOLITANO, NICOLA R., et al. Intracluster Stellar Population Properties from *N*-Body Cosmological Simulations. I. Constraints at $z = 0$.

GOŹDZIEWSKI, KRZYSZTOF. The Janus Head of the HD 12661 Planetary System. *Krzysztof Goździewski & Andrzej J. Maciejewski.* 586, L153 (2003)

Where Is the Second Planet in the HD 160691 Planetary System? *Krzysztof Gozdźiewski, Maciej Konacki, & Andrzej J. Maciejewski.* 594, 1019 (2003)

GRAFF, DAVID S. Angular Radii of Stars via Microlensing. *B. Scott Gaudi, David S. Graff, & Cheongho Han.* 586, 451 (2003)

Formation of Supermassive Black Holes in Galactic Bulges: A Rotating Collapse Model Consistent with the M_{BH}-σ Relation. *Fred C. Adams, David S. Graff, Manasse Mbonye, & Douglas O. Richstone.* 591, 125 (2003)

GRAHAM, ALISTER W. Galactic Bulges from *Hubble Space Telescope* Near-Infrared Camera Multi-Object Spectrometer Observations: The Lack of $r^{1/4}$ Bulges. *Marc Balcells, Alister W. Graham, Lilian Domínguez-Palmero, & Reynier F. Peletier.* 582, L79 (2003)

When Is a Bulge Not a Bulge? Inner Disks Masquerading as Bulges in NGC 2787 and NGC 3945. *Peter Erwin, Juan Carlos Vega Beltrán, Alister W. Graham, & John E. Beckman.* 597, 929 (2003)

GRAHAM, JAMES R. Kinematic Masses of Super–Star Clusters in M82 from High-Resolution Near-Infrared Spectroscopy. *Nate McCrady, Andrea M. Gilbert, & James R. Graham.* 596, 240 (2003)

The Structure of High Strehl Ratio Point-Spread Functions. *Marshall D. Perrin, Anand Sivaramakrishnan, Russell B. Makidon, Ben R. Oppenheimer, & James R. Graham.* 596, 702 (2003)

A Giant Outburst at Millimeter Wavelengths in the Orion Nebula. *Geoffrey C. Bower, Richard L. Plambeck, Alberto Bolatto, Nate McCrady, James R. Graham, Imke de Pater, Michael C. Liu, & Frederick K. Baganoff.* 598, 1140 (2003)

See FIGER, DONALD F., et al. High-Precision Stellar Radial Velocities in the Galactic Center.

GRANDI, P. *BeppoSAX* Observations of Centaurus A: The Hard Continuum and the Iron-Line Feature. *P. Grandi, M. Fiocchi, C. G. Perola, C. M. Urry, L. Maraschi, E. Massaro, G. Matt, A. Preite-Martinez, H. Steinle, & W. Collmar.* 593, 160 (2003)

GRANDI, PAOLA. Detection of X-Ray Emission from the Eastern Radio Lobe of Pictor A. *Paola Grandi, Matteo Guainazzi, Laura Maraschi, Raffaella Morganti, Roberto Fusco-Femiano, Mariateresa Fiocchi, Lucia Ballo, & Fabrizio Tavecchio.* 586, 123 (2003)

GRANOT, JONATHAN. The Mean Number of Extra Microimage Pairs for Macrolensed Quasars. *Jonathan Granot, Paul L. Schechter, & Joachim Wambsganss.* 583, 575 (2003)

High-Energy Emission from the Prompt Gamma-Ray Burst. *Dafne Guetta & Jonathan Granot.* 585, 885 (2003)

The Evolution of a Structured Relativistic Jet and Gamma-Ray Burst Afterglow Light Curves. *Pawan Kumar & Jonathan Granot.* 591, 1075 (2003)

Constraining the Structure of Gamma-Ray Burst Jets through the Afterglow Light Curves. *Jonathan Granot & Pawan Kumar.* 591, 1086 (2003)

Radio Imaging of Gamma-Ray Burst Jets in Nearby Supernovae. *Jonathan Granot & Abraham Loeb.* 593, L81 (2003)

Linear Polarization in Gamma-Ray Bursts: The Case for an Ordered Magnetic Field. *Jonathan Granot & Arieh Königl.* 594, L83 (2003)

The Most Probable Cause for the High Gamma-Ray Polarization in GRB 021206. *Jonathan Granot.* 596, L17 (2003)

Explaining the High-Energy Spectral Component in GRB 941017. *Jonathan Granot & Dafne Guetta.* 598, L11 (2003)

GRANT, C. E. See MARKEVITCH, M., et al. *Chandra* Spectra of the Soft X-Ray Diffuse Background.

GRATTON, R. Accurate Mass Ratio and Heating Effects in the Dual-Line Millisecond Binary Pulsar in NGC 6397. *F. R. Ferraro, E. Sabbi, R. Gratton, A. Possenti, N. D'Amico, A. Bragaglia, & F. Camilo.* 584, L13 (2003)

The Complex Hα Line Profile of the Bright Companion to PSR J1740−5340 in NGC 6397. *E. Sabbi, R. Gratton, F. R. Ferraro, A. Bragaglia, A. Possenti, N. D'Amico, & F. Camilo.* 589, L41 (2003)

GRAUER, ALBERT D. Infrared Observations of Galaxies in the Local Universe. II. 391 Calibrated Images with Photometric and Structural Measurements. *Albert D. Grauer, Marcia J. Rieke, & Alice C. Quillen.* 149, 327 (2003)

GRAV, T. See BERSIER, D., et al. The Strongly Polarized Afterglow of GRB 020405.

See BERSIER, D., et al. The Unusual Optical Afterglow of the Gamma-Ray Burst GRB 021004: Color Changes and Short-Timescale Variability.

GRAV, TOMMY. The Short Rotation Period of Nereid. *Tommy Grav, Matthew J. Holman, & J. J. Kavelaars.* 591, L71 (2003)

GRAY, A. D. Radio Polarization from the Galactic Plane in Cygnus. *B. Uyaniker, T. L. Landecker, A. D. Gray, & R. Kothes.* 585, 785 (2003)

GRAZIANI, C. See CREW, G. B., et al. *HETE-2* Localization and Observation of the Bright, X-Ray–rich Gamma-Ray Burst GRB 021211.

GREASON, M. R. See BENNETT, C. L., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Preliminary Maps and Basic Results.

See HINSHAW, G., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Data Processing Methods and Systematic Errors Limits.

GREATHOUSE, T. K. Propane on Titan. *H. G. Roe, T. K. Greathouse, M. J. Richter, & J. H. Lacy.* 597, L65 (2003)

GREAVES, J. S. See HOLLAND, W. S., et al. Submillimeter Observations of an Asymmetric Dust Disk around Fomalhaut.

GREAVES, JANE S. Magnetic Structure of a Dark Bok Globule. *Jacques P. Vallée, Jane S. Greaves, & Jason D. Fiege.* 588, 910 (2003)

GREBEL, E. K. A Search for Ionized Gas in the Draco and Ursa Minor Dwarf Spheroidal Galaxies. *J. S. Gallagher, G. J. Madsen, R. J. Reynolds, E. K. Grebel, & T. A. Smecker-Hane.* 588, 326 (2003)

GREBEL, EVA K. See HELMI, AMINA, et al. Selection of Metal-poor Giant Stars Using the Sloan Digital Sky Survey Photometric System.

Draco: A Failure of the Tidal Model. *Ralf S. Klessen, Eva K. Grebel, & Daniel Harbeck.* 589, 798 (2003)

Discovery of Eight New Extremely Metal-poor Galaxies in the Sloan Digital Sky Survey. *Alexei Y. Kniazev, Eva K. Grebel, Lei Hao, Michael A. Strauss, Jonathan Brinkmann, & Masataka Fukugita.* 593, L73 (2003)

See NEWBERG, HEIDI JO, et al. Sagittarius Tidal Debris 90 kiloparsecs from the Galactic Center.

See PRADA, FRANCISCO, et al. Observing the Dark Matter Density Profile of Isolated Galaxies.

GRECHNEV, V. V. Quasi-periodic Pulsations in a Solar Microwave Burst. *V. V. Grechnev, S. M. White, & M. R. Kundu.* 588, 1163 (2003)

GREEN, A. J. Fitting Together the H I Absorption and Emission in the Southern Galactic Plane Survey. *John M. Dickey, N. M. McClure-Griffiths, B. M. Gaensler, & A. J. Green.* 585, 801 (2003)

Loops, Drips, and Walls in the Galactic Chimney GSH 277+00+36. *N. M. McClure-Griffiths, John M. Dickey, B. M. Gaensler, & A. J. Green.* 594, 833 (2003)

A Neutral Hydrogen Self-Absorption Cloud in the Southern Galactic Plane Survey. *D. W. Kavars, J. M. Dickey, N. M. McClure-Griffiths, B. M. Gaensler, & A. J. Green.* 598, 1048 (2003)

GREEN, DANIEL. Scattered Light from Close-in Extrasolar Planets: Prospects of Detection with the *MOST* Satellite. *Daniel Green, Jaymie Matthews, Sara Seager, & Rainer Kuschnig.* 597, 590 (2003)

GREEN, E. M. Discovery of a New Class of Pulsating Stars: Gravity-Mode Pulsators among Subdwarf B Stars. *E. M. Green, G. Fontaine, M. D. Reed, K. Callerame, I. R. Seitenzahl, B. A. White, E. A. Hyde, R. Østensen, O. Cordes, P. Brassard, S. Falter, E. J. Jeffery, S. Dreizler, S. L. Schuh, M. Giovanni, H. Edelmann, J. Rigby, & A. Bronowska.* 583, L31 (2003)

A Driving Mechanism for the Newly Discovered Long-Period Pulsating Subdwarf B Stars. *G. Fontaine, P. Brassard, S. Charpinet, E. M. Green, P. Chayer, M. Billères, & S. K. Randall.* 597, 518 (2003)

GREEN, ELIZABETH M. Blue Horizontal-Branch Stars in Old, Metal-rich Stellar Systems. *Ruth C. Peterson, Bruce W. Carney, Ben Dorman, Elizabeth M. Green, Wayne Landsman, James Liebert, Robert W. O'Connell, & Robert T. Rood.* 588, 299 (2003)

GREEN, J. C. See WAKKER, B. P., et al. The *Far Ultraviolet Spectroscopic Explorer* Survey of O VI Absorption in and near the Galaxy.

GREEN, J. T. Does Tiny-Scale Atomic Structure Exist in the Interstellar Medium? *S. Stanimirović, J. M. Weisberg, A. Hedden, K. E. Devine, & J. T. Green.* 598, L23 (2003)

GREEN, P. See MARKEVITCH, M., et al. *Chandra* Spectra of the Soft X-Ray Diffuse Background.

GREEN, PAUL J. Lens or Binary? *Chandra* Observations of the Wide-Separation Broad Absorption Line Quasar Pair UM 425. *Thomas L. Aldcroft & Paul J. Green.* 592, 710 (2003)

GREEN, R. F. See WAKKER, B. P., et al. The *Far Ultraviolet Spectroscopic Explorer* Survey of O VI Absorption in and near the Galaxy.

GREEN, RICHARD. See GEBHARDT, KARL, et al. Axisymmetric Dynamical Models of the Central Regions of Galaxies.

See PINKNEY, JASON, et al. Kinematics of 10 Early-Type Galaxies from *Hubble Space Telescope* and Ground-based Spectroscopy.

GREENE, T. P. Astrophysics of Young Star Binaries. *L. Prato, T. P. Greene, & M. Simon.* 584, 853 (2003)

GREENHILL, J. See FIELDS, DALE L., et al. High-Precision Limb-Darkening Measurement of a K3 Giant Using Microlensing.

GREENHILL, L. J. The Discovery of H_2O Maser Emission in Seven Active Galactic Nuclei and at High Velocities in the Circinus Galaxy. *L. J. Greenhill, P. T. Kondrakto, J. E. J. Lovell, T. B. H. Kuiper, J. M. Moran, D. L. Jauncey, & G. P. Baines.* 582, L11 (2003)

A Warped Accretion Disk and Wide-Angle Outflow in the Inner Parsec of the Circinus Galaxy. *L. J. Greenhill, R. S. Booth, S. P. Ellingsen, J. R. Herrnstein, D. L. Jauncey, P. M. McCulloch, J. M. Moran, R. P. Norris, J. E. Reynolds, & A. K. Tzioumis.* 590, 162 (2003)

GREENHILL, LINCOLN J. Simultaneous *Chandra* and *Rossi X-Ray Timing Explorer* Observations of the Nearby Bright Seyfert 2 Galaxy NGC 4945. *Chris Done, Greg M. Madejski, Piotr T. Zycki, & Lincoln J. Greenhill.* 588, 763 (2003)

GREGARIO-HETEM, JANE. Optical Polarization and Near-Infrared Photometry of the Proto–Planetary Nebula Henize 3-1475. *Claudia V. Rodrigues, Francisco J. Jablonski, Jane Gregario-Hetem, Gabriel R. Hickel, & Marilia J. Sartori.* 587, 312 (2003)

GREINER, J. The 590 Day Long-Term Periodicity of the Microquasar GRS 1915+105. *A. Rau, J. Greiner, & M. L. McCollough.* 590, L37 (2003)

See KLOSE, S., et al. The Very Faint *K*-Band Afterglow of GRB 020819 and the Dust Extinction Hypothesis of the Dark Bursts.

GRB 011121: A Collimated Outflow into Wind-blown Surroundings. *J. Greiner, S. Klose, M. Salvato, A. Zeh, R. Schwarz, D. H. Hartmann, N. Masetti, B. Stecklum, G. Lamer, N. Lodieu, R. D. Scholz, C. Sterken, J. Gorosabel, I. Burud, J. Rhoads, I. Mitrofanov, M. Litvak, A. Sanin, V. Grinkov, M. I. Andersen, J. M. Castro Cerón, A. J. Castro-Tirado, A. Fruchter, J. U. Fynbo, J. Hjorth, L. Kaper, C. Kouveliotou, E. Palazzi, E. Pian, E. Rol, N. R. Tanvir, P. M. Vreeswijk, R. A. M. J. Wijers, & E. van den Heuvel.* 599, 1223 (2003)

GREINER, JOCHEN. *Chandra* Studies of the X-Ray Point Source Luminosity Functions of M31. *Albert K. H. Kong, Rosanne DiStefano, Michael R. Garcia, & Jochen Greiner.* 585, 298 (2003)

An *XMM-Newton* Observation of Nova LMC 1995: A Bright Supersoft X-Ray Source. *Marina Orio, Wouter Hartmann, Martin Still, & Jochen Greiner.* 594, 435 (2003)

GRENIER, I. A. Variability of EGRET Gamma-Ray Sources. *P. L. Nolan, W. F. Tompkins, I. A. Grenier, & P. F. Michelson.* 597, 615 (2003)

GRENON, MICHEL. Detailed Analysis of Nearby Bulgelike Dwarf Stars. III. α-Element and Heavy-Element Abundances. *Luciana Pompéia, Beatriz Barbuy, & Michel Grenon.* 592, 1173 (2003)

GRETHER, DANIEL. What Fraction of Sun-like Stars Have Planets? *Charles H. Lineweaver & Daniel Grether.* 598, 1350 (2003)

GREVE, T. R. See NERI, R., et al. Interferometric Observations of Powerful CO Emission from Three Submillimeter Galaxies at $z = 2.39$, 2.51, and 3.35.

GREVE, THOMAS R. Gas and Dust in the Extremely Red Object ERO J164502+4626.4. *Thomas R. Greve, Rob J. Ivison, & Padeli P. Papadopoulos.* 599, 839 (2003)

GRIESER, M. See SAVIN, D. W., et al. Dielectronic Recombination of the Fe XXI and Fe XXII via $N = 2 \rightarrow N' = 2$ Core Excitations.

GRIEST, K. See ALCOCK, C., et al. The MACHO Project Large Magellanic Cloud Variable Star Inventory. XI. Frequency Analysis of the Fundamental Mode RR Lyrae Stars.

GRIFFIN, G. S. See NOVAK, G., et al. First Results from the Submillimeter Polarimeter for Antarctic Remote Observations: Evidence of Large-Scale Toroidal Magnetic Fields in the Galactic Center.

GRIFFIN, R. F. The Nature of Overluminous F Stars Observed in a Radial-Velocity Survey. *R. F. Griffin & A. A. Suchkov.* 147, 103 (2003)

GRIFFITH, C. A. High-Resolution 3 Micron Spectroscopy of Molecules in the Mesosphere and Troposphere of Titan. *T. R. Geballe, S. J. Kim, K. S. Noll, & C. A. Griffith.* 583, L39 (2003)

GRIFFITHS, R. E. *XMM-Newton* Observation of Broad Iron Kα Emission from Seyfert 1.9 Galaxy MCG −5-23-16. *G. C. Dewangan, R. E. Griffiths, & N. J. Schurch.* 592, 52 (2003)

See MARKOWITZ, A., et al. X-Ray Fluctuation Power Spectral Densities of Seyfert 1 Galaxies.

GRIFFITHS, RICHARD E. *Chandra* ACIS-S Observations of Three Quasars with Low-Redshift Damped Lyα Absorption: Constraints on the Cosmic Neutral Gas-Phase Metallicity at Redshift $z \approx 0.4$. *David A. Turnshek, Sandhya M. Rao, Andrew F. Ptak, Richard E. Griffiths, & Eric M. Monier.* 590, 730 (2003)

Cosmic Gravitational Shear from the *Hubble Space Telescope* Medium Deep Survey. *Stefano Casertano, Kavan U. Ratnatunga, & Richard E. Griffiths.* 598, L71 (2003)

GRILLMAIR, CARL. See GEBHARDT, KARL, et al. Axisymmetric Dynamical Models of the Central Regions of Galaxies.

GRIMES, JENNIFER A. The Submillimeter Properties of Broad Absorption Line Quasars. *Chris J. Willot, Steve Rawlings, & Jennifer A. Grimes.* 598, 909 (2003)

GRINDLAY, J. E. X-Ray Studies of Two Neutron Stars in 47 Tucanae: Toward Constraints on the Equation of State. *C. O. Heinke, J. E. Grindlay, D. A. Lloyd, & P. D. Edmonds.* 588, 452 (2003)

A *Chandra* X-Ray Study of the Dense Globular Cluster Terzan 5. *C. O. Heinke, P. D. Edmonds, J. E. Grindlay, D. A. Lloyd, H. N. Cohn, & P. M. Lugger.* 590, 809 (2003)

X-Ray Dip Monitoring of XB 1916−053. *T. Narita, J. E. Grindlay, P. F. Bloser, & Y. Chou.* 593, 1007 (2003)

Analysis of the Quiescent Low-Mass X-Ray Binary Populaton in Galactic Globular Clusters. *C. O. Heinke, J. E. Grindlay, P. M. Lugger, H. N. Cohn, P. D. Edmonds, D. A. Lloyd, & A. M. Cool.* 598, 501 (2003)

A *Chandra* X-Ray Study of the Globular Cluster M80. *C. O. Heinke, J. E. Grindlay, P. M. Lugger, H. N. Cohn, P. D. Edmonds, D. A. Lloyd, & S. S. Murray.* 598, 516 (2003)

GRINDLAY, JONATHAN. See BECKER, WERNER, et al. *Chandra X-Ray Observatory* Observations of the Globular Cluster M28 and Its Millisecond Pulsar PSR 1821−24.

GRINDLAY, JONATHAN E. An Extensive Census of *Hubble Space Telescope* Counterparts to *Chandra* X-Ray Sources in the Globular Cluster 47 Tucanae. I. Astrometry and Photometry. *Peter D. Edmonds, Ronald L. Gilliland, Craig O. Heinke, & Jonathan E. Grindlay.* 596, 1177 (2003)

An Extensive Census of *Hubble Space Telescope* Counterparts to *Chandra* X-Ray Sources in the Globular Cluster 47 Tucanae. II. Time Series and Analysis. *Peter D. Edmonds, Ronald L. Gilliland, Craig O. Heinke, & Jonathan E. Grindlay.* 596, 1197 (2003)

GRINKOV, V. See GREINER, J., et al. GRB 011121: A Collimated Outflow into Wind-blown Surroundings.

GRISHKO, V. I. Infrared Absorption Spectra of Deuterated Amorphous Carbon. *V. I. Grishko & W. W. Duley.* 583, L43 (2003)

GROGAN, KEITH. Resonant Structure in the Kuiper Disk: An Asymmetric Plutino Disk. *Elizabeth K. Holmes, Stanley F. Dermott, Bo Å. S. Gustafson, & Keith Grogan.* 597, 1211 (2003)

GROGIN, N. A. *Hubble Space Telescope* Imaging in the *Chandra* Deep Field–South. III. Quantitative Morphology of the 1 Million Second *Chandra* Counterparts and Comparison with the Field Population. *N. A. Grogin, A. M. Koekemoer, E. J. Schreier, J. Bergeron, R. Giacconi, G. Hasinger, L. Kewley, C. Norman, P. Rosati, P. Tozzi, & A. Zirm.* 595, 685 (2003)

GRONER, PETER. Trans-Ethyl Methyl Ether: Assignments and Predictions up to 400 GHz for the Vibrational-Torsional Ground State. *Ulrike Fuchs, Gisbert Winnewisser, Peter Groner, Frank C. De Lucia, & Eric Herbst.* 144, 277 (2003)

GRONWALL, C. See TRAN, H. D., et al. Advanced Camera for Surveys Observations of Young Star Clusters in the Interacting Galaxy UGC 10214.

See BOUWENS, R. J., et al. Star Formation at $z \sim 6$: i-Dropouts in the Advanced Camera for Surveys Guaranteed Time Observation Fields.

See MEURER, GERHARDT R., et al. The Discovery of Globular Clusters in the Protospiral Galaxy NGC 2915: Implications for Hierarchical Galaxy Evolution.

GRONWALL, CARYL. See BLAKESLEE, JOHN P., et al. Discovery of Two Distant Type Ia Supernovae in the Hubble Deep Field–North with the Advanced Camera for Surveys.

See BLAKESLEE, JOHN P., et al. Advanced Camera for Surveys Photometry of the Cluster RDCS 1252.9−2927: The Color-Magnitude Relation at $z = 1.24$.

GROOM, D. E. See KNOP, R. A., et al. New Constraints on Ω_M, Ω_Λ, and w from an Independent Set of 11 High-Redshift Supernovae Observed with the *Hubble Space Telescope*.

GROSSI, MARCO. See PRITZL, BARTON J., et al. Anomalous Evolution of the Dwarf Galaxy HIPASS J1321−31.

GROSSO, N. Spatial Study with the Very Large Telescope of a New Resolved Edge-on Circumstellar Dust Disk Discovered at the Periphery of the ρ Ophiuchi Dark Cloud. *N. Grosso, J. Alves, K. Wood, R. Neuhäuser, T. Montmerle, & J. E. Bjorkman.* 586, 296 (2003)

GROVES, B. A. Internal Dust Correction Factors for Star Formation Rates Derived for Dusty H II Regions and Starburst Galaxies. *M. A. Dopita, B. A. Groves, R. S. Sutherland, & L. J. Kewley.* 583, 727 (2003)

GRUBER, DUANE. *Rossi X-Ray Timing Explorer* Observations of A2256. *Yoel Rephaeli & Duane Gruber.* 595, 137 (2003)

GRUENDL, ROBERT A. Diffuse X-Ray Emission from the Quiescent Superbubble M17, the Omega Nebula. *Bryan C. Dunne, You-Hua Chu, C.-H. Rosie Chen, Justin D. Lowry, Leisa Townsley, Robert A. Gruendl, Martín A. Guerrero, & Margarita Rosado.* 590, 306 (2003)

Hot Gas in the Circumstellar Bubble S308. *You-Hua Chu, Martín A. Guerrero, Robert A. Gruendl, Guillermo García-Segura, & Heinrich J. Wendker.* 599, 1189 (2003)

GRUENWALD, RUTH. Ultraviolet Continuum, Physical Conditions, and Filling Factor in Active Galactic Nuclei. *Lucimara P. Martins, Sueli M. Viegas, & Ruth Gruenwald.* 587, 562 (2003)

Ultraviolet Continuum, Physical Conditions and Filling Factor in Active Galactic Nuclei: Erratum (ApJ, 587, 562 [2003]). *Lucimara P. Martins, Sueli M. Viegas, & Ruth Gruenwald.* 592, 1264 (2003) (Orig. paper in 587, 562 (2003))

GRUPE, D. Follow-Up *Hubble Space Telescope*/Space Telescope Imaging Spectroscopy of Three Candidate Tidal Disruption Events. *S. Gezari, J. P. Halpern, S. Komossa, D. Grupe, & K. M. Leighly.* 592, 42 (2003)

GRY, C. *Far Ultraviolet Spectroscopic Explorer* Survey of the Local Interstellar Medium within 200 Parsecs. *N. Lehner, E. B. Jenkins, C. Gry, H. W. Moos, P. Chayer, & S. Lacour.* 595, 858 (2003)

GSELL, V. J. SPINR—a Wide-Field Ultraviolet Spectral Imaging System. *T. A. Cook, V. J. Gsell, J. Golub, & S. Chakrabarti.* 585, 1177 (2003)

GU, M. F. Indirect X-Ray Line-Formation Processes in Iron L-Shell Ions. *M. F. Gu.* 582, 1241 (2003)

Radiative Recombination Rate Coefficients for Bare through F-like Isosequences of Mg, Si, S, Ar, Ca, Fe, and Ni. *M. F. Gu.* 589, 1085 (2003)

Dielectronic Recombination Rate Coefficients for H-Like through Ne-Like Isosequences of Mg, Si, S, Ar, Ca, Fe, and Ni. *M. F. Gu.* 590, 1131 (2003)

See SAVIN, D. W., et al. Dielectronic Recombination of the Fe XXI and Fe XXII via $N = 2 \rightarrow N' = 2$ Core Excitations.

Recombination X-Ray Line Formation of Iron L-Shell Ions in Low Temperature Plasmas. *M. F. Gu.* 593, 1249 (2003)

GU, MING FENG. Slow Temperature Equilibration behind the Shock Front of SN 1006. *Jacco Vink, J. Martin Laming, Ming Feng Gu, Andrew Rasmussen, & Jelle S. Kaastra.* 587, L31 (2003)

GU, PIN-GAO. The Effect of Tidal Inflation Instability on the Mass and Dynamical Evolution of Extrasolar Planets with Ultrashort Periods. *Pin-Gao Gu, Douglas N. C. Lin, & Peter H. Bodenheimer.* 588, 509 (2003)

GUAINAZZI, M. Nuclear Activity and Massive Star Formation in the Low-Luminosity Active Galactic Nucleus NGC 4303: *Chandra* X-Ray Observations. *E. Jiménez-Bailón, M. Santos-Lleó, J. M. Mas-Hesse, M. Guainazzi, L. Colina, M. Cerviño, & Rosa M. González Delgado.* 593, 127 (2003)

GUAINAZZI, MATTEO. Detection of X-Ray Emission from the Eastern Radio Lobe of Pictor A. *Paola Grandi, Matteo Guainazzi, Laura Maraschi, Raffaella Morganti, Roberto Fusco-Femiano, Mariateresa Fiocchi, Lucia Ballo, & Fabrizio Tavecchio.* 586, 123 (2003)

GUDIPATI, MURTHY S. Luminescence from Vacuum-Ultraviolet–irradiated Cosmic Ice Analogs and Residues. *Murthy S. Gudipati, Jason P. Dworkin, Xavier D.F. Chillier, & Louis J. Allamandola.* 583, 514 (2003)

Facile Generation and Storage of Polycyclic Aromatic Hydrocarbon Ions in Astrophysical Ices. *Murthy S. Gudipati & Louis J. Allamandola.* 596, L195 (2003)

GÜDEL, MANUEL. Are Coronae of Magnetically Active Stars Heated by Flares? II. Extreme Ultraviolet and X-Ray Flare Statistics and the Differential Emission Measure Distribution. *Manuel Güdel, Marc Audard, Vinay L. Kashyap, Jeremy J. Drake, & Edward F. Guinan.* 582, 423 (2003)

Separating the X-Ray Emissions of UV Ceti A and B with *Chandra*. *Marc Audard, Manuel Güdel, & Stephen L. Skinner.* 589, 983 (2003)

GUENTHER, D. B. Global Parameter and Helioseismic Tests of Solar Variability Models. *L. H. Li, S. Basu, S. Sofia, F. J. Robinson, P. Demarque, & D. B. Guenther.* 591, 1267 (2003)

GÜRKAN, M. A. Monte Carlo Simulations of Globular Cluster Evolution. III. Primordial Binary Interactions. *J. M. Fregeau, M. A. Gürkan, K. J. Joshi, & F. A. Rasio.* 593, 772 (2003)

GUERRERO, MARTÍN A. Extraordinary Diffuse Light in Hickson Compact Group 90. *P. M. White, G. Bothun, Martín A. Guerrero, Michael J. West, & Wayne A. Barkhouse.* 585, 739 (2003)

Diffuse X-Ray Emission from the Quiescent Superbubble M17, the Omega Nebula. *Bryan C. Dunne, You-Hua Chu, C.-H. Rosie Chen, Justin D. Lowry, Leisa Townsley, Robert A. Gruendl, Martín A. Guerrero, & Margarita Rosado.* 590, 306 (2003)

Hot Gas in the Circumstellar Bubble S308. *You-Hua Chu, Martín A. Guerrero, Robert A. Gruendl, Guillermo García-Segura, & Heinrich J. Wendker.* 599, 1189 (2003)

GUETTA, DAFNE. Precursor Plerionic Activity and High-Energy Gamma-Ray Emission in the Supranova Model of Gamma-Ray Bursts. *Susumu Inoe, Dafne Guetta, & Franco Pacini.* 583, 379 (2003)

High-Energy Emission from the Prompt Gamma-Ray Burst. *Dafne Guetta & Jonathan Granot.* 585, 885 (2003)

On the Generation of Ultra–High-Energy Cosmic Rays in Gamma-Ray Bursts: A Reappraisal. *Mario Vietri, Daniel De Marco, & Dafne Guetta.* 592, 378 (2003)

Explaining the High-Energy Spectral Component in GRB 941017. *Jonathan Granot & Dafne Guetta.* 598, L11 (2003)

GUHATHAKURTA, PURAGRA. See MADGWICK, DARREN S., et al. The DEEP2 Galaxy Redshift Survey: Spectral Classification of Galaxies at $z \sim 1$.

GUIDORZI, C. See PRICE, P. A., et al. Discovery of GRB 020405 and Its Late Red Bump.

See WOODS, P. M., et al. The 2001 April Burst Activation of SGR 1900+14: Pulse Properties and Torque.

GUIDRY, M. W. A New $^{17}F(p, \gamma)^{18}Ne$ Reaction Rate and Its Implications for Nova Nucleosynthesis. *S. Parete-Koon, W. R. Hix, M. S. Smith, S. Starrfield, D. W. Bardayan, M. W. Guidry, & A. Mezzacappa.* 598, 1239 (2003)

GUILLOTEAU, STÉPHANE. Spatially Resolved Millimeter Interferometry of SMM J02399−0136: A Very Massive Galaxy at $z = 2.8$. *Reinhard Genzel, Andrew J. Baker, Linda J. Tacconi, Dieter Lutz, Pierre Cox, Stéphane Guilloteau, & Alain Omont.* 584, 633 (2003)

GUINAN, E. F. Fundamental Properties and Distances of Large Magellanic Cloud Eclipsing Binaries. IV. HV 5936. *E. L. Fitzpatrick, I. Ribas, E. F. Guinan, F. P. Maloney, & A. Claret.* 587, 685 (2003)

Intrinsic Properties of the Young Stellar Object SU Aurigae. *L. E. DeWarf, J. F. Sepinsky, E. F. Guinan, I. Ribas, & I. Nadalin.* 590, 357 (2003)

Atmospheric Loss of Exoplanets Resulting from Stellar X-Ray and Extreme-Ultraviolet Heating. *H. Lammer, F. Selsis, I. Ribas, E. F. Guinan, S. J. Bauer, & W. W. Weiss.* 598, L121 (2003)

GUINAN, EDWARD F. Are Coronae of Magnetically Active Stars Heated by Flares? II. Extreme Ultraviolet and X-Ray Flare Statistics and the Differential Emission Measure Distribution. *Manuel Güdel, Marc*

Audard, Vinay L. Kashyap, Jeremy J. Drake, & Edward F. Guinan. 582, 423 (2003)

Far-Ultraviolet Emissions of the Sun in Time: Probing Solar Magnetic Activity and Effects on Evolution of Paleoplanetary Atmospheres. *Edward F. Guinan, Ignasi Ribas, & Graham M. Harper.* 594, 561 (2003)

GULL, T. Revisited Abundance Diagnostics in Quasars: Fe II/Mg II Ratios. *E. Verner, F. Bruhweiler, D. Verner, S. Johansson, & T. Gull.* 592, L59 (2003)

GULL, THEODORE R. Latitude-dependent Effects in the Stellar Wind of η Carinae. *Nathan Smith, Kris Davidson, Theodore R. Gull, Kazunori Ishibashi, & D. John Hillier.* 586, 432 (2003)

GUNDERSEN, JOSHUA O. An Instrument for Investigating the Large Angular Scale Polarization of the Cosmic Microwave Background. *Brian G. Keating, Christopher W. O'Dell, Joshua O. Gundersen, Lucio Piccirillo, Nate C. Stebor, & Peter T. Timbie.* 144, 1 (2003)

GUNJI, S. See ENOMOTO, R., et al. Search for TeV Gamma Rays from SN 1987A in 2001.

GUNN, ALASTAIR. See HAWLEY, SUZANNE L., et al. Multiwavelength Observations of Flares on AD Leonis.

GUNN, JAMES. See BAHCALL, NETA A., et al. The Cluster Mass Function from Early Sloan Digital Sky Survey Data: Cosmological Implications.

GUNN, JAMES E. See HOGG, DAVID W., et al. The Overdensities of Galaxy Environments as a Function of Luminosity and Color.

See EISENSTEIN, DANIEL J., et al. Average Spectra of Massive Galaxies in the Sloan Digital Sky Survey.

See HELMI, AMINA, et al. Selection of Metal-poor Giant Stars Using the Sloan Digital Sky Survey Photometric System.

See SZALAY, ALEXANDER S., et al. Karhunen-Loève Estimation of the Power Spectrum Parameters from the Angular Distribution of Galaxies in Early Sloan Digital Sky Survey Data.

See BLANTON, MICHAEL R., et al. The Broadband Optical Properties of Galaxies with Redshifts $0.02 < z < 0.22$.

See BUDAVÁRI, TAMÁS, et al. Angular Clustering with Photometric Redshifts in the Sloan Digital Sky Survey: Bimodality in the Clustering Properties of Galaxies.

See BAHCALL, NETA A., et al. A Merged Catalog of Clusters of Galaxies from Early Sloan Digital Sky Survey Data.

The Richness-dependent Cluster Correlation Function: Early Sloan Digital Sky Survey Data. *Neta A. Bahcall, Feng Dong, Lei Hao, Paul Bode, Jim Annis, James E. Gunn, & Donald P. Schneider.* 599, 814 (2003)

GUO, H. W. See AMENOMORI, M., et al. Multi-TeV Gamma-Ray Flares from Markarian 421 in 2000 and 2001 Observed with the Tibet Air Shower Array.

GUPTA, GAURAV. The SN 1006 Remnant: Optical Proper Motions, Deep Imaging, Distance, and Brightness at Maximum. *P. Frank Winkler, Gaurav Gupta, & Knox S. Long.* 585, 324 (2003)

GUPTA, Y. Understanding the Radio Emission Geometry of Multiple-Component Radio Pulsars from Retardation and Aberration Effects. *Y. Gupta & R. T. Gangadhara.* 584, 418 (2003)

GURMAN, JOSEPH B. See NAGATA, SHIN'ICHI, et al. Spatial and Temporal Properties of Hot and Cool Coronal Loops.

GUSTAFSON, BO Å. S. Resonant Structure in the Kuiper Disk: An Asymmetric Plutino Disk. *Elizabeth K. Holmes, Stanley F. Dermott, Bo Å. S. Gustafson, & Keith Grogan.* 597, 1211 (2003)

GUTERMUTH, ROBERT. The Compact H II Region S88B: Excitation and Extinction. *Jennifer A. Goetz, Robert Gutermuth, Judith L. Pipher, William J. Forrest, & Eric M. Howard.* 599, 1173 (2003)

GUZIK, J. A. See MUKADEM, ANJUM S., et al. Constraining the Evolution of ZZ Ceti.

GUZIK, JOYCE A. A Theoretical γ Doradus Instability Strip. *Phillip B. Warner, Anthony B. Kaye, & Joyce A. Guzik.* 593, 1049 (2003)

GUZMÁN, R. Stellar Masses of Luminous Compact Blue Galaxies at Redshifts $z = 0.4$–1.2. *R. Guzmán, G. Östlin, D. Kunth, M. A. Bershady, D. C. Koo, & M. A. Pahre.* 586, L45 (2003)

GUZMÁN, RAFAEL. K_s Number Counts in the Groth and Coppi Fields. *David Cristóbal-Hornillos, Marc Balcells, Mercedes Prieto, Rafael Guzmán, Jesús Gallego, Nicolás Cardiel, Ángel Serrano, & Roser Pelló.* 595, 71 (2003)

GWINN, CARL. Scintillations and Lévy Flights through the Interstellar Medium. *Stanislav Boldyrev & Carl Gwinn.* 584, 791 (2003)

GWINNER, G. See SAVIN, D. W., et al. Dielectronic Recombination of the Fe XXI and Fe XXII via $N = 2 \rightarrow N' = 2$ Core Excitations.

GYUK, GEZA. Event Rates and Timescale Distributions from Realistic Microlensing Models of M31. *Edward A. Baltz, Geza Gyuk, & Arlin Crotts.* 582, 30 (2003)

HAARDT, FRANCESCO. The Assembly and Merging of Supermassive Black Holes in Hierarchical Models of Galaxy Formation. *Marta Volonteri, Francesco Haardt, & Piero Madau.* 582, 559 (2003)

The Formation of Galaxy Stellar Cores by the Hierarchical Merging of Supermassive Black Holes. *Marta Volonteri, Piero Madau, & Francesco Haardt.* 593, 661 (2003)

HAAS, MARTIN. Hot Dust in Radio-loud Active Galactic Nuclei. *Wolfram Freudling, Ralf Siebenmorgen, & Martin Haas.* 599, L13 (2003)

HABA, Y. X-Ray–Extreme Ultraviolet Simultaneous Observations of NGC 5548: Fast Extreme Ultraviolet Dip without X-Ray Variation. *Y. Haba, H. Kunieda, K. Misaki, Y. Terashima, J. S. Kaastra, R. Mewe, A. C. Fabian, & K. Iwasawa.* 599, 949 (2003)

HABARA, HIDETA. Laboratory Spectrum of the 1_{11}–2_{02} Rotational Transition of CH_2. *Ernest A. Michael, Frank Lewen, Gisbert Winnewisser, Hiroyuki Ozeki, Hideta Habara, & Eric Herbst.* 596, 1356 (2003)

HABBAL, FERAS. See HABBAL, SHADIA RIFAI, et al. On the Detection of the Signature of Silicon Nanoparticle Dust Grains in Coronal Holes.

HABBAL, SHADIA RIFAI. On the Detection of the Signature of Silicon Nanoparticle Dust Grains in Coronal Holes. *Shadia Rifai Habbal, Martina Belz Arndt, Munir H. Nayfeh, Jean Arnaud, Judd Johnson, Steve Hegwer, Richard Woo, Alexandru Ene, & Feras Habbal.* 592, L87 (2003)

Coronal Loops Heated by Turbulence-driven Alfvén Waves. *Xing Li & Shadia Rifai Habbal.* 598, L125 (2003)

HABE, ASAO. Cluster Morphology as a Test of Different Cosmological Models. *Tamon Suwa, Asao Habe, Kohji Yoshikawa, & Takashi Okamoto.* 588, 7 (2003)

HABERL, FRANK. The Bursting Behavior of 4U 1728−34: The Parameters of a Neutron Star and the Geometry of a Neutron Star–Disk System. *Nickolai Shaposhnikov, Lev Titarchuk, & Frank Haberl.* 593, L35 (2003)

HACHISU, IZUMI. Revised Analysis of the Supersoft X-Ray Phase, Helium Enrichment, and Turnoff Time in the 2000 Outburst of the Recurrent Nova CI Aquilae. *Izumi Hachisu, Mariko Kato, & Bradley E. Schaefer.* 584, 1008 (2003)

High-Velocity Jets in Recurrent Nova Outbursts. *Mariko Kato & Izumi Hachisu.* 587, L39 (2003)

A New Clue to the Transition Mechanism between Optical High and Low States of the Supersoft X-Ray Source RX J0513.9−6951, Implied from the Recurrent Nova CI Aquilae 2000 Outburst Model. *Izumi Hachisu & Mariko Kato.* 588, 1003 (2003)

RX J0513.9−6951: The First Example of Accretion Wind Evolution, a Key Evolutionary Process to Type Ia Supernovae. *Izumi Hachisu & Mariko Kato.* 590, 445 (2003)

Evolution of Rotating Accreting White Dwarfs and the Diversity of Type Ia Supernovae. *Tatsuhiro Uenishi, Ken'ichi Nomoto, & Izumi Hachisu.* 595, 1094 (2003)

A Limit Cycle Model for Long-Term Optical Variations of V Sagittae: The Second Example of Accretion Wind Evolution. *Izumi Hachisu & Mariko Kato.* 598, 527 (2003)

V445 Puppis: Helium Nova on a Massive White Dwarf. *Mariko Kato & Izumi Hachisu.* 598, L107 (2003)

HAFFNER, L. M. The Wisconsin Hα Mapper Northern Sky Survey. *L. M. Haffner, R. J. Reynolds, S. L. Tufte, G. J. Madsen, K. P. Jaehnig, & J. W. Percival.* 149, 405 (2003)

HAGENAAR, HERMANCE J. The Properties of Small Magnetic Regions on the Solar Surface and the Implications for the Solar Dynamo(s). *Hermance J. Hagenaar, Carolus J. Schrijver, & Alan M. Title.* 584, 1107 (2003)

HAGEN-THORN, V. A. See BÖTTCHER, M., et al. Coordinated Multiwavelength Observations of BL Lacertae in 2000.

HAGHIGHIPOUR, NADER. On Pressure Gradients and Rapid Migration of Solids in a Nonuniform Solar Nebula: Erratum (ApJ, 583, 996 [2003]). *Nader Haghighipour & Alan P. Boss.* 586, 1442 (2003) (Orig. paper in 583, 996 (2003))

Stable 1:2 Resonant Periodic Orbits in Elliptic Three-Body Systems. *Nader Haghighipour, Jocelyn Couetdic, Ferenc Varadi, & William B. Moore.* 596, 1332 (2003)

On Gas Drag–Induced Rapid Migration of Solids in a Nonuniform Solar Nebula. *Nader Haghighipour & Alan P. Boss.* 598, 1301 (2003)

HAGLIN, DAVID J. How Sample Completeness Affects Gamma-Ray Burst Classification. *Jon Hakkila, Timothy W. Giblin, Richard J. Roiger,*

David J. Haglin, William S. Paciesas, & Charles A. Meegan. 582, 320 (2003)

Hahn, J. Ground-based Near-Infrared Imaging of the HD 141569 Circumstellar Disk. *A. Boccaletti, J.-C. Augereau, F. Marchis, & J. Hahn.* 585, 494 (2003)

Hahn, Joseph M. The Secular Evolution of the Primordial Kuiper Belt. *Joseph M. Hahn.* 595, 531 (2003)

Hahn, Michael. Detection of a Taylor-like Plasma Relaxation Process in the Sun. *Dibyendu Nandy, Michael Hahn, Richard C. Canfield, & Dana W. Longcope.* 597, L73 (2003)

Haiman, Zoltan. Probing the Reionization History of the Universe using the Cosmic Microwave Background Polarization. *Manoj Kaplinghat, Mike Chu, Zoltan Haiman, Gilbert P. Holder, Lloyd Knox, & Constantinos Skordis.* 583, 24 (2003)

Predictions for the Counts of Faint, High-Redshift Galaxies in the Mid-Infrared. *Zoltán Haiman, David N. Spergel, & Edwin L. Turner.* 585, 630 (2003)

The Reionization History at High Redshifts. I. Physical Models and New Constraints from Cosmic Microwave Background Polarization. *Zoltán Haiman & Gilbert P. Holder.* 595, 1 (2003)

The Reionization History at High Redshifts. II. Estimating the Optical Depth to Thomson Scattering from Cosmic Microwave Background Polarization. *Gilbert P. Holder, Zoltán Haiman, Manoj Kaplinghat, & Lloyd Knox.* 595, 13 (2003)

The Thermal Memory of Reionization History. *Lam Hui & Zoltán Haiman.* 596, 9 (2003)

Small-Scale Cosmic Microwave Background Temperature and Polarization Anisotropies due to Patchy Reionization. *Mário G. Santos, Asantha Cooray, Zoltán Haiman, Lloyd Knox, & Chung-Pei Ma.* 598, 756 (2003)

Haines, T. J. See Atkins, R., et al. The High-Energy Gamma-Ray Fluence and Energy Spectrum of GRB 970417A from Observations with Milagrito.

See Falcone, A., et al. Observation of GeV Solar Energetic Particles from the 1997 November 6 Event Using Milagrito.

See Atkins, R., et al. Observation of TeV Gamma Rays from the Crab Nebula with Milagro Using a New Background Rejection Technique.

Hairapetyan, M. V. Gravitational Radiation from Pulsating White Dwarfs. *M. Benacquista, D. M. Sedrakian, M. V. Hairapetyan, K. M. Shahabasyan, & A. A. Sadoyan.* 596, L223 (2003)

Hajian, Amir. Inhomogeneities in the Microwave Background Radiation Interpreted within the Framework of the Quasi–Steady State Cosmology. *J. V. Narlikar, R. G. Vishwakarma, Amir Hajian, Tarun Souradeep, G. Burbridge, & F. Hoyle.* 585, 1 (2003)

Measuring the Statistical Isotropy of the Cosmic Microwave Background Anisotropy. *Amir Hajian & Tarun Souradeep.* 597, L5 (2003)

Hakkila, Jon. How Sample Completeness Affects Gamma-Ray Burst Classification. *Jon Hakkila, Timothy W. Giblin, Richard J. Roiger, David J. Haglin, William S. Paciesas, & Charles A. Meegan.* 582, 320 (2003)

Hale, D. D. S. Interferometry on Mira in the Mid-Infrared: Cyclic Variability of the Continuum Diameter and the Effect of Spectral Lines on Apparent Size. *J. Weiner, D. D. S. Hale, & C. H. Townes.* 588, 1064 (2003)

Asymptotic Giant Branch and Supergiant Stellar Diameters in the Mid-Infrared. *J. Weiner, D. D. S. Hale, & C. H. Townes.* 589, 976 (2003)

Hall, J. See Holder, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.

See de la Calle Pérez, I., et al. Search for High-Energy Gamma Rays from an X-Ray–Selected Blazar Sample.

Hall, Pat. Gemini-South + FLAMINGOS Demonstration Science: Near-IR Spectroscopy of the $z = 5.77$ Quasar SDSS J083643.85+005453.3. *Daniel Stern, Pat Hall, L. Felipe Barrientos, Andrew J. Bunker, Richard Elston, M. J. Ledlow, S. Nicholas Raines, & Jon Willis.* 596, L39 (2003)

Hall, Patrick B. See Szkody, Paula, et al. Two Rare Magnetic Cataclysmic Variables with Extreme Cyclotron Features Identified in the Sloan Digital Sky Survey.

The Incidence of Strong-Lensing Clusters in the Red-Sequence Cluster Survey. *Michael D. Gladders, Henk Hoekstra, H. K. C. Yee, Patrick B. Hall, & L. Felipe Barrientos.* 593, 48 (2003)

VLT+UVES Spectroscopy of the Ca II Low-Ionization Broad Absorption Line Quasar SDSS J030000.56+004828.0. *Patrick B. Hall, Damien Hutsmékers, Scott F. Anderson, J. Brinkmann, Xiaohui Fan, Donald P. Schneider, & Donald G. York.* 593, 189 (2003)

See Schmidt, Gary D., et al. Magnetic White Dwarfs from the Sloan Digital Sky Survey: The First Data Release.

Mass and Dust in the Disk of a Spiral Lens Galaxy. *Joshua N. Winn, Patrick B. Hall, & Paul L. Schechter.* 597, 672 (2003)

Hall, T. A. See Holder, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.

Search for TeV Emissions from Pulsars in Binary Systems. *T. A. Hall, I. H. Bond, S. M. Bradbury, J. H. Buckley, M. J. Carson, D. A. Carter-Lewis, M. Catanese, S. Dunlea, M. D'Vali, D. J. Fegan, S. J. Fegan, J. P. Finley, J. A. Gaidos, G. H. Gillanders, A. M. Hillas, D. Horan, M. Kertzman, D. Kieda, J. Kildea, J. Knapp, F. Krennrich, M. J. Lang, S. LeBohec, R. Lessard, J. Lloyd-Evans, B. McKernan, P. Moriarty, D. Muller, R. Ong, J. Quinn, P. T. Reynolds, H. J. Rose, G. H. Sembroski, S. P. Swordy, V. V. Vassiliev, & T. C. Weekes.* 583, 853 (2003)

See de la Calle Pérez, I., et al. Search for High-Energy Gamma Rays from an X-Ray–Selected Blazar Sample.

Hallgren, A. See Ahrens, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

Halliday, A. N. The Predictable Collateral Consequences of Nucleosynthesis by Spallation Reactions in the Early Solar System. *I. Leya, A. N. Halliday, & R. Wieler.* 594, 605 (2003)

Hallman, Eric. Cosmological Shock Waves and Their Role in the Large-Scale Structure of the Universe. *Dongsu Ryu, Hyesung Kang, Eric Hallman, & T. W. Jones.* 593, 599 (2003)

Halpern, J. P. See Price, P. A., et al. GRB 010921: Strong Limits on an Underlying Supernova from the *Hubble Space Telescope*.

An *Extreme Ultraviolet Explorer* Atlas of Seyfert Galaxy Light Curves: Search for Periodicity. *J. P. Halpern, K. M. Leighly, & H. L. Marshall.* 585, 665 (2003)

High-Resolution Grating Spectroscopy of GRB 020405 with the *Chandra* Low Energy Transmission Grating Spectrometer. *N. Mirabal, F. Paerels, & J. P. Halpern.* 587, 128 (2003)

Search for a Point-Source Counterpart of the Unidentified Gamma-Ray Source TeV J2032+4130 in Cygnus. *R. Mukherjee, J. P. Halpern, E. V. Gotthelf, M. Eracleous, & N. Mirabal.* 589, 487 (2003)

Follow-Up *Hubble Space Telescope*/Space Telescope Imaging Spectroscopy of Three Candidate Tidal Disruption Events. *S. Gezari, J. P. Halpern, S. Komossa, D. Grupe, & K. M. Leighly.* 592, 42 (2003)

See Mirabal, N., et al. GRB 021004: A Possible Shell Nebula around a Wolf-Rayet Star Gamma-Ray Burst Progenitor.

Optical Pulse-Phased Photopolarimetry of PSR B0656+14. *B. Kern, C. Martin, B. Mazin, & J. P. Halpern.* 597, 1049 (2003)

Halpern, Jules P. The *ASCA* X-Ray Spectrum of Arp 102B and Evaluation of Simple Models for Its Associated, Metastable Fe II Absorber. *Michael Eracleous, Jules P. Halpern, & Jane C. Charlton.* 582, 633 (2003)

See Storchi-Bergmann, Thaisa, et al. Evolution of the Nuclear Accretion Disk Emission in NGC 1097: Getting Closer to the Black Hole.

Completion of a Survey and Detailed Study of Double-peaked Emission Lines in Radio-loud Active Galactic Nuclei. *Michael Eracleous & Jules P. Halpern.* 599, 886 (2003)

Halpern, M. See Bennett, C. L., et al. The *Microwave Anisotropy Probe* Mission.

See Page, L., et al. The Optical Design and Characterization of the *Microwave Anisotropy Probe*.

See Jarosik, N., et al. Design, Implementation, and Testing of the *Microwave Anisotropy Probe* Radiometers.

See Bennett, C. L., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Preliminary Maps and Basic Results.

See Jarosik, N., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: On-Orbit Radiometer Characterization.

See Page, L., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Beam Profiles and Window Functions.

See Barnes, C., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Galactic Signal Contamination from Sidelobe Pickup.

See Hinshaw, G., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Data Processing Methods and Systematic Errors Limits.

See Bennett, C. L., et al. First-Year *Wilkinson Microwave Anisotrophy Probe* (*WMAP*) Observations: Foreground Emission.

See Komatsu, E., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Tests of Gaussianity.

See Hinshaw, G., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: The Angular Power Spectrum.

See KOGUT, A., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Temperature-Polarization Correlation.

See SPERGEL, D. N., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Determination of Cosmological Parameters.

See VERDE, L., et al. First-Year *Wilkinson Microwave Anisotrophy Probe* (*WMAP*) Observations: Parameter Estimation Methodology.

See PEIRIS, H. V., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Implications for Inflation.

See PAGE, L., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Interpretation of the TT and TE Angular Power Spectrum Peaks.

HALVERSON, N. W. See MASON, B. S., et al. The Anisotropy of the Microwave Background to $l = 3500$: Deep Field Observatons with the Cosmic Background Imager.

See PEARSON, T. J., et al. The Anisotropy of the Microwave Background to $l = 3500$: Mosaic Observations with the Cosmic Background Imager.

HALZEN, F. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

HAMABE, M. See SHIMASAKU, K., et al. Subaru Deep Survey. IV. Discovery of a Large-Scale Structure at Redshift $\simeq 5$.

HAMABE, MASARU. See OUCHI, MASAMI, et al. Subaru Deep Survey. II. Luminosity Functions and Clustering Properties of Lyα Emitters at $z = 4.86$ in the Subaru Deep Field.

See KOMIYAMA, YUTAKA, et al. Discovery of Latent Star Formation in the Extended H I Gas around the Local Group Dwarf Irregular Galaxy NGC 6822.

See HAMANA, TAKASHI, et al. Cosmic Shear Statistics in the Suprime-Cam 2.1 Square Degree Field: Constraints on Ω_m and Σ_8.

HAMANA, TAKASHI. Cosmic Shear Statistics in the Suprime-Cam 2.1 Square Degree Field: Constraints on Ω_m and Σ_8. *Takashi Hamana, Satoshi Miyazaki, Kazuhiro Shimasaku, Hisanori Furusawa, Mamoru Doi, Masaru Hamabe, Katsumi Imi, Masahiko Kimura, Yutaka Komiyama, Fumiaki Nakata, Norio Okada, Sadanori Okamura, Masami Ouchi, Maki Sekiguchi, Masafumi Yagi, & Naoki Yasuda.* 597, 98 (2003)

HAMANN, F. The Mass of Quasar Broad Emission Line Regions. *J. A. Baldwin, G. J. Ferland, K. T. Korista, F. Hamann, & M. Dietrich.* 582, 590 (2003)

Chemical Abundances in Broad Emission Line Regions: The "Nitrogen-loud" Quasi-Stellar Object Q0353−383. *J. A. Baldwin, F. Hamann, K. T. Korista, G. J. Ferland, M. Dietrich, & C. Warner.* 583, 649 (2003)

Quasar Elemental Abundances at High Redshifts. *M. Dietrich, F. Hamann, J. C. Shields, A. Constantin, J. Heidt, K. Jäger, M. Vestergaard, & S. J. Wagner.* 589, 722 (2003)

Fe II/Mg II Emission-Line Ratio in High-Redshift Quasars. *M. Dietrich, F. Hamann, I. Appenzeller, & M. Vestergaard.* 596, 817 (2003)

HAMANN, FRED. See BECHTOLD, JILL, et al. *Chandra* Survey of Radio-quiet, High-Redshift Quasars.

The Nature of the Ultraviolet/X-Ray Absorber in PG 2302+029. *Bassem M. Sabra, Fred Hamann, Buell T. Jannuzi, Ian M. George, & Joseph C. Shields.* 590, 66 (2003)

A Relation between Supermassive Black Hole Mass and Quasar Metallicity? *Craig Warner, Fred Hamann, & Matthias Dietrich.* 596, 72 (2003)

HAMANN, FREDERICK W. See GABEL, JACK R., et al. The Ionized Gas and Nuclear Environment in NGC 3783. II. Averaged *Hubble Space Telescope*/STIS and *Far Ultraviolet Spectroscopic Explorer* Spectra.

See GABEL, JACK R., et al. The Ionized Gas and Nuclear Environment in NGC 3783. III. Detection of a Decreasing Radial Velocity in an Intrinsic Ultraviolet Absorber.

See NETZER, HAGAI, et al. The Ionized Gas and Nuclear Environment in NGC 3783. IV. Variability and Modeling of the 900 Kilosecond *Chandra* Spectrum.

HAMILTON, CATRINA M. Natural Coronagraphics Observations of the Eclipsing T Tauri System KH 15D: Evidence of Accretion and Bipolar Outflow in a Weak-Line T Tauri Star. *Catrina M. Hamilton, William Herbst, Reinhard Mundt, Coryn A. L. Bailer-Jones, & Christopher M. Johns-Krull.* 591, L45 (2003)

HAMILTON, P. Constraints on Active Region Coronal Heating. *S. K. Antiochos, J. T. Karpen, E. E. DeLuca, L. Golub, & P. Hamilton.* 590, 547 (2003)

HAMMETT, GREGORY W. Transition from Collisionless to Collisional Magnetorotational Instability. *Prateek Sharma, Gregory W. Hammett, & Eliot Quataert.* 596, 1121 (2003)

HAMPSON, G. A. Mitigation of Radar Interference in *L*-Band Radio Astronomy. *S. W. Ellingson & G. A. Hampson.* 147, 167 (2003)

HAMUY, MARIO. Observed and Physical Properties of Core-Collapse Supernovae. *Mario Hamuy.* 582, 905 (2003)

See MATHESON, T., et al. Photometry and Spectroscopy of GRB 030329 and Its Associated Supernova 2003dh: The First Two Months.

HAN, CHEONGHO. Angular Radii of Stars via Microlensing. *B. Scott Gaudi, David S. Graff, & Cheongho Han.* 586, 451 (2003)

Probing Structures of Distant Extrasolar Planets with Microlensing. *B. Scott Gaudi, Heon-Young Chang, & Cheongho Han.* 586, 527 (2003)

Resolving the Microlens Mass Degeneracy for Earth-Mass Planets. *Andrew Gould, B. Scott Gaudi, & Cheongho Han.* 591, L53 (2003)

Stellar Contribution to the Galactic Bulge Microlensing Optical Depth. *Cheongho Han & Andrew Gould.* 592, 172 (2003)

Probing the Spatial Distribution of Extrasolar Planets with Gravitational Microlensing. *Cheongho Han & Young Woon Kang.* 596, 1320 (2003)

Signs of Planetary Microlensing Signals. *Cheongho Han & Kyongae Chang.* 597, 1070 (2003)

HANAKOA, Y. Hα Impact Polarization Observed in a Gradual Flare. *Y. Hanakoa.* 596, 1347 (2003)

HANAWA, TOMOYUKI. A Fast Algorithm for Solving the Poisson Equation on a Nested Grid. *Tomoaki Matsumoto & Tomoyuki Hanawa.* 583, 296 (2003)

Fragmentation of a Molecular Cloud Core versus Fragmentation of the Massive Protoplanetary Disk in the Main Accretion Phase. *Tomoaki Matsumoto & Tomoyuki Hanawa.* 595, 913 (2003)

HANCOCK, T. The Impact of Ionizing Stars on the Diffuse Interstellar Medium: A Swept-Up Shell and Ionized Halo around the W4 Chimney/Superbubble. *S. Terebey, M. Fich, R. Taylor, Y. Cao, & T. Hancock.* 590, 906 (2003)

HANDLER, G. See MUKADEM, ANJUM S., et al. Constraining the Evolution of ZZ Ceti.

HANES, D. A. Substructure in the Andromeda Galaxy Globular Cluster System. *K. M. Perrett, D. A. Stiff, D. A. Hanes, & T. J. Bridges.* 589, 790 (2003)

HANNESTAD, STEEN. The Density Profile of Cluster-Scale Dark Matter Halos. *Håkon Dahle, Steen Hannestad, & Jesper Sommer-Larsen.* 588, L73 (2003)

HANSEN, BRAD M. S. Type Ia Supernovae and High-Velocity White Dwarfs. *Brad M. S. Hansen.* 582, 915 (2003)

Helium-Core White Dwarfs in Globular Clusters. *Brad M. S. Hansen, Vassiliki Kalogera, & Frederic A. Rasio.* 586, 1364 (2003)

The Need for a Second Black Hole at the Galactic Center. *Brad M. S. Hansen & Miloš Milosavljević.* 593, L77 (2003)

HANSEN, BRADLEY M. S. "Weather" Variability of Close-in Extrasolar Giant Planets. *Kristen Menou, James Y-K. Cho, Sara Seager, & Bradley M. S. Hansen.* 587, L113 (2003)

The Changing Face of the Extrasolar Giant Planet HD 209458b. *Kristen Menou, James Y-K. Cho, Bradley M. S. Hansen, & Sara Seager.* 587, L117 (2003)

HANSEN, KATHRYN H. Cool Companions to White Dwarfs from the Two Micron All-Sky Survey Second Incremental Data Release. *Stefanie Wachter, D. W. Hoard, Kathryn H. Hansen, Rebecca E. Wilcox, Hilda M. Taylor, & Steven L. Finkelstein.* 586, 1356 (2003)

HANSEN, SARAH. See BAHCALL, NETA A., et al. The Cluster Mass Function from Early Sloan Digital Sky Survey Data: Cosmological Implications.

See BAHCALL, NETA A., et al. A Merged Catalog of Clusters of Galaxies from Early Sloan Digital Sky Survey Data.

HANSEN, STEEN H. The Origin of Cores and Density Profiles of Gaseous Baryonic Structures. *Steen H. Hansen & Joachim Stadel.* 595, L37 (2003)

HANSON, K. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

HANSON, M. M. Two Molecular Clouds near M17. *T. L. Wilson, M. M. Hanson, & D. Muders.* 590, 895 (2003)

A Study of Cygni OB2: Pointing the Way toward Finding Our Galaxy's Super–Star Clusters. *M. M. Hanson.* 597, 957 (2003)

HANSON, ROBERT B. The Distances to Open Clusters from Main-Sequence Fitting. I. New Models and a Comparison with the Properties of the Hyades Eclipsing Binary VB 22. *Marc H. Pinsonneault, Donald M. Terndrup, Robert B. Hanson, & John R. Stauffer.* 598, 588 (2003)

HANSTEEN, V. See BOGDAN, T. J., et al. Waves in the Magnetized Solar Atmosphere. II. Waves from Localized Sources in Magnetic Flux Concentrations.

HANSTEEN, VIGGO H. Helium Abundance in the Corona and Solar Wind: Gyrotropic Modeling from the Chromosphere to 1 AU. *Øystein Lie-Svendsen, Viggo H. Hansteen, & Egil Leer.* 596, 621 (2003)

HAO, LEI. Discovery of Eight New Extremely Metal-poor Galaxies in the Sloan Digital Sky Survey. *Alexei Y. Kniazev, Eva K. Grebel, Lei Hao, Michael A. Strauss, Jonathan Brinkmann, & Masataka Fukugita.* 593, L73 (2003)

The Richness-dependent Cluster Correlation Function: Early Sloan Digital Sky Survey Data. *Neta A. Bahcall, Feng Dong, Lei Hao, Paul Bode, Jim Annis, James E. Gunn, & Donald P. Schneider.* 599, 814 (2003)

HARA, H. Variation of X-Ray Bright Point Number over the Solar Activity Cycle. *H. Hara & K. Nakakubo-Marimoto.* 589, 1062 (2003)

HARA, HIROHISA. See NAGATA, SHIN'ICHI, et al. Spatial and Temporal Properties of Hot and Cool Coronal Loops.

HARA, S. See ENOMOTO, R., et al. Search for TeV Gamma Rays from SN 1987A in 2001.

HARA, T. See ENOMOTO, R., et al. Search for TeV Gamma Rays from SN 1987A in 2001.

HARBECK, DANIEL. See HELMI, AMINA, et al. Selection of Metal-poor Giant Stars Using the Sloan Digital Sky Survey Photometric System.

Draco: A Failure of the Tidal Model. *Ralf S. Klessen, Eva K. Grebel, & Daniel Harbeck.* 589, 798 (2003)

HARDCASTLE, M. J. X-Ray Emission from the Hot Interstellar Medium and Southwest Radio Lobe of the Nearby Radio Galaxy Centaurus A. *R. P. Kraft, S. E. Vázquez, W. R. Forman, C. Jones, S. S. Murray, M. J. Hardcastle, D. M. Worrall, & E. Churazov.* 592, 129 (2003)

Radio and X-Ray Observations of the Jet in Centaurus A. *M. J. Hardcastle, D. M. Worrall, R. P. Kraft, W. R. Forman, C. Jones, & S. S. Murray.* 593, 169 (2003)

HARDEE, P. Particle Acceleration in Relativistic Jets due to Weibel Instability. *K.-I. Nishikawa, P. Hardee, G. Richardson, R. Preece, H. Sol, & G. J. Fishman.* 595, 555 (2003)

HARDEE, PHILIP E. The Effect of External Winds on Relativistic Jets. *Philip E. Hardee & Philip A. Hughes.* 583, 116 (2003)

Modeling Helical Structures in Relativistic Jets. *Philip E. Hardee.* 597, 798 (2003)

HARDIN, D. See KNOP, R. A., et al. New Constraints on Ω_M, Ω_Λ, and w from an Independent Set of 11 High-Redshift Supernovae Observed with the *Hubble Space Telescope*.

HARDING, A. K. High-Energy Neutrinos from Magnetars. *Bing Zhang, Z. G. Dai, P. Mészáros, E. Waxman, & A. K. Harding.* 595, 346 (2003)

HARDING, ALICE K. Extended Acceleration in Slot Gaps and Pulsar High-Energy Emission. *Alex G. Muslimov & Alice K. Harding.* 588, 430 (2003)

Electrodynamics of an Outer Gap Accelerator: Formation of a Soft Power-Law Spectrum between 100 MeV and 3 GeV. *Kouichi Hirotani, Alice K. Harding, & Shinpei Shibata.* 591, 334 (2003)

HARDING, P. See STANEK, K. Z., et al. Spectroscopic Discovery of the Supernova 2003dh Associated with GRB 030329.

See MATHESON, T., et al. Photometry and Spectroscopy of GRB 03029 and Its Associated Supernova 2003dh: The First Two Months.

HARDING, PAUL. Andromeda VIII: A New Tidally Distorted Satellite of M31. *Heather L. Morrison, Paul Harding, Denise Hurley-Keller, & George Jacoby.* 596, L183 (2003)

HARDTKE, R. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

HARDY, G. See COLAVITA, M., et al. Observations of DG Tauri with the Keck Interferometer.

HARDY, IAN M. Catching NGC 4051 in the Low State with *Chandra*. *Philip Uttley, Antonella Fruscione, Ian M. Hardy, & Georg Lamer.* 595, 656 (2003)

HARFORD, A. GAYLER. See GNEDIN, NICKOLAY Y., et al. Linear Gas Dynamics in the Expanding Universe.

Lyman Break Galaxies and Reionization of the Universe. *A. Gayler Harford & Nickolay Y. Gnedin.* 597, 74 (2003)

HARKO, T. Surface Photon Emissivity of Bare Strange Stars. *K. S. Cheng & T. Harko.* 596, 451 (2003)

HARNDEN, F. R., JR. *Chandra* X-Ray Observation of the Orion Nebula Cluster. I. Detection, Identification, and Determination of X-Ray Luminosities. *E. Flaccomio, F. Damiani, G. Micela, S. Sciortino, F. R. Harnden, Jr., S. S. Murray, & S. J. Wolk.* 582, 382 (2003)

Chandra X-Ray Observation of the Orion Nebula Cluster. II. Relationship between X-Ray Activity Indicators and Stellar Parameters. *E. Flaccomio, F. Damiani, G. Micela, S. Sciortino, F. R. Harnden, Jr., S. S. Murray, & S. J. Wolk.* 582, 398 (2003)

Chandra Observations of the Young Open Cluster NGC 2516. *F. Damiani, E. Flaccomio, G. Micela, S. Sciortino, F. R. Harnden, Jr., S. S. Murray, S. J. Wolk, & R. D. Jeffries.* 588, 1009 (2003)

HARO-CORZO, SINHUE. Technique for Detecting Warm-Hot Intergalactic Gas in Quasar Ultraviolet Spectra. *Luc Binette, Mario Rodríguez-Martínez, Sinhue Haro-Corzo, & Isidro Ballinas.* 590, 58 (2003)

HARPER, GRAHAM M. Space Telescope Imaging Spectrograph Survey of Far-Ultraviolet Coronal Forbidden Lines in Late-Type Stars. *Thomas R. Ayres, Alexander Brown, Graham M. Harper, Rachel A. Osten, Jeffrey L. Linsky, Brian E. Wood, & Seth Redfield.* 583, 963 (2003)

Far-Ultraviolet Emissions of the Sun in Time: Probing Solar Magnetic Activity and Effects on Evolution of Paleoplanetary Atmospheres. *Edward F. Guinan, Ignasi Ribas, & Graham M. Harper.* 594, 561 (2003)

Buried Alive in the Coronal Graveyard. *Thomas R. Ayres, Alexander Brown, & Graham M. Harper.* 598, 610 (2003)

HARRA, L. The Long-Term Evolution of AR 7978: The Scalings of the Coronal Plasma Parameters with the Mean Photospheric Magnetic Field. *L. van Driel-Gesztelyi, P. Démoulin, C. H. Mandrini, L. Harra, & J. A. Klimchuk.* 586, 579 (2003)

The Long-Term Evolution of AR 7978: Testing Coronal Heating Models. *P. Démoulin, L. van Driel-Gesztelyi, C. H. Mandrini, J. A. Klimchuk, & L. Harra.* 586, 592 (2003)

HARRA, LOUISE K. Imaging and Spectroscopic Investigations of a Solar Coronal Wave: Properties of the Wave Front and Associated Erupting Material. *Louise K. Harra & Alphonse C. Sterling.* 587, 429 (2003)

Evidence of Flaring in a Transequatorial Loop on the Sun. *Louise K. Harra, Sarah A. Matthews, & Lidia van Driel-Gesztelyi.* 598, L59 (2003)

HARRINGTON, JOSEPH. Infrared Observations during the Secondary Eclipse of HD 209458b. I. 3.6 Micron Occultation Spectroscopy Using the Very Large Telescope. *L. Jeremy Richardson, Drake Deming, Guenter Wiedemann, Cedric Goukenleuque, David Steyert, Joseph Harrington, & Larry W. Esposito.* 584, 1053 (2003)

HARRIS, ANDREW I. Central Mass Concentration and Bar Dissolution in Nearby Spiral Galaxies. *Mousumi Das, Peter J. Teuben, Stuart N. Vogel, Michael W. Regan, Kartik Sheth, Andrew I. Harris, & William H. Jefferys.* 582, 190 (2003)

A ^{12}CO Map of M82: The Significance of Warm Molecular Gas. *John S. Ward, Jonas Zmuidzinas, Andrew I. Harris, & Kate G. Isaak.* 587, 171 (2003)

HARRIS, D. See MARKEVITCH, M., et al. *Chandra* Temperature Map of A754 and Constraints on Thermal Conduction.

HARRIS, D. E. Flaring X-Ray Emission from HST-1, a Knot in the M87 Jet. *D. E. Harris, J. A. Biretta, W. Junor, E. S. Perlman, W. B. Sparks, & A. S. Wilson.* 586, L41 (2003)

Month-Timescale Optical Variability in the M87 Jet. *Eric S. Perlman, D. E. Harris, John A. Biretta, William B. Sparks, & F. Duccio Macchetto.* 599, L65 (2003)

HARRIS, HUGH. See SZKODY, PAULA, et al. Two Rare Magnetic Cataclysmic Variables with Extreme Cyclotron Features Identified in the Sloan Digital Sky Survey.

HARRIS, HUGH C. See SCHMIDT, GARY D., et al. Magnetic White Dwarfs from the Sloan Digital Sky Survey: The First Data Release.

HARRIS, W. E. X-Ray Point Sources in the Sombrero Galaxy: Supersoft Sources, the Globular Cluster/Low-Mass X-Ray Binary Connection, and an Overview. *R. DiStefano, A. K. H. Kong, M. L. VanDalfsen, W. E. Harris, S. S. Murray, & K. M. Delain.* 599, 1067 (2003)

HARRISON, F. A. See PRICE, P. A., et al. GRB 010921: Strong Limits on an Underlying Supernova from the *Hubble Space Telescope*.

Keck Spectroscopy and *Hubble Space Telescope* Imaging of GRB 000926: Probing a Host Galaxy at $z = 2.038$. *S. Castro, T. J. Galama, F. A. Harrison, J. A. Holtzman, J. S. Bloom, S. G. Djorgovski, & S. R. Kulkarni.* 586, 128 (2003)

See FOX, D. W., et al. Discovery of Early Optical Emission from GRB 021211.

See GALAMA, T. J., et al. *Hubble Space Telescope* and Ground-based Optical and Ultraviolet Observations of GRB 010222.

See PRICE, P. A., et al. Discovery of GRB 020405 and Its Late Red Bump.

See FRAIL, D. A., et al. The Broadband Afterglow of GRB 980703.

A Study of the Afterglows of Four Gamma-Ray Bursts: Constraining the Explosion and Fireball Model. *S. A. Yost, F. A. Harrison, R. Sari, & D. A. Frail.* 597, 459 (2003)

HARRISON, FIONA A. The Serendipitous Extragalactic X-Ray Source Identification Program. I. Characteristics of the Hard X-Ray Sample. *Fiona A. Harrison, Megan E. Eckart, Peter H. Mao, David J. Helfand, & Daniel Stern.* 596, 944 (2003)

HARRISON, T. E. Does M15 Possess an Intermediate-Mass Black Hole in Its Core? *B. J. McNamara, T. E. Harrison, & J. Anderson.* 595, 187 (2003)

HARRISON, THOMAS E. GRO J0422+32: The Lowest Mass Black Hole? *Dawn M. Gelino & Thomas E. Harrison.* 599, 1254 (2003)

HARSHMAN, K. See PRICE, P. A., et al. Discovery of GRB 020405 and Its Late Red Bump.

HARTIG, G. See TRAN, H. D., et al. Advanced Camera for Surveys Observations of Young Star Clusters in the Interacting Galaxy UGC 10214.

HARTIG, G. F. See BOUWENS, R. J., et al. Star Formation at $z \sim 6$: *i*-Dropouts in the Advanced Camera for Surveys Guaranteed Time Observation Fields.

See BLAKESLEE, JOHN P., et al. Advanced Camera for Surveys Photometry of the Cluster RDCS 1252.9−2927: The Color-Magnitude Relation at $z = 1.24$.

See MEURER, GERHARDT R., et al. The Discovery of Globular Clusters in the Protospiral Galaxy NGC 2915: Implications for Hierarchical Galaxy Evolution.

HARTIG, GEORGE F. See BLAKESLEE, JOHN P., et al. Discovery of Two Distant Type Ia Supernovae in the Hubble Deep Field–North with the Advanced Camera for Surveys.

HARTIGAN, PATRICK. A Spectroscopic Survey of Subarcsecond Binaries in the Taurus-Auriga Dark Cloud with the *Hubble Space Telescope*. *Patrick Hartigan & Scott J. Kenyon.* 583, 334 (2003)

HARTMANN, D. H. How Massive Single Stars End Their Life. *A. Heger, C. L. Fryer, S. E. Woosley, N. Langer, & D. H. Hartmann.* 591, 288 (2003)

See KLOSE, S., et al. The Very Faint *K*-Band Afterglow of GRB 020819 and the Dust Extinction Hypothesis of the Dark Bursts.

See GREINER, J., et al. GRB 011121: A Collimated Outflow into Wind-blown Surroundings.

HARTMANN, DAP. CH, CO, and $E(B-V)$ as Molecular Gas Tracers in a Translucent Cloud. *Loris Magnani, Raymond J. Chastain, Hyekyung Clarisse Kim, Dap Hartmann, Anthony T. Truong, & Patrick Thaddeus.* 586, 1111 (2003)

HARTMANN, L. Stellar Outflows Driven by Magnetized Wide-Angle Winds. *T. A. Gardiner, A. Frank, & L. Hartmann.* 582, 269 (2003)

HARTMANN, LEE. Comments on Inferences of Star Formation Histories and Birth Lines. *Lee Hartmann.* 585, 398 (2003)

A Comprehensive Study of the L1551 IRS 5 Binary System. *Mayra Osorio, Paolo D'Alessio, James Muzerolle, Nuria Calvet, & Lee Hartmann.* 586, 1148 (2003)

New Low-Mass Members of the Taurus Star-forming Region. *K. L. Luhman, Cesar Briceno, John R. Stauffer, Lee Hartmann, D. Barrado y Navascues, & Nelson Caldwell.* 590, 348 (2003)

The Spatial Distribution of Fluorescent H_2 Emission near T Tauri. *José Saucedo, Nuria Calvet, Lee Hartmann, & John Raymond.* 591, 275 (2003)

Accretion in Young Stellar/Substellar Objects. *James Muzerolle, Lynne Hillenbrand, Nuria Calvet, César Briceño, & Lee Hartmann.* 592, 266 (2003)

Unveiling the Inner Disk Structure of T Tauri Stars. *James Muzerolle, Nuria Calvet, Lee Hartmann, & Paola D'Alessio.* 597, L149 (2003)

HARTMANN, WOUTER. An *XMM-Newton* Observation of Nova LMC 1995: A Bright Supersoft X-Ray Source. *Marina Orio, Wouter Hartmann, Martin Still, & Jochen Greiner.* 594, 435 (2003)

HARTWELL, J. M. An X-Ray Investigation of the NGC 346 Field in the Small Magellanic Cloud. II. The Field Population. *Y. Nazé, J. M. Hartwell, I. R. Stevens, J. Manfroid, S. Marchenko, M. F. Corcoran, A. F. J. Moffat, & G. Skalkowski.* 586, 983 (2003)

HARVANEK, MICHAEL. See SCHMIDT, GARY D., et al. Magnetic White Dwarfs from the Sloan Digital Sky Survey: The First Data Release.

HARVEY, DANIEL W. A. Inner Structures of Protostellar Collapse Candidate B335 Derived from Millimeter-Wave Interferometry. *Daniel W. A. Harvey, David J. Wilner, Philip C. Myers, Mario Tafalla, & Diego Mardones.* 583, 809 (2003)

Disk Properties and Density Structure of the Star-Forming Dense Core B335. *Daniel W. A. Harvey, David J. Wilner, Philip C. Myers, & Mario Tafalla.* 596, 383 (2003)

Inner Structure of Starless Core L694-2 Derived from Millimeter-Wave Interferometry. *Daniel W. A. Harvey, David J. Wilner, Philip C. Myers, & Mario Tafalla.* 597, 424 (2003)

Envelope Structure of Starless Core L694-2 Derived from a Near-Infrared Extinction Map. *Daniel W. A. Harvey, David J. Wilner, Charles J. Lada, Philip C. Myers, & Joao F. Alves.* 598, 1112 (2003)

HARWIT, MARTIN. Chemical Composition of the Early Universe. *Martin Harwit & Marco Spaans.* 589, 53 (2003)

Photon Orbital Angular Momentum in Astrophysics. *Martin Harwit.* 597, 1266 (2003)

HASAN, S. S. Kink and Longitudinal Oscillations in the Magnetic Network on the Sun: Nonlinear Effects and Mode Transformation. *S. S. Hasan, W. Kalkofen, A. A. van Ballegooijen, & P. Ulmschneider.* 585, 1138 (2003)

HASEGAWA, S. Discovery of Dust Trail of *STARDUST* Comet Sample Return Mission Target: 81P/Wild 2. *M. Ishiguro, S. M. Kwon, Y. Sarugaku, S. Hasegawa, F. Usui, S. Nishiura, Y. Nakada, & H. Yano.* 589, L101 (2003)

HASEGAWA, TATSUHIKO I. Neutral Carbon in Post–Asymptotic Giant Branch Stars and Planetary Nebulae. *Tatsuhiko I. Hasegawa & Sun Kwok.* 585, 475 (2003)

HASHIMOTO, M. Effects of a Decaying Cosmological Term on the Formation of Molecules and First Objects. *M. Hashimoto, T. Kamikawa, & K. Arai.* 598, 13 (2003)

HASHIMOTO, MASA-AKI. *p*-Process Nucleosynthesis inside Supernova-driven Supercritical Accretion Disks. *Shin-ichirou Fujimoto, Masa-aki Hashimoto, Osamu Koike, Kenzo Arai, & Ryuichi Matsuba.* 585, 418 (2003)

HASHIMOTO, YOSHIKAZU. To Circularize or Not to Circularize?—Orbital Evolution of Satellite Galaxies. *Yoshikazu Hashimoto, Yoko Funato, & Junichiro Makino.* 582, 196 (2003)

HASINGER, G. Discovery of a Binary Active Galaxy Nucleus in the Ultraluminous Infrared Galaxy NGC 6240 Using *CHANDRA*. *S. Komossa, V. Burwitz, G. Hasinger, P. Predehl, J. S. Kaastra, & Y. Ikebe.* 582, L15 (2003)

See GILLI, R., et al. Tracing the Large-Scale Structure in the *Chandra* Deep Field South.

See GROGIN, N. A., et al. *Hubble Space Telescope* Imaging in the *Chandra* Deep Field–South. III. Quantitative Morphology of the 1 Million Second *Chandra* Counterparts and Comparison with the Field Population.

HASSEL, G. E. A Test Case for the Organic Refractory Model of Interstellar Dust. *S. S. Shenoy, D. C. B. Whittet, J. E. Chiar, A. J. Adamson, W. G. Roberge, & G. E. Hassel.* 591, 962 (2003)

HASTINGS, N. C. Rapid Brightness Fluctuations in Q0957+561A,B: Microlensing or Seeing? *Wesley N. Colley, Irwin I. Shapiro, Jennifer Pegg, Edwin L. Turner, Tomislav Kundić, Karen Loomis, N. C. Hastings, & Russet McMillan.* 588, 711 (2003)

HATHAWAY, D. H. Solar Coronal Heating and the Magnetic Flux Content of the Network. *D. A. Falconer, R. L. Moore, J. G. Porter, & D. H. Hathaway.* 593, 549 (2003)

HATHAWAY, DAVID H. Evidence That a Deep Meridional Flow Sets the Sunspot Cycle Period. *David H. Hathaway, Dibyendu Nandy, Robert M. Wilson, & Edwin J. Reichmann.* 589, 665 (2003)

HATHI, N. See STANEK, K. Z., et al. Spectroscopic Discovery of the Supernova 2003dh Associated with GRB 030329.

HATHI, N. P. See MATHESON, T., et al. Photometry and Spectroscopy of GRB 03029 and Its Associated Supernova 2003dh: The First Two Months.

HATTORI, H. See ENOMOTO, R., et al. Search for TeV Gamma Rays from SN 1987A in 2001.

HATTORI, MAKOTO. Spontaneous Generation of the Magnetic Field and Suppression of the Heat Conduction in Cold Fronts. *Nobuhiro Okabe & Makoto Hattori.* 599, 964 (2003)

HATZES, ARTIE P. A Planetary Companion to γ Cephei A. *Artie P. Hatzes, William D. Cochran, Michael Endl, Barbara McArthur, Diane B. Paulson, Gordon A. H. Walker, Bruce Campbell, & Stephenson Yang.* 599, 1383 (2003)

HAU, G. K. T. The Puzzlingly Large Ca II Triplet Absorption in Dwarf Elliptical Galaxies. *D. Michielsen, S. De Rijcke, H. Dejonghe, W. W. Zeilinger, & G. K. T. Hau.* 597, L21 (2003)

HAUGEN, NILS ERLANDS L. Is Nonhelical Hydromagnetic Turbulence Peaked at Small Scales? *Nils Erlands L. Haugen, Axel Brandenburg, & Wolfgang Dobler.* 597, L141 (2003)

HAUSCHILDT, P. See DRAKE, JEREMY J., et al. The Extraordinary X-Ray Light Curve of the Classical Nova V1494 Aquilae (1999 No. 2) in Outburst: The Discovery of Pulsations and a "Burst."

See NESS, J.-U., et al. A *Chandra* Low Energy Transmission Grating Spectrometer Observation of V4743 Sagittarii: A Supersoft X-Ray Source and a Violently Variable Light Curve.

HAUSCHILDT, P. H. The Molecular Line Opacity of MgH in Cool Stellar Atmospheres. *P. F. Weck, A. Schweitzer, P. C. Stancil, P. H. Hauschildt, & K. Kirby.* 582, 1059 (2003)

The Molecular Continuum Opacity of ^{24}MgH in Cool Stellar Atmospheres. *P. F. Weck, A. Schweitzer, P. C. Stancil, P. H. Hauschildt, & K. Kirby.* 584, 459 (2003)

See KASEN, DANIEL, et al. Analysis of the Flux and Polarization Spectra of the Type Ia Supernova SN 2001el: Exploring the Geometry of the High-Velocity Ejecta.

Atmospheric Models of Red Giants with Massive-Scale Non–Local Thermodynamic Equilibrium. *C. I. Short & P. H. Hauschildt.* 596, 501 (2003)

See FIELDS, DALE L., et al. High-Precision Limb-Darkening Measurement of a K3 Giant Using Microlensing.

HAUSCHILDT, PETER H. Determination of Primordial Metallicity and Mixing in the Type II-P Supernova 1993W. *E. Baron, Peter E. Nugent, David Branch, Peter H. Hauschildt, M. Turatto, & E. Cappellaro.* 586, 1199 (2003)

Detectibility of Mixed Unburnt C+O in Type Ia Supernova Spectra. *E. Baron, Eric J. Lentz, & Peter H. Hauschildt.* 588, L29 (2003)

HAUSCHILDT, T. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

HAWLEY, JOHN F. A Numerical Method for General Relativistic Magneto-hydrodynamics. *Jean-Pierre De Villiers & John F. Hawley.* 589, 458 (2003)

Gap Formation by Planets in Turbulent Protostellar Disks. *Wayne F. Winters, Steven A. Balbus, & John F. Hawley.* 589, 543 (2003)

Global General Relativistic Magnetohydrodynamic Simulations of Accretion Tori. *Jean-Pierre De Villiers & John F. Hawley.* 592, 1060 (2003)

Magnetically Driven Accretion Flows in the Kerr Metric. I. Models and Overall Structure. *Jean-Pierre De Villiers, John F. Hawley, & Julian H. Krolik.* 599, 1238 (2003)

HAWLEY, S. L. See TEEGARDEN, B. J., et al. Discovery of a New Nearby Star.

HAWLEY, SUZANNE. See SZKODY, PAULA, et al. Two Rare Magnetic Cataclysmic Variables with Extreme Cyclotron Features Identified in the Sloan Digital Sky Survey.

See SCHMIDT, GARY D., et al. Magnetic White Dwarfs from the Sloan Digital Sky Survey: The First Data Release.

HAWLEY, SUZANNE L. Transition Region Emission from Very Low Mass Stars. *Suzanne L. Hawley & Christopher M. Johns-Krull.* 588, L109 (2003)

Multiwavelength Observations of Flares on AD Leonis. *Suzanne L. Hawley, Joel C. Allred, Christopher M. Johns-Krull, George H. Fisher, William P. Abbet, Ilya Alekseev, Stavros I. Avgoloupis, Susana E. Deustua, Alastair Gunn, John H. Seiradakis, Martin M. Sirk, & Jeff A. Valenti.* 597, 535 (2003)

HAYANO, YUTAKA. See GOTO, MIWA, et al. Spatially Resolved 3 Micron Spectroscopy of IRAS 22272+5435: Formation and Evolution of Aliphatic Hydrocarbon Dust in Proto–Planetary Nebulae.

See PYO, TAE-SOO, et al. Adaptive Optics Spectroscopy of the [Fe II] Outflow from DG Tauri.

See GOTO, MIWA, et al. Carbon Isotope Ratio in ^{12}CO/^{13}CO toward Local Molecular Clouds with Near-Infrared High-Resolution Spectroscopy of Vibrational Transition Bands.

HAYASHI, ERIC. The Structural Evolution of Substructure. *Eric Hayashi, Julio F. Navarro, James E. Taylor, Joachim Stadel, & Thomas Quinn.* 584, 541 (2003)

HAYASHI, MASA. See GOTO, MIWA, et al. Carbon Isotope Ratio in ^{12}CO/^{13}CO toward Local Molecular Clouds with Near-Infrared High-Resolution Spectroscopy of Vibrational Transition Bands.

HAYASHI, MASAHIKO. See TANIGUCHI, YOSHIAKI, et al. The Discovery of a Very Narrow Line Star-forming Object at a Redshift of 5.66.

See PYO, TAE-SOO, et al. Adaptive Optics Spectroscopy of the [Fe II] Outflow from DG Tauri.

HAYASHI, SAEKO S. Near-Infrared Imaging of the Circumstellar Disk around Herbig Ae Star HD 150193A. *Misato Fukagawa, Motohide Tamura, Yoichi Itoh, Saeko S. Hayashi, & Yumiko Oasa.* 590, L49 (2003)

HAYASHI, SEI. See ENOMOTO, R., et al. Search for TeV Gamma Rays from SN 1987A in 2001.

HAYASHI, SHIN. See ENOMOTO, R., et al. Search for TeV Gamma Rays from SN 1987A in 2001.

HAYASHIDA, K. Discovery of Bright Variable X-Ray Sources in NGC 569 with *Chandra*. *K. Heike, H. Awaki, Y. Misao, K. Hayashida, & K. A. Weaver.* 591, L99 (2003)

HAYASHIDA, KIYOSHI. Properties of the Brightest Cluster Galaxy and Its Host Cluster. *Haruyoshi Katayama, Kiyoshi Hayashida, Fumio Takahara, & Yutaka Fujita.* 585, 687 (2003)

See OHTA, KOUJI, et al. Optical Identification of the *ASCA* Lynx Deep Survey: An Association of Quasi-Stellar Objects and a Supercluster at $z = 1.3$?

HAYASHINO, T. See SHIMASAKU, K., et al. Subaru Deep Survey. IV. Discovery of a Large-Scale Structure at Redshift $\simeq$5.

HAYASHINO, TOMOKI. See OUCHI, MASAMI, et al. Subaru Deep Survey. II. Luminosity Functions and Clustering Properties of Lyα Emitters at $z = 4.86$ in the Subaru Deep Field.

HAYES, JOHN C. Beyond Flux-limited Diffusion: Parallel Algorithms for Multidimensional Radiation Hydrodynamics. *John C. Hayes & Michael L. Norman.* 147, 197 (2003)

HAYES, WAYNE B. Shadowing-based Reliability Decay in Softened n-Body Simulations. *Wayne B. Hayes.* 587, L59 (2003)

HAYNES, C. V. See CRILL, B. P., et al. BOOMERANG: A Balloon-Borne Millimeter-Wave Telescope and Total Power Receiver for Mapping Anisotropy in the Cosmic Microwave Background.

See RUNYAN, M. C., et al. ACBAR: The Arcminute Cosmology Bolometer Array Receiver.

HAYNES, M. See FELDMAN, H., et al. An Estimate of Ω_m without Conventional Priors.

HAYS, E. See ATKINS, R., et al. Observation of TeV Gamma Rays from the Crab Nebula with Milagro Using a New Background Rejection Technique.

HE, H. H. See AMENOMORI, M., et al. Multi-TeV Gamma-Ray Flares from Markarian 421 in 2000 and 2001 Observed with the Tibet Air Shower Array.

HE, M. See AMENOMORI, M., et al. Multi-TeV Gamma-Ray Flares from Markarian 421 in 2000 and 2001 Observed with the Tibet Air Shower Array.

HEAD-GORDON, MARTIN. Time-dependent Density Functional Theory Calculations of Large Compact Polycyclic Aromatic Hydrocarbon Cations: Implications for the Diffuse Interstellar Bands. *Jennifer L. Weisman, Timothy J. Lee, Farid Salama, & Martin Head-Gordon.* 587, 256 (2003)

HEAP, S. R. A Tale of Two Stars: The Extreme O7 Iaf+ Supergiant AV 83 and the OC7.5 III((f)) Star AV 69. *D. John Hillier, T. Lanz, S. R. Heap, I. Hubeny, L. J. Smith, C. J. Evans, D. J. Lennon, & J. C. Bouret.* 588, 1039 (2003)

Quantitative Spectroscopy of O Stars at Low Metallicity: O Dwarfs in NGC 346. *J.-C. Bouret, T. Lanz, D. J. Hillier, S. R. Heap, I. Hubeny, D. J. Lennon, L. J. Smith, & C. J. Evans.* 595, 1182 (2003)

HEAP, SARA R. Emission-Line Galaxies in the Space Telescope Imaging Spectrograph Parallel Survey. I. Observations and Data Analysis. *Harry I. Teplitz, Nicholas R. Collins, Jonathan P. Gardner, Robert S. Hill, Sara R. Heap, Don J. Lindler, Jason Rhodes, & Bruce E. Woodgate.* 146, 209 (2003)

HEARN, N. C. See MCDOWELL, J. C., et al. *Chandra* Observations of Extended X-Ray Emission in Arp 220.

HEARNSHAW, J. B. See SUMI, T., et al. Microlensing Optical Depth toward the Galactic Bulge from Microlensing Observations during 2000 with Difference Image Analysis.

HEBB, LESLIE. ω Centauri: Not a Recent Merger but Self-enriched? *Imants Platais, Rosemary F. G. Wyse, Leslie Hebb, Young-Wook Lee, & Soo-Chang Rey.* 591, L127 (2003)

HEBER, B. Solar Wind Effects on the Transport of 3–10 MeV Cosmic-Ray Electrons from Solar Minimum to Solar Maximum. *S. E. S. Ferreira, M. S. Potgieter, D. M. Moeketsi, B. Heber, & H. Fichtner.* 594, 552 (2003)

HEBER, VERONIKA S. Helium in Lunar Samples Analyzed by High-Resolution Stepwise Etching: Implications for the Temporal Constancy of Solar Wind Isotopic Composition. *Veronika S. Heber, Heinrich Baur, & Rainer Wieler.* 597, 602 (2003)

HÉBRARD, G. See ANDRÉ, M. K., et al. Oxygen Gas-Phase Abundance Revisited.

HEBRARD, GUILLAUME. Deuterium toward Two Milky Way Disk Stars: Probing Extended Sight Lines with the *Far Ultraviolet Spectroscopic Explorer*. *Charles G. Hoopes, Kenneth R. Sembach, Guillaume Hébrard, H. Warren Moos, & David C. Knauth.* 586, 1094 (2003)

Interstellar Deuterium, Nitrogen, and Oxygen Abundances toward GD 246, WD 2331−475, HZ 21, and Lanning 23: Results from the *FUSE* Mission. *Cristina M. Oliveira, Guillaume Hébrard, J. Christopher Howk, Jeffrey W. Kruk, Pierre Chayer, & H. Warren Moos.* 587, 235 (2003)

Far Ultraviolet Spectroscopic Explorer Observation of the Ultramassive White Dwarf PG 1658+441. *Jean Dupuis, Pierre Chayer, Stéphane Vennes, Nicole F. Allard, & Guillaume Hébrard.* 598, 486 (2003)

The Deuterium-to-Oxygen Ratio in the Interstellar Medium. *Guillaume Hébrard & H. Warren Moos.* 599, 296 (2003)

HECKMAN, T. A *Chandra* Survey of the Nearest Ultraluminous Infrared Galaxies: Obscured Active Galactic Nuclei or Superstarbursts? *A. Ptak, T. Heckman, N. A. Levenson, K. Weaver, & D. Strickland.* 592, 782 (2003)

HECKMAN, T. M. No X-Ray–bright Type II Quasars among the Lyo Emitters. *S. Malhotra, J. X. Wang, J. E. Rhoads, T. M. Heckman, & C. A. Norman.* 585, L25 (2003)

Abundances in the Neutral Interstellar Medium of I Zw 18 from *Far Ultrviolet Spectroscopic Explorer* Observations. *A. Aloisi, S. Savaglio, T. M. Heckman, C. G. Hoopes, C. Leitherer, & K. R. Sembach.* 595, 760 (2003)

HECKMAN, TIMOTHY M. Synthetic High-Resolution Line Spectra of Star-forming Galaxies below 1200 Å. *Carmelle Robert, Anne Pellerin, Alessandra Aloisi, Claus Leitherer, Charles Hoopes, & Timothy M. Heckman.* 144, 21 (2003)

Cooling in Coronal Gas in the M82 Starburst Superwind. *Charles G. Hoopes, Timothy M. Heckman, David K. Strickland, & J. Christopher Howk.* 596, L175 (2003)

HEDDEN, A. Does Tiny-Scale Atomic Structure Exist in the Interstellar Medium? *S. Stanimirović, J. M. Weisberg, A. Hedden, K. E. Devine, & J. T. Green.* 598, L23 (2003)

HEDDEN, ABIGAIL. Detection of OH Absorption against PSR B1849+00. *Snežana Stanimirović, Joel M. Weisberg, John M. Dickey, Anton de la Fuente, Kathryn Devine, Abigail Hedden, & Stuart B. Anderson.* 592, 953 (2003)

HEGER, A. How Massive Single Stars End Their Life. *A. Heger, C. L. Fryer, S. E. Woosley, N. Langer, & D. H. Hartmann.* 591, 288 (2003)

HEGER, ALEXANDER. Supernova Reverse Shocks: SiC Growth and Isotopic Composition. *Ethan A.-N. Deneault, Donald D. Clayton, & Alexander Heger.* 594, 312 (2003)

HEGWER, STEVE. See HABBAL, SHADIA RIFAI, et al. On the Detection of the Signature of Silicon Nanoparticle Dust Grains in Coronal Holes.

HEIDT, J. Quasar Elemental Abundances at High Redshifts. *M. Dietrich, F. Hamann, J. C. Shields, A. Constantin, J. Heidt, K. Jäger, M. Vestergaard, & S. J. Wagner.* 589, 722 (2003)

Internal Kinematics of Spiral Galaxies in Distant Clusters. *B. L. Ziegler, A. Böhm, K. Jäger, J. Heidt, & C. Möllenhoff.* 598, L87 (2003)

HEIKE, K. Discovery of Bright Variable X-Ray Sources in NGC 569 with *Chandra*. *K. Heike, H. Awaki, Y. Misao, K. Hayashida, & K. A. Weaver.* 591, L99 (2003)

HEIL, M. See REIFARTH, R., et al. Stellar Neutron Capture on Promethium: Implications for the *s*-Process Neutron Density.

HEILES, CARL. The Millennium Arecibo 21 Centimeter Absorption-Line Survey. II. Properties of the Warm and Cold Neutral Media. *Carl Heiles & T. H. Troland.* 586, 1067 (2003)

The Millenium Arecibo 21 Centimeter Absorption-Line Survey. I. Techniques and Gaussian Fits. *Carl Heiles & T. H. Troland.* 145, 329 (2003)

HEINDL, W. A. Extended Emission from Cygnus X-3 Detected with *Chandra*. *W. A. Heindl, J. A. Tomsick, R. Wijnands, & D. M. Smith.* 588, L97 (2003)

HEINKE, C. O. X-Ray Studies of Two Neutron Stars in 47 Tucanae: Toward Constraints on the Equation of State. *C. O. Heinke, J. E. Grindlay, D. A. Lloyd, & P. D. Edmonds.* 588, 452 (2003)

A *Chandra* X-Ray Study of the Dense Globular Cluster Terzan 5. *C. O. Heinke, P. D. Edmonds, J. E. Grindlay, D. A. Lloyd, H. N. Cohn, & P. M. Lugger.* 590, 809 (2003)

Analysis of the Quiescent Low-Mass X-Ray Binary Populaton in Galactic Globular Clusters. *C. O. Heinke, J. E. Grindlay, P. M. Lugger, H. N. Cohn, P. D. Edmonds, D. A. Lloyd, & A. M. Cool.* 598, 501 (2003)

A *Chandra* X-Ray Study of the Globular Cluster M80. *C. O. Heinke, J. E. Grindlay, P. M. Lugger, H. N. Cohn, P. D. Edmonds, D. A. Lloyd, & S. S. Murray.* 598, 516 (2003)

HEINKE, CRAIG O. An Extensive Census of *Hubble Space Telescope* Counterparts to *Chandra* X-Ray Sources in the Globular Cluster 47 Tucanae. I. Astrometry and Photometry. *Peter D. Edmonds, Ronald L. Gilliland, Craig O. Heinke, & Jonathan E. Grindlay.* 596, 1177 (2003)

An Extensive Census of *Hubble Space Telescope* Counterparts to *Chandra* X-Ray Sources in the Globular Cluster 47 Tucanae. II. Time Series and Analysis. *Peter D. Edmonds, Ronald L. Gilliland, Craig O. Heinke, & Jonathan E. Grindlay.* 596, 1197 (2003)

HEISE, J. See WOODS, P. M., et al. The 2001 April Burst Activation of SGR 1900+14: Pulse Properties and Torque.

Discovery of X-Ray Burst Oscillations from a Neutron Star X-Ray Transient in the Globular Cluster NGC 6440. *P. Kaaret, J. J. M. in 't Zand, J. Heise, & J. A. Tomsick.* 598, 481 (2003)

HEISLER, C. A. See CORBETT, E. A., et al. COLA. II. Radio and Spectroscopic Diagnostics of Nuclear Activity in Galaxies.

HEITSCH, FABIAN. Fast Reconnection in a Two-Stage Process. *Fabian Heitsch & Ellen G. Zweibel.* 583, 229 (2003)

Suppression of Fast Reconnection by Magnetic Shear. *Fabian Heitsch & Ellen G. Zweibel.* 590, 291 (2003)

HELD, ENRICO V. RR Lyrae and Short-Period Variable Stars in the Dwarf Irregular Galaxy NGC 6822. *Gisella Clementini, Enrico V. Held, Lara Baldacci, & Luca Rizzi.* 588, L85 (2003)

Clues to the Evolution of the Carina Dwarf Spheroidal Galaxy from the Color Distribution of Its Red Giant Stars. *Luca Rizzi, Enrico V. Held, Gianpaolo Bertelli, & Ivo Saviane.* 589, L85 (2003)

HELENIUS, LOUISE. Flux-Tube Dynamics and a Model for the Origin of the Local Fluff. *Donald P. Cox & Louise Helenius.* 583, 205 (2003)

HELFAND, DAVID J. *Chandra* X-Ray Imaging Spectroscopy of the Young Supernova Remnant Kesteven 75. *David J. Helfand, Benjamin F. Collins, & E. V. Gotthelf.* 582, 783 (2003)

An X-Ray Image of the Composite Supernova Remnant G16.7+0.1. *David J. Helfand, Marcel A. Agueros, & E. V. Gotthelf.* 592, 941 (2003)

The Serendipitous Extragalactic X-Ray Source Identification Program. I. Characteristics of the Hard X-Ray Sample. *Fiona A. Harrison, Megan E. Eckart, Peter H. Mao, David J. Helfand, & Daniel Stern.* 596, 944 (2003)

HELFER, TAMARA T. The BIMA Survey of Nearby Galaxies (BIMA SONG). II. The CO Data. *Tamara T. Helfer, Michele D. Thornley, Michael W. Regan, Tony Wong, Kartik Sheth, Stuart N. Vogel, Leo Blitz, & Douglas C.-J. Bock.* 145, 259 (2003)

HELLIER, C. X-Ray Variability of the Magnetic Cataclysmic Variable V1432 Aquilae and the Seyfert Galaxy NGC 6814. *K. Mukai, C. Hellier, G. Madejski, J. Patterson, & D. R. Skillman.* 597, 479 (2003)

HELLWIG, M. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

HELMI, AMINA. Selection of Metal-poor Giant Stars Using the Sloan Digital Sky Survey Photometric System. *Amina Helmi, Željko Ivezić, Francisco Prada, Laura Pentericci, Constance M. Rockosi, Donald P. Schneider, Eva K. Grebel, Daniel Harbeck, Robert H. Lupton, James E. Gunn, Gillian R. Knapp, Michael A. Strauss, & Jonathan Brinkmann.* 586, 195 (2003)

On the Nature of the Ringlike Structure in the Outer Galactic Disk. *Amina Helmi, Julio F. Navarro, Andrés Meza, Matthias Steinmetz, & Vincent R. Eke.* 592, L25 (2003)

HELOU, G. The Bivariate Luminosity-Color Distribution of *IRAS* Galaxies and Implications for the High-Redshift Universe. *S. C. Chapman, G. Helou, G. F. Lewis, & D. A. Dale.* 588, 186 (2003)

Nascent Starbursts in Synchrotron-deficient Galaxies with Hot Dust. *H. Roussel, G. Helou, R. Beck, J. J. Condon, A. Bosma, K. Matthews, & T. H. Jarrett.* 593, 733 (2003)

HELOU, GEORGE. See LU, NANYAO, et al. Infrared Emission of Normal Galaxies from 2.5 to 12 Microns: *Infrared Space Observatory* Spectra, Near-Infrared Continuum, and Mid-Infrared Emission Features.

HENDEN, A. A. See PRICE, P. A., et al. GRB 010921: Strong Limits on an Underlying Supernova from the *Hubble Space Telescope*.

See KLOSE, S., et al. The Very Faint *K*-Band Afterglow of GRB 020819 and the Dust Extinction Hypothesis of the Dark Bursts.

HENDERSON, H. See COLAVITA, M., et al. Observations of DG Tauri with the Keck Interferometer.

HENDRICK, S. P. Ejecta Detection in Middle-aged Large Magellanic Cloud Supernova Remnants 0548−70.4 and 0534−69.9. *S. P. Hendrick, K. J. Borkowski, & S. P. Reynolds.* 593, 370 (2003)

Discovery of a New Pulsar Wind Nebula in the Large Magellanic Cloud. *B. M. Gaensler, S. P. Hendrick, S. P. Reynolds, & K. J. Borkowski.* 594, L111 (2003)

HENDRY, MARTIN A. Reconstructing Cepheid Light Curve with Fourier Techniques. I. The Fourier Expansion and Interrelations. *Chow-Choong Ngeow, Shashi M. Kanbur, Sergei Nikolaev, Nial R. Tanvir, & Martin A. Hendry.* 586, 959 (2003)

HENKEL, C. A Survey for H_2O Megamasers. III. Monitoring Water Vapor Masers in Active Galaxies. *J. A. Braatz, A. S. Wilson, C. Henkel, R. Gough, & M. Sinclair.* 146, 249 (2003)

The Flaring H_2O Megamaser and Conpact Radio Source in Markarian 348. *A. B. Peck, C. Henkel, J. S. Ulvestad, A. Brunthaler, H. Falcke, M. Elitzur, K. M. Menten, & J. F. Gallimore.* 590, 149 (2003)

HENNESSY, GREG. See SZALAY, ALEXANDER S., et al. Karhunen-Loève Estimation of the Power Spectrum Parameters from the Angular Distribution of Galaxies in Early Sloan Digital Sky Survey Data.

See NEWBERG, HEIDI JO, et al. Sagittarius Tidal Debris 90 kiloparsecs from the Galactic Center.

HENNEY, C. J. The Rotation of the Deep Solar Layers. *S. Couvidat, R. A. García, S. Turck-Chièze, T. Corbard, C. J. Henney, & S. Jiménez-Reyes.* 597, L77 (2003)

HENNING, T. Magnetic Field Evolution in Bok Globules. *Sebastian Wolf, R. Launhardt, & T. Henning.* 592, 233 (2003)

Infrared Properties of Solid Titanium Oxides: Exploring Potential Primary Dust Condensates. *T. Posch, F. Kerschbaum, D. Fabian, H. Mutschke, J. Dorschner, A. Tamanai, & T. Henning.* 149, 437 (2003)

HENNING, TH. Detection of Gaps in Circumstellar Disks. *J. Steinacker & Th. Henning.* 583, L35 (2003)

The First Detailed Look at a Brown Dwarf Disk. *I. Pascucci, D. Apai, Th. Henning, & C. P. Dullemond.* 590, L111 (2003)

First Detection of Millimeter Dust Emission from Brown Dwarf Disks. *R. Klein, D. Apai, I. Pascucci, Th. Henning, & L. B. F. M. Waters.* 593, L57 (2003)

New Laboratory Spectra of Isolated β-SiC Nanoparticles: Comparison with Spectra Taken by the *Infrared Space Observatory*. *D. Clément, H. Mutschke, R. Klein, & Th. Henning.* 594, 642 (2003)

NGC 2264 IRS 1: The Central Engine and Its Cavity. *K. Schreyer, B. Stecklum, H. Linz, & Th. Henning.* 599, 334 (2003)

See FELDT, M., et al. Discovery of a Candidate for the Central Star of the Ultracompact H II Region G5.89−0.39.

HENNING, THOMAS. Orbital Migration and Mass Accretion of Protoplanets in Three-dimensional Global Computations with Nested Grids. *Gennaro D'Angelo, Willy Kley, & Thomas Henning.* 586, 540 (2003)

Magnetic Star-Disk Coupling in Classical T Tauri Systems. *Manfred Küker, Thomas Henning, & Günther Rüdiger.* 589, 397 (2003)

Thermohydrodynamics of Circumstellar Disks with High-Mass Planets. *Gennaro D'Angelo, Thomas Henning, & Willy Kley.* 599, 548 (2003)

HENRIKSEN, MARK J. A *BeppoSAX* Observation of the IC 1262 Galaxy Cluster. *Daniel S. Hudson, Mark J. Henriksen, & Sergio Colafrancesco.* 583, 706 (2003)

Diffuse Nonthermal X-Ray Emission: Evidence of Cosmic-Ray Acceleration at the Shock Front in IC 1262. *Daniel S. Hudson & Mark J. Henriksen.* 595, L1 (2003)

HENRIKSEN, RICHARD N. Relaxation of a Collisionless System and the Transition to a New Equilibrium Velocity Distribution. *Thomas E. C. Merrall & Richard N. Henriksen.* 595, 43 (2003)

HENRY, GREGORY W. Seven New Keck Planets Orbiting G and K Dwarfs. *R. Paul Butler, Geoffrey W. Marcy, Steven S. Vogt, Debra A. Fischer, Gregory W. Henry, Gregory Laughlin, & Jason T. Wright.* 582, 455 (2003)

See FISCHER, DEBRA A., et al. A Planetary Companion to HD 40979 and Additional Planets Orbiting HD 12661 and HD 38529.

A Sub-Saturn Mass Planet Orbiting HD 3651. *Debra A. Fischer, R. Paul Butler, Geoffrey W. Marcy, Steven S. Vogt, & Gregory W. Henry.* 590, 1081 (2003)

HENRY, J. P. See VIKHLININ, A., et al. Cosmological Constraints from the Evolution of the Cluster Baryon Mass Function at $z \sim 0.5$.

See MULLIS, C. R., et al. The 160 Square Degree *ROSAT* Survey: The Revised Catalog of 201 Clusters with Spectroscopic Redshifts.

The *ROSAT* North Ecliptic Pole Survey: The Optical Identifications. *I. M. Gioia, J. P. Henry, C. R. Mullis, H. Böhringer, U. G. Briel, W. Voges, & J. P. Huchra.* 149, 29 (2003)

HENSLER, GERHARD. Massive Stars and the Energy Balance of the Interstellar Medium. I. The Impact of an Isolated 60 $M_\odot$ Star. *Tim Freyer, Gerhard Hensler, & Harold W. Yorke.* 594, 888 (2003)

HERBIG, G. H. High-Resolution Spectroscopy of FU Orionis Stars. *G. H. Herbig, P. P. Petrov, & R. Duemmler.* 595, 384 (2003)

HERBST, ERIC. Trans-Ethyl Methyl Ether: Assignments and Predictions up to 400 GHz for the Vibrational-Torsional Ground State. *Ulrike Fuchs, Gisbert Winnewisser, Peter Groner, Frank C. De Lucia, & Eric Herbst.* 144, 277 (2003)

Enhanced Deuterium Fractionation in Dense Interstellar Cores Resulting from Multiply Deuterated H_3^+. *Helen Roberts, Eric Herbst, & T. J. Millar.* 591, L41 (2003)

Molecular Evolution in Collapsing Prestellar Cores. II. The Effect of Grain-Surface Reactions. *Yuri Aikawa, Nagayoshi Ohashi, & Eric Herbst.* 593, 906 (2003)

See MEDVEDEV, IVAN, et al. The Millimeter- and Submillimeter-Wave Spectrum of the Trans-Trans Conformer of Diethyl Ether ($C_2H_5OC_2H_5$).

Laboratory Spectrum of the 1_{11}–2_{02} Rotational Transition of CH_2. *Ernest A. Michael, Frank Lewen, Gisbert Winnewisser, Hiroyuki Ozeki, Hideta Habara, & Eric Herbst.* 596, 1356 (2003)

HERBST, WILLIAM. Natural Coronagraphics Observations of the Eclipsing T Tauri System KH 15D: Evidence of Accretion and Bipolar Outflow in a Weak-Line T Tauri Star. *Catrina M. Hamilton, William Herbst, Reinhard Mundt, Coryn A. L. Bailer-Jones, & Christopher M. Johns-Krull.* 591, L45 (2003)

An Unusual Eclipse of a Pre–Main-Sequence Star in IC 348. *William Herbst, Roger E. Cohen, & Eric C. Williams.* 596, L243 (2003)

HERCZEG, GREGORY J. The Effects of UV Continuum and Lyα Radiation on the Chemical Equilibrium of T Tauri Disks. *Edwin Bergin, Nuria Calvet, Paola D'Alessio, & Gregory J. Herczeg.* 591, L159 (2003)

HERMAN, M. See REIFARTH, R., et al. Stellar Neutron Capture on Promethium: Implications for the *s*-Process Neutron Density.

HERMSEN, W. See MEREGHETTI, S., et al. *Integral* and *XMM-Newton* Observations of the Weak Gamma-Ray Burst GRB 030227.

HERNANZ, M. See DRAKE, JEREMY J., et al. The Extraordinary X-Ray Light Curve of the Classical Nova V1494 Aquilae (1999 No. 2) in Outburst: The Discovery of Pulsations and a "Burst."

See NESS, J.-U., et al. A *Chandra* Low Energy Transmission Grating Spectrometer Observation of V4743 Sagittarii: A Supersoft X-Ray Source and a Violently Variable Light Curve.

HERNANZ, MARGARITA. The Impact of the Chemical Stratification of White Dwarfs on the Classification of Classical Novae. *Jordi José, Margarita Hernanz, Enrique García-Berro, & Pilar Gil-Pons.* 597, L41 (2003)

HERNQUIST, L. NGC 4261 and NGC 4697: Rejuvenated Elliptical Galaxies. *A. Zezas, L. Hernquist, G. Fabbiano, & J. Miller.* 599, L73 (2003)

HERNQUIST, LARS. Gamma Rays from Intergalactic Shocks. *Uri Keshet, Eli Waxman, Abraham Loeb, Volker Springel, & Lars Hernquist.* 585, 128 (2003)

Three Epochs of Star Formation in the High-Redshift Universe. *Jonathan Mackey, Volker Bromm, & Lars Hernquist.* 586, 1 (2003)

The Influence of Ω_b on High-Redshit Structure. *Jeffrey P. Gardner, Neal Katz, Lars Hernquist, & David H. Weinberg.* 587, 1 (2003)

Early Structure Formation and Reionization in a Warm Dark Matter Cosmology. *Naoki Yoshida, Aaron Sokasian, Lars Hernquist, & Volker Springel.* 591, L1 (2003)

Effects of Wandering on the Coalescence of Black Hole Binaries in Galactic Centers. *Pinaki Chatterjee, Lars Hernquist, & Abraham Loeb.* 592, 32 (2003)

Simulations of Early Structure Formation: Primordial Gas Clouds. *Naoki Yoshida, Tom Abel, Lars Hernquist, & Naoshi Sugiyama.* 592, 645 (2003)

Black Hole Growth and Activity in a Λ Cold Dark Matter Universe. *Tiziana Di Matteo, Rupert A. C. Croft, Volker Springel, & Lars Hernquist.* 593, 56 (2003)

Optical and X-Ray Properties of Cooling Neutron Stars. *Don A. Lloyd, Lars Hernquist, & Jeremy S. Heyl.* 593, 1024 (2003)

The First Supernova Explosions in the Universe. *Volker Bromm, Naoki Yoshida, & Lars Hernquist.* 596, L135 (2003)

Early Structure Formation and Reionization in a Cosmological Model with a Running Primordial Power Spectrum. *Naoki Yoshida, Aaron Sokasian, Lars Hernquist, & Volker Springel.* 598, 73 (2003)

Mapping the Cosmic Web with Lyα Emission. *Steven R. Furlanetto, Joop Schaye, Volker Springel, & Lars Hernquist.* 599, L1 (2003)

HERQUET, P. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

HERRÁN MARTÍNEZ, C. Transitions from Autoionized Single-ionized Tin States: A Theoretical Study of the $5s5p\ (^3P^o)\ nl$ (nl = 5*d*, 6*s*) Levels of Sn II. *A. Alonso-Medina, C. Colón, & C. Herrán Martínez.* 595, 550 (2003)

HERRERO, AREMIO. Quantitative Spectral Analysis of Early B-Type Supergiants in the Sculptor Galaxy NGC 300. *Miguel Alejandro Urbaneja, Aremio Herrero, Fabio Bresolin, Rolf-Peter Kudritzki, Wolfgang Gieren, & Joachim Puls.* 584, L73 (2003)

HERRERO, ARTEMIO. The Remarkable Alternating Spectra of the Of?p Star HD 191612. *Nolan R. Walborn, Ian D. Howarth, Artemio Herrero, & Daniel J. Lennon.* 588, 1025 (2003)

HERRNSTEIN, J. R. See GREENHILL, L. J., et al. A Warped Accretion Disk and Wide-Angle Outflow in the Inner Parsec of the Circinus Galaxy.

HERRNSTEIN, R. M. Variability of Sagittarius A*: Flares at 1 Millimeter. *Jun-Hui Zhao, K. H. Young, R. M. Herrnstein, P. T. P. Ho, T. Tsutsumi, K. Y. Lo, W. M. Goss, & G. C. Bower.* 586, L29 (2003)

HERSTEIN, J. See COLAVITA, M., et al. Observations of DG Tauri with the Keck Interferometer.

HERTER, T. Radio-selected Galaxis in Very Rich Clusters at $z \leq 0.25$. I. Multiwavelength Observations and Data Reduction Techniques. *G. E. Morrison, F. N. Owen, M. J. Ledlow, W. C. Keel, J. M. Hill, W. Voges, & T. Herter.* 146, 267 (2003)

HERTER, TERRY L. Near-Infrared, Adaptive Optics Observations of the T Tauri Multiple-Star System. *Elise Furlan, William J. Forrest, Dan M. Watson, Keven I. Uchida, Bernhard R. Brandl, Luke D. Keller, & Terry L. Herter.* 596, L87 (2003)

Near-Infrared, Adaptive Optics Observations of the T Tauri Multiple-Star System: Erratum (ApJ, 596, L87 [2003]). *Elise Furlan, William J. Forrest, Dan M. Watson, Keven I. Uchida, Bernhard R. Brandl, Luke D. Keller, & Terry L. Herter.* 599, L117 (2003) (Orig. paper in 596, L87 (2003))

HERTLING, G. Quasars Clustering at $z \approx 3$ on Scales $\lesssim 10\ h^{-1}$ Mpc. *L. Infante, J. Varela, M. Moles, G. Hertling, A. García, & F. Menanteau.* 588, 90 (2003)

HERWIG, FALK. *s*-Process Nucleosynthesis in Asymptotic Giant Branch Stars: A Test for Stellar Evolution. *Maria Lugaro, Falk Herwig, John C. Lattanzio, Roberto Gallino, & Oscar Straniero.* 586, 1305 (2003)

The Abundance Evolution of Oxygen, Sodium, and Magnesium in Extremely Metal-Poor Intermediate-Mass Stars: Implications for the Self-Pollution Scenario in Globular Clusters. *Pavel A. Denissenkov & Falk Herwig.* 590, L99 (2003)

The *s*-Process in Rotating Asymptotic Giant Branch Stars. *Falk Herwig, Norbert Langer, & Maria Lugaro.* 593, 1056 (2003)

HESS, M. See COLAVITA, M., et al. Observations of DG Tauri with the Keck Interferometer.

HESSMAN, F. V. See SCHAEFER, BRADLEY E., et al. GRB 021004: A Massive Progenitor Star Surrounded by Shells.

HEWETT, P. See KERINS, E., et al. Theory of Pixel Lensing toward M31. II. The Velocity Anisotropy and Flattening of the MACHO Distribution.

HEWETT, PAUL C. Spectroscopic Detection of Type Ia Supernovae in the Sloan Digital Sky Survey. *Darren S. Madgwick, Paul C. Hewett, Daniel J. Mortlock, & Lifan Wang.* 599, L33 (2003)

Serendipity and the Sloan Digital Sky Survey: Discovery of the Largest Known Planetary Nebula on the Sky. *Paul C. Hewett, Michael J. Irwin, Evan D. Skillman, Craig B. Foltz, Jon P. Willis, Stephen J. Warren, & Nicholas A. Walton.* 599, L37 (2003)

HEYER, MARK H. See KRAEMER, KATHLEEN E., et al. Five Star-forming Cores in the Galactic Ring Survey: A Mid-Infrared Study.

High-Resolution Imaging of CO Outflows in OMC-2 and OMC-3. *Jonathan P. Williams, R. L. Plambeck, & Mark H. Heyer.* 591, 1025 (2003)

Intrinsic, Observed, and Retrieved Properties of Interstellar Turbulence. *Christopher M. Brunt, Mark H. Heyer, Enrique Vázquez-Semadeni, & Bárbara Pichardo.* 595, 824 (2003)

HEYL, J. S. See BERSIER, D., et al. The Strongly Polarized Afterglow of GRB 020405.

HEYL, JEREMY S. Broadband Modeling of GRB 021004. *Jeremy S. Heyl & Rosalba Perna.* 586, L13 (2003)

The Synoptic *Swift* Synergy—Catching Gamma-Ray Bursts Before They Fly. *Jeremy S. Heyl.* 592, 401 (2003)

Optical and X-Ray Properties of Cooling Neutron Stars. *Don A. Lloyd, Lars Hernquist, & Jeremy S. Heyl.* 593, 1024 (2003)

Thermonuclear Stability of Material Accreting onto a Neutron Star. *Ramesh Narayan & Jeremy S. Heyl.* 599, 419 (2003)

HEYROVSKÝ, DAVID. Measuring Stellar Limb Darkening by Gravitational Microlensing. *David Heyrovský.* 594, 464 (2003)

HEYVAERTS, JEAN. Global Asymptotic Solutions for Relativistic Magnetohydrodynamic Jets and Winds. *Jean Heyvaerts & Colin Norman.* 596, 1240 (2003)

Kinetic Energy Flux versus Poynting Flux in Magnetohydrodynamic Winds and Jets: The Intermediate Regime. *Jean Heyvaerts & Colin Norman.* 596, 1256 (2003)

Global Asymptomatic Solutions for Nonrelativistic Magnetohydrodynamic Jets and Winds. *Jean Heyvaerts & Colin Norman.* 596, 1270 (2003)

HIBINO, K. See AMENOMORI, M., et al. Multi-TeV Gamma-Ray Flares from Markarian 421 in 2000 and 2001 Observed with the Tibet Air Shower Array.

HICKEL, GABRIEL R. Optical Polarization and Near-Infrared Photometry of the Proto–Planetary Nebula Henize 3-1475. *Claudia V. Rodrigues, Francisco J. Jablonski, Jane Gregorio-Hetem, Gabriel R. Hickel, & Marilia J. Sartori.* 587, 312 (2003)

HICKEN, M. See MATHESON, T., et al. Photometry and Spectroscopy of GRB 030329 and Its Associated Supernova 2003dh: The First Two Months.

HICKS, AMALIA K. See GNEDIN, NICKOLAY Y., et al. Linear Gas Dynamics in the Expanding Universe.

HICKS, M. See TEEGARDEN, B. J., et al. Discovery of a New Nearby Star.

HIGDON, J. C. The Myriad-Source Model of Cosmic Rays. I. Steady State Age and Path Length Distributions. *J. C. Higdon & R. E. Lingenfelter.* 582, 330 (2003)

The Superbubble Origin of ^{22}Ne in Cosmic Rays. *J. C. Higdon & R. E. Lingenfelter.* 590, 822 (2003)

Actinides in the Source of Cosmic Rays and the Present Interstellar Medium. *R. E. Lingenfelter, J. C. Higdon, K.-L. Kratz, & B. Pfeiffer.* 591, 228 (2003)

HIGDON, J. L. *Infrared Space Observatory* Long-Wavelength Spectrometer Spectroscopy of Star-forming Regions in M33. *S. J. U. Higdon, J. L. Higdon, J. M. van der Hulst, & G. J. Stacey.* 592, 161 (2003)

HIGDON, JAMES L. A Minor-Merger Interpretation for NGC 1097's "Jets." *James L. Higdon & John F. Wallin.* 585, 281 (2003)

HIGDON, S. J. CO $J = 7 \rightarrow 6$ Observations of NGC 253: Cosmic-Ray–heated Warm Molecular Gas. *C. M. Bradford, T. Nikola, G. J. Stacey, A. D. Bolatto, J. M. Jackson, M. L. Savage, J. A. Davidson, & S. J. Higdon.* 586, 891 (2003)

HIGDON, S. J. U. *Infrared Space Observatory* Long-Wavelength Spectrometer Spectroscopy of Star-forming Regions in M33. *S. J. U. Higdon, J. L. Higdon, J. M. van der Hulst, & G. J. Stacey.* 592, 161 (2003)

HIGHBERGER, J. L. The Salty Scrambled Egg: Detection of NaCl toward CRL 2688. *J. L. Highberger, K. J. Thomson, P. A. Young, D. Arnett, & L. M. Ziurys.* 593, 393 (2003)

A Model for the Formation of High-Density Clumps in Proto–Planetary Nebulae. *Patrick A. Young, J. L. Highberger, David Arnett, & L. M. Ziurys.* 597, L53 (2003)

Detection of MgNC in CRL 618: Tracing Metal Chemistry in Asymptotic Giant Branch Evolution. *J. L. Highberger & L. M. Ziurys.* 597, 1065 (2003)

HILDEBRAND, ROGER H. Magnetic Fields in Cool Clouds within the Central 50 Parsecs of the Galaxy. *David T. Chuss, Jacqueline A. Davidson, Jessie L. Dotson, C. Darren Dowell, Roger H. Hildebrand, Giles Novak, & John E. Vaillancourt.* 599, 1116 (2003)

HILL, ALEX S. Pulsar Scintillation Arcs. I. Frequency Dependence. *Alex S. Hill, Daniel R. Stinebring, Henry A. Barnor, Daniel E. Berwick, & Aaron B. Webber.* 599, 457 (2003)

HILL, F. Temporal Variation of Angular Momentum in the Solar Convection Zone. *R. Komm, R. Howe, B. R. Durney, & F. Hill.* 586, 650 (2003)

A Comparison of Low-Degree Solar *p*-Mode Parameters from BiSON and GONG: Underlying Values and Temporal Variations. *R. Howe, W. J. Chaplin, Y. P. Elsworth, F. Hill, R. Komm, G. R. Isaak, & R. New.* 588, 1204 (2003)

A Comparison of Solar p-Mode Parameters from MDI and GONG: Mode Frequencies and Structure Inversion. *S. Basu, J. Christensen-Dalsgaard, R. Howe, J. Schou, M. J. Thompson, F. Hill, & R. Komm.* 591, 432 (2003)

HILL, G. C. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

HILL, G. J. See SCHAEFER, BRADLEY E., et al. GRB 021004: A Massive Progenitor Star Surrounded by Shells.

The Munich Near-Infrared Cluster Survey. II. The K-Band Luminosity Function of Field Galaxies to $z \sim 1.2$. *N. Drory, R. Bender, G. Feulner, U. Hopp, C. Maraston, J. Snigula, & G. J. Hill.* 595, 698 (2003)

HILL, G. M. See MARCHENKO, S. V., et al. The Unusual 2001 Periastron Passage in the "Clockwork" Colliding-Wind Binary WR 140.

HILL, J. M. Radio-selected Galaxis in Very Rich Clusters at $z \leq 0.25$. I. Multiwavelength Observations and Data Reduction Techniques. *G. E. Morrison, F. N. Owen, M. J. Ledlow, W. C. Keel, J. M. Hill, W. Voges, & T. Herter.* 146, 267 (2003)

HILL, K. See FIELDS, DALE L., et al. High-Precision Limb-Darkening Measurement of a K3 Giant Using Microlensing.

HILL, R. S. See BENNETT, C. L., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Preliminary Maps and Basic Results.

See BARNES, C., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Galactic Signal Contamination from Sidelobe Pickup.

See HINSHAW, G., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Data Processing Methods and Systematic Errors Limits.

See BENNETT, C. L., et al. First-Year *Wilkinson Microwave Anisotrophy Probe* (*WMAP*) Observations: Foreground Emission.

See HINSHAW, G., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: The Angular Power Spectrum.

HILL, ROBERT S. Emission-Line Galaxies in the STIS Parallel Survey. II. Star Formation Density. *Harry I. Teplitz, Nicholas R. Collins, Jonathan P. Gardner, Robert S. Hill, & Jason Rhodes.* 589, 704 (2003)

Emission-Line Galaxies in the Space Telescope Imaging Spectrograph Parallel Survey. I. Observations and Data Analysis. *Harry I. Teplitz, Nicholas R. Collins, Jonathan P. Gardner, Robert S. Hill, Sara R. Heap, Don J. Lindler, Jason Rhodes, & Bruce E. Woodgate.* 146, 209 (2003)

HILL, VANESSA. See BARBUY, BEATRIZ, et al. Oxygen Abundance in the Template Halo Giant HD 122563.

See SNEDEN, CHRISTOPHER, et al. The Extremely Metal-poor, Neutron Capture–rich Star CS 22892−052: A Comprehensive Abundance Analysis.

HILLAS, A. M. See HOLDER, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.

See HALL, T. A., et al. Search for TeV Emissions from Pulsars in Binary Systems.

See AKERLOF, C. W., et al. A Search for Correlations of TeV Gamma Rays with Ultra–High-Energy Cosmic Rays.

See DE LA CALLE PÉREZ, I., et al. Search for High-Energy Gamma Rays from an X-Ray–Selected Blazar Sample.

HILLENBRAND, L. A. Near-Infrared Interferometric Measurements of Herbig Ae/Be Stars. *J. A. Eisner, B. F. Lane, R. L. Akeson, L. A. Hillenbrand, & A. I. Sargent.* 588, 360 (2003)

HILLENBRAND, LYNNE. Accretion in Young Stellar/Substellar Objects. *James Muzerolle, Lynne Hillenbrand, Nuria Calvet, César Briceño, & Lee Hartmann.* 592, 266 (2003)

He I λ10830 as a Probe of Winds in Accreting Young Stars. *Suzan Edwards, William Fischer, John Kwan, Lynne Hillenbrand, & A. K. Dupree.* 599, L41 (2003)

HILLENBRAND, LYNNE A. Adaptive Optics Observations of Vega: Eight Detected Sources and Upper Limits to Planetary-Mass Companions. *Stanimir A. Metchev, Lynne A. Hillenbrand, & Russel J. White.* 582, 1102 (2003)

X-Rays in the Orion Nebula Cluster: Constraints on the Origins of Magnetic Activity in Pre–Main-Sequence Stars. *Eric D. Feigelson, James A. Gaffney III, Gordon Garmire, Lynne A. Hillenbrand, & Leisa Townsley.* 584, 911 (2003)

Model Spectral Energy Distributions of Circumstellar Debris Disks. I. Analytic Disk Density Distributions. *Sebastian Wolf & Lynne A. Hillenbrand.* 596, 603 (2003)

HILLENBRANDT, W. On the Small-Scale Stability of Thermonuclear Flames in Type Ia Supernovae. *F. K. Roepke, J. C. Niemeyer, & W. Hillenbrandt.* 588, 952 (2003)

HILLIER, D. J. Quantitative Spectroscopy of O Stars at Low Metallicity: O Dwarfs in NGC 346. *J.-C. Bouret, T. Lanz, D. J. Hillier, S. R. Heap, I. Hubeny, D. J. Lennon, L. J. Smith, & C. J. Evans.* 595, 1182 (2003)

HILLIER, D. JOHN. Latitude-dependent Effects in the Stellar Wind of η Carinae. *Nathan Smith, Kris Davidson, Theodore R. Gull, Kazunori Ishibashi, & D. John Hillier.* 586, 432 (2003)

A Tale of Two Stars: The Extreme O7 Iaf+ Supergiant AV 83 and the OC7.5 III((f)) Star AV 69. *D. John Hillier, T. Lanz, S. R. Heap, I. Hubeny, L. J. Smith, C. J. Evans, D. J. Lennon, & J. C. Bouret.* 588, 1039 (2003)

HILLMAN, LLOYD W. The Phase Coherence of Light from Extragalactic Sources: Direct Evidence against First-Order Planck-Scale Fluctuations in Time and Space. *Richard Lieu & Lloyd W. Hillman.* 585, L77 (2003)

HINDERKS, J. R. See BENSON, B. A., et al. Peculiar Velocity Limits from Measurements of the Spectrum of the Sunyaev-Zeldovich Effect in Six Clusters of Galaxies.

HINES, DEAN C. A *Hubble Space Telescope*/WFPC2 Snapshot Survey of 2MASS-selected Red QSOs. *Andrew R. Marble, Dean C. Hines, Gary D. Schmidt, Paul S. Smith, Jason A. Surace, Lee Armus, Roc M. Cutri, & Brant O. Nelson.* 590, 707 (2003)

Optical Spectropolarimetry of Quasi-stellar Objects Discovered by the Two-Micron All Sky Survey. *Paul S. Smith, Gary D. Schmidt, Dean C. Hines, & Craig B. Foltz.* 593, 676 (2003)

HINKLE, KENNETH H. See SMITH, VERNE V., et al. High-Resolution Infrared Spectroscopy of the Brown Dwarf ϵ Indi Ba.

HINOJOSA, G. See AGUILAR, A., et al. Absolute Photoionization Cross Section Measurements of O II Ions from 29.7 to 46.2 eV.

HINSHAW, G. See BENNETT, C. L., et al. The *Microwave Anisotropy Probe* Mission.

See PAGE, L., et al. The Optical Design and Characterization of the *Microwave Anisotropy Probe*.

See JAROSIK, N., et al. Design, Implementation, and Testing of the *Microwave Anisotropy Probe* Radiometers.

See BENNETT, C. L., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Preliminary Maps and Basic Results.

See JAROSIK, N., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: On-Orbit Radiometer Characterization.

See PAGE, L., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Beam Profiles and Window Functions.

See BARNES, C., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Galactic Signal Contamination from Sidelobe Pickup.

First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Data Processing Methods and Systematic Errors Limits. *G. Hinshaw, C. Barnes, C. L. Bennett, M. R. Greason, M. Halpern, R. S. Hill, N. Jarosik, A. Kogut, M. Limon, S. S. Meyer, N. Odegard, L. Page, D. N. Spergel, G. S. Tucker, J. L. Weiland, E. Wollack, & E. L. Wright.* 148, 63 (2003)

See BENNETT, C. L., et al. First-Year *Wilkinson Microwave Anisotrophy Probe* (*WMAP*) Observations: Foreground Emission.

See KOMATSU, E., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Tests of Gaussianity.

First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: The Angular Power Spectrum. *G. Hinshaw, D. N. Spergel, L. Verde, R. S. Hill, S. S. Meyer, C. Barnes, C. L. Bennett, M. Halpern, N. Jarosik, A. Kogut, E. Komatsu, M. Limon, L. Page, G. S. Tucker, J. L. Weiland, E. Wollack, & E. L. Wright.* 148, 135 (2003)

See KOGUT, A., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Temperature-Polarization Correlation.

See SPERGEL, D. N., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Determination of Cosmological Parameters.

See VERDE, L., et al. First-Year *Wilkinson Microwave Anisotrophy Probe* (*WMAP*) Observations: Parameter Estimation Methodology.

See PEIRIS, H. V., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Implications for Inflation.

See PAGE, L., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Interpretation of the TT and TE Angular Power Spectrum Peaks.

HINZ, PHIL M. See CLOSE, LAIRD M., et al. Mid-Infrared Imaging of the Post–Asymptotic Giant Branch Star AC Herculis with the Multiple Mirror Telescope Adaptive Optics System.

HINZ, PHILIP M. See KAROVSKA, MARGARITA, et al. Spatially Resolved Circumnuclear Dust in Centaurus A.

A Resolved Circumstellar Disk around the Herbig Ae Star HD 00546 in the Thermal Infrared. *Wilson M. Liu, Philip M. Hinz, Michael R. Meyer, Eric E. Mamajek, William F. Hoffman, & Joseph L. Hora.* 598, L111 (2003)

HIRANO, NAOMI. Molecular Outflow Search in the ρ Ophiuchi A and B2 Regions. *Takeshi Kamazaki, Masao Saito, Naomi Hirano, Tomofuni Umemoto, & Ryohei Kawabe.* 584, 357 (2003)

$H^{13}CO^+$ and CH_3OH Line Observations of Prestellar Dense Cores in the TMC-1C Region. II. Internal Structure. *Shigehisa Takakuwa, Takeshi Kamazaki, Masao Saito, & Naomi Hirano.* 584, 818 (2003)

Interaction between the Outflow and the Core in IRAM 04191+1522. *Shigehisa Takakuwa, Nagayoshi Ohashi, & Naomi Hirano.* 590, 932 (2003)

HIRANO, T. Rotational Rest Frequencies for FeN ($X\ ^2\Delta_i$) and Revised Spectroscopic Constants for FeC ($X\ ^3\Delta_i$). *P. M. Sheridan, L. M. Ziurys, & T. Hirano.* 593, L141 (2003)

Laboratory Submillimeter-Wave Detection of D_2H^+: A New Probe into Multiple Deuteration? *T. Hirano & T. Amano.* 597, L85 (2003)

HIROTA, TOMOYA. Mapping Observations of DNC and $HN^{13}C$ in Dark Cloud Cores. *Tomoya Hirota, Masafumi Ikeda, & Satoshi Yamamoto.* 594, 859 (2003)

HIROTANI, KOUICHI. Electrodynamics of an Outer Gap Accelerator: Formation of a Soft Power-Law Spectrum between 100 MeV and 3 GeV. *Kouichi Hirotani, Alice K. Harding, & Shinpei Shibata.* 591, 334 (2003)

HITZ, D. Measurements and Calculations of Photoionization Cross Sections of Multiply Charged Ions in Ground and Metastable States along the Isonuclear Series of Oxygen: O^{2+} to O^{4+}. *J.-P. Champeaux, J.-M. Bizau, D. Cubaynes, C. Blancard, S. Nahar, D. Hitz, J. Bruneau, & F. J. Wuilleumier.* 148, 583 (2003)

HIVON, E. See CRILL, B. P., et al. BOOMERANG: A Balloon-Borne Millimeter-Wave Telescope and Total Power Receiver for Mapping Anisotropy in the Cosmic Microwave Background.

See RUHL, J. E., et al. Improved Measurement of the Angular Power Spectrum of Temperature Anisotropy in the Cosmic Microwave Background from Two New Analyses of BOOMERANG Observations.

HIX, W. R. A New $^{17}F(p,\gamma)^{18}Ne$ Reaction Rate and Its Implications for Nova Nucleosynthesis. *S. Parete-Koon, W. R. Hix, M. S. Smith, S. Starrfield, D. W. Bardayan, M. W. Guidry, & A. Mezzacappa.* 598, 1239 (2003)

HJORTH, J. Delayed Soft X-Ray Emission Lines in the Afterglow of GRB 030227. *D. Watson, J. N. Reeves, J. Hjorth, P. Jakobsson, & K. Pedersen.* 595, L29 (2003)

Very High Column Density and Small Reddening toward GRB 020124 at $z = 3.20$. *J. Hjorth, P. Moller, J. Gorosabel, J. P. U. Fynbo, S. Toft, A. O. Jaunsen, A. A. Kaas, T. Pursimo, K. Torii, T. Kato, H. Yamaoka, A. Yoshida, B. Thomsen, M. I. Anderson, I. Burud, J. M. Castro Ceron, A. J. Castro-Tirado, A. S. Fruchter, L. Kaper, C. Kouveliotou, N. Masetti, E. Palazzi, H. Pedersen, E. Pian, J. Rhoads, E. Rol, N. R. Tanvir, P. M. Vreeswijk, R. A. M. J. Wijers, & E. P. J. van den Heuvel.* 597, 699 (2003)

See GREINER, J., et al. GRB 011121: A Collimated Outflow into Wind-blown Surroundings.

HO, C. Detection of Pulsed X-Ray Emission from *XMM-Newton* Observations of PSR J0538+2817. *K. E. McGowan, J. A. Kennea, S. Zane, F. A. Córdova, M. Cropper, C. Ho, T. Sasseen, & W. T. Vestrand.* 591, 380 (2003)

HO, LUIS C. The Radio Properties of Composite LINER/H II Galaxies: Erratum (ApJS, 142, 223 [2002]). *Mercedes E. Filho, Peter D. Barthel, & Luis C. Ho.* 144, 211 (2003) (Orig. paper in 142, 223 (2002))

See GEBHARDT, KARL, et al. Axisymmetric Dynamical Models of the Central Regions of Galaxies.

The Black Hole Masses and Host Galaxies of BL Lacertae Objects. *Aaron J. Barth, Luis C. Ho, & Wallace L. W. Sargent.* 583, 134 (2003)

A Search for "Dwarf" Seyfert Nuclei. VI. Properties of Emission-Line Nuclei in Nearby Galaxies. *Luis C. Ho, Alexei V. Filippenko, & Wallace L. W. Sargent.* 583, 159 (2003)

Emission and Absorption in the M87 LINER. *Bassem M. Sabra, Joseph C. Shields, Luis C. Ho, Aaron J. Barth, & Alexei V. Filippenko.* 584, 164 (2003)

A Stringent Limit on the Accretion Luminosity of the Possible Central Black Hole in the Globular Cluster M15. *Luis C. Ho, Yuichi Terashima, & Takashi Okajima.* 587, L35 (2003)

A Low-Mass Central Black Hole in the Bulgeless Seyfert 1 Galaxy NGC 4395. *Alexei V. Filippenko & Luis C. Ho.* 588, L13 (2003)

Detection of the "Active" Nucleus of M32. *Luis C. Ho, Yuichi Terashima, & James S. Ulvestad.* 589, 783 (2003)

Iron Emission in the $z = 6.4$ Quasar SDSS J114816.64+525150.3. *Aaron J. Barth, Paul Martini, Charles H. Nelson, & Luis C. Ho.* 594, L95 (2003)

HO, P. T. P. Variability of Sagittarius A*: Flares at 1 Millimeter. *Jun-Hui Zhao, K. H. Young, R. M. Herrnstein, P. T. P. Ho, T. Tsutsumi, K. Y. Lo, W. M. Goss, & G. C. Bower.* 586, L29 (2003)

Dual Cometary H II Regions in DR 21: Bow Shocks or Champagne Flows? *C. J. Cyganowski, M. J. Reid, V. L. Fish, & P. T. P. Ho.* 596, 344 (2003)

See TORRELLES, J. M., et al. Evidence for Evolution of the Outflow Collimation in Very Young Stellar Objects.

HO, PAUL T. P. The Binary Jet in L1551 IRS 5. *Luis F. Rodríguez, Alicia Porras, Mark J. Claussen, Salvador Curiel, David J. Wilner, & Paul T. P. Ho.* 586, L137 (2003)

See TRINIDAD, MIGUEL A., et al. Observations of Water Masers and Radio Continuum Emission in AFGL 2591.

HO, WYNN C. G. Transfer of Polarized Radiation in Strongly Magnetized Plasmas and Thermal Emission from Magnetars: Effect of Vacuum Polarization. *Dong Lai & Wynn C. G. Ho.* 588, 962 (2003)

Atmospheres and Spectra of Strongly Magnetized Neutron Stars. III. Partially Ionized Hydrogen Models. *Wynn C. G. Ho, Dong Lai, Alexander Y. Potekhin, & Gilles Chabrier.* 599, 1293 (2003)

HOARD, D. W. See ARAUJO-BETANCOR, S., et al. System Parameters of DW Ursae Majoris.

Cool Companions to White Dwarfs from the Two Micron All-Sky Survey Second Incremental Data Release. *Stefanie Wachter, D. W. Hoard, Kathryn H. Hansen, Rebecca E. Wilcox, Hilda M. Taylor, & Steven L. Finkelstein.* 586, 1356 (2003)

HOBBS, G. See MCLAUGHLIN, M. A., et al. PSR J1847−0130: A Radio Pulsar with Magnetar Spin Characteristics.

The Proper Motion, Age, and Initial Spin Period of PSR J0538+2817 in S147. *M. Kramer, A. G. Lyne, G. Hobbs, O. Löhmer, P. Carr, C. Jordan, & A. Wolszczan.* 593, L31 (2003)

HOBBS, L. M. See THORBURN, J. A., et al. Some Diffuse Interstellar Bands Related to Interstellar C_2 Molecules.

High-Resolution Observations of Interstellar Ca I Absorption—Implications for Depletions and Electron Densities in Diffuse Clouds. *Daniel E. Welty, L. M. Hobbs, & Donald C. Morton.* 147, 61 (2003)

HOBBS, LEWIS M. Observations of C_3 In Translucent Sight Lines. *Takeshi Oka, Julie A. Thorburn, Benjamin J. McCall, Scott D. Friedman, Lewis M. Hobbs, Paule Sonnentrucker, Daniel E. Welty, & Donald G. York.* 582, 823 (2003)

HÖFLICH, P. See SCHAEFER, BRADLEY E., et al. GRB 021004: A Massive Progenitor Star Surrounded by Shells.

Near-Infrared Spectra of Type Ia Supernovae. *G. H. Marion, P. Höflich, W. D. Vacca, & J. C. Wheeler.* 591, 316 (2003)

See KAWABATA, K. S., et al. On the Spectrum and Spectropolarimetry of Type Ic Hypernova SN 2003dh/GRB 030329.

HÖFLICH, PETER. See WANG, LIFAN, et al. Spectropolarimetry of SN 2001el in NGC 1448: Asphericity of a Normal Type Ia Supernova.

Spectropolarimetry of the Type Ic Supernova SN 2002ap in M74: More Evidence for Asymmetric Core Collapse. *Lifan Wang, Dietrich Baade, Peter Höflich, & J. Craig Wheeler.* 592, 457 (2003)

See KASEN, DANIEL, et al. Analysis of the Flux and Polarization Spectra of the Type Ia Supernova SN 2001el: Exploring the Geometry of the High-Velocity Ejecta.

HÖFLICH, PETER A. Chemical Substructure in the Milky Way Halo: A New Population of Old Stars. *Inese I. Ivans, Christopher Sneden, C. Renée James, George W. Preston, Jon P. Fulbright, Peter A. Höflich, Bruce W. Carney, & J. Craig Wheeler.* 592, 906 (2003)

HOEKSTRA, HENK. The Incidence of Strong-Lensing Clusters in the Red-Sequence Cluster Survey. *Michael D. Gladders, Henk Hoekstra, H. K. C. Yee, Patrick B. Hall, & L. Felipe Barrientos.* 593, 48 (2003)

HOFFMAN, C. M. See ATKINS, R., et al. The High-Energy Gamma-Ray Fluence and Energy Spectrum of GRB 970417A from Observations with Milagrito.

See FALCONE, A., et al. Observation of GeV Solar Energetic Particles from the 1997 November 6 Event Using Milagrito.

See ATKINS, R., et al. Observation of TeV Gamma Rays from the Crab Nebula with Milagro Using a New Background Rejection Technique.

HOFFMAN, I. M. The Sizes of OH (1720 MHz) Supernova Remnant Masers: MERLIN and Very Long Baseline Array Observations of IC 443. *I. M. Hoffman, W. M. Goss, C. L. Brogan, M. J. Claussen, & A. M. S. Richards.* 583, 272 (2003)

HOFFMAN, IAN M. The Formaldehyde Masers in NGC 7538 and G29.96−0.02: Very Long Baseline Array, Multielement Radio-linked Interferometer Network, and Very Large Array Observations. *Ian M. Hoffman, W. M. Goss, Patrick Palmer, & A. M. S. Richards.* 598, 1061 (2003)

HOFFMAN, JENNIFER L. Spectroscopic and Spectropolarimetric Observations of V838 Monocerotis. *John P. Wisniewski, Nancy D. Morrison, Karen S. Bjorkman, Anatoly S. Miroshnichenko, Amanda C. Gault, Jennifer L. Hoffman, Marilyn R. Meade, & Jason M. Nett.* 588, 486 (2003)

The Effect of Multiple Scattering on the Polarization from Binary Star Envelopes. I. Self- and Externally Illuminated Disks. *Jennifer L. Hoffman, Barbara A. Whitney, & Kenneth H. Nordsieck.* 598, 572 (2003)

HOFFMAN, R. D. Nucleosynthesis in Gamma-Ray Burst Accretion Disks. *Jason Pruet, S. E. Woosley, & R. D. Hoffman.* 586, 1254 (2003)

HOFFMAN, WILLIAM F. See CLOSE, LAIRD M., et al. Mid-Infrared Imaging of the Post–Asymptotic Giant Branch Star AC Herculis with the Multiple Mirror Telescope Adaptive Optics System.

A Resolved Circumstellar Disk around the Herbig Ae Star HD 00546 in the Thermal Infrared. *Wilson M. Liu, Philip M. Hinz, Michael R. Meyer, Eric E. Mamajek, William F. Hoffman, & Joseph L. Hora.* 598, L111 (2003)

HOFFMAN, YEHUDA. Constrained Simulations of the Real Universe: The Local Supercluster. *Anatoly Klypin, Yehuda Hoffman, Andrey V. Kravtsov, & Stefan Gottlöber.* 596, 19 (2003)

HOFFMANN, TADZIU L. Ionizing Photon Emission Rates from O- and Early B-Type Stars and Clusters. *Amiel Sternberg, Tadziu L. Hoffmann, & A. W. A. Pauldrach.* 599, 1333 (2003)

HOFFMANN, WILLIAM F. See KRAEMER, KATHLEEN E., et al. Five Star-forming Cores in the Galactic Ring Survey: A Mid-Infrared Study.

See KAROVSKA, MARGARITA, et al. Spatially Resolved Circumnuclear Dust in Centaurus A.

HOFMANN, R. See GENZEL, R., et al. The Stellar Cusp around the Supermassive Black Hole in the Galactic Center.

HOFNER, P. Resolution of Distance Ambiguities of Inner Galaxy Massive Star Formation Regions. I. *C. Watson, E. Araya, M. Sewilo, E. Churchwell, P. Hofner, & S. Kurtz.* 587, 714 (2003)

Further Discoveries of ^{12}CO in Low Surface Brightness Galaxies. *K. O'Neil, E. Schinnerer, & P. Hofner.* 588, 230 (2003)

HOFNER, PETER. A C-Band Spectral Scan of IRC +10°216. *Esteban Araya, Peter Hofner, Paul Goldsmith, Slava Slysh, & Shuro Takano.* 596, 556 (2003)

HOGAN, CRAIG. See TONRY, JOHN L., et al. Cosmological Results from High-z Supernovae.

HOGERHEIJDE, MICHIEL R. Indications for Grain Growth and Mass Decrease in Cold Dust Disks around Classical T Tauri Stars in the MBM 12 Young Association. *Michiel R. Hogerheijde, Doug Johnstone, Isamu Matsuyama, Ray Jayawardhana, & James Muzerolle.* 593, L101 (2003)

HOGG, DAVID W. The Overdensities of Galaxy Environments as a Function of Luminosity and Color. *David W. Hogg, Michael R. Blanton, Daniel J. Eisenstein, James E. Gunn, David J. Schlegel, Idit Zehavi, Neta A. Bahcall, Jon Brinkmann, Istvan Csabai, Donald P. Schneider, David H. Weinberg, & Donald G. York.* 585, L5 (2003)

See EISENSTEIN, DANIEL J., et al. Average Spectra of Massive Galaxies in the Sloan Digital Sky Survey.

See BLANTON, MICHAEL R., et al. The Galaxy Luminosity Function and Luminosity Density at Redshift $z = 0.1$.

See BLANTON, MICHAEL R., et al. The Broadband Optical Properties of Galaxies with Redshifts $0.02 < z < 0.22$.

HOLBERG, J. B. An Archive of *IUE* Low-Dispersion Spectra of the White Dwarf Stars. *J. B. Holberg, M. A. Barstow, & M. R. Burleigh.* 147, 145 (2003)

HOLDEN, B. P. See FOSBURY, R. A. E., et al. Massive Star Formation in a Gravitationally Lensed H II Galaxy at $z = 3.357$.

HOLDEN, BRAD P. See BLAKESLEE, JOHN P., et al. Advanced Camera for Surveys Photometry of the Cluster RDCS 1252.9−2927: The Color-Magnitude Relation at $z = 1.24$.

HOLDER, GILBERT P. Probing the Reionization History of the Universe using the Cosmic Microwave Background Polarization. *Manoj Kaplinghat, Mike Chu, Zoltan Haiman, Gilbert P. Holder, Lloyd Knox, & Constantinos Skordis.* 583, 24 (2003)

External Shear in Quadruply Imaged Lens Systems. *Gilbert P. Holder & Paul L. Schechter.* 589, 688 (2003)

Cluster Sunyaev-Zeldovich Effect Scaling Relations. *Ian G. McCarthy, Arif Babul, Gilbert P. Holder, & Michael L. Balogh.* 591, 515 (2003)

The Sunyaev-Zeldovich Effect Signature of Excess Entropy in Distant, Massive Clusters. *Ian G. McCarthy, Gilbert P. Holder, Arif Babul, & Michael L. Balogh.* 591, 526 (2003)

The Reionization History at High Redshifts. I. Physical Models and New Constraints from Cosmic Microwave Background Polarization. *Zoltán Haiman & Gilbert P. Holder.* 595, 1 (2003)

The Reionization History at High Redshifts. II. Estimating the Optical Depth to Thomson Scattering from Cosmic Microwave Background Polarization. *Gilbert P. Holder, Zoltán Haiman, Manoj Kaplinghat, & Lloyd Knox.* 595, 13 (2003)

HOLDER, J. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope. *J. Holder, I. H. Bond, P. J. Boyle, S. M. Bradbury, J. H. Buckley, D. A. Carter-Lewis, W. Cui, C. Dowdall, C. Duke, I. de la Calle Perez, A. Falcone, D. J. Fegan, S. J. Fegan, J. P. Finley, L. Fortson, J. A. Gaidos, K. Gibbs, S. Gammell, J. Hall, T. A. Hall, A. M. Hillas, D. Horan, M. Jordan, M. Kertzman, D. Kieda, J. Kildea, J. Knapp, K. Kosack, H. Krawczynski, F. Krennrich, S. LeBohec, E. T. Linton, J. Lloyd-Evans, P. Moriarty, D. Müller, T. N. Nagai, R. Ong, M. Page, R. Pallassini, D. Petry, B. Power-Mooney, J. Quinn, P. Rebillot, P. T. Reynolds, H. J. Rose, M. Schroedter, G. H. Sembroski, S. P. Swordy, V. V. Vassiliev, S. P. Wakely, G. Walker, & T. C. Weekes.* 583, L9 (2003)

See DE LA CALLE PÉREZ, I., et al. Search for High-Energy Gamma Rays from an X-Ray–Selected Blazar Sample.

HOLLAND, S. T. See GARNAVICH, P. M., et al. Discovery of the Low-Redshift Optical Afterglow of GRB 011121 and Its Progenitor Supernova SN 2001ke.

See BERSIER, D., et al. The Strongly Polarized Afterglow of GRB 020405.

See STANEK, K. Z., et al. Spectroscopic Discovery of the Supernova 2003dh Associated with GRB 030329.

See MATHESON, T., et al. Photometry and Spectroscopy of GRB 03029 and Its Associated Supernova 2003dh: The First Two Months.

HOLLAND, STEPHEN T. See TONRY, JOHN L., et al. Cosmological Results from High-z Supernovae.

HOLLAND, W. S. Submillimeter Observations of an Asymmetric Dust Disk around Fomalhaut. *W. S. Holland, J. S. Greaves, W. R. F. Dent, M. C. Wyatt, B. Zuckerman, R. A. Webb, C. McCarthy, I. M. Coulson, E. I. Robson, & W. K. Gear.* 582, 1141 (2003)

HOLLENBACH, DAVID. Neutral Atomic Phases of the Interstellar Medium in the Galaxy. *Mark G. Wolfire, Christopher F. McKee, David Hollenbach, & A. G. G. M. Tielens.* 587, 278 (2003)

HOLLENBACH, DAVID J. Time Dependence of the Ultraviolet Radiation Field in the Local Interstellar Medium. *Antonio Parravano, David J. Hollenbach, & Christopher F. McKee.* 584, 797 (2003)

HOLLIS, J. M. A Sensitive Very Large Array Search for Small-Scale Glycine Emission toward OMC-1. *J. M. Hollis, J. A. Pedelty, L. E. Snyder, P. R. Jewell, F. J. Lovas, Patrick Palmer, & S.-Y. Liu.* 588, 353 (2003)

HOLLIS, JAN M. Kinematics of the SGR B2 (N-LMH) Molecular Core. *Jan M. Hollis, J. A. Pedelty, D. A. Boboltz, S.-Y. Liu, L. E. Snyder, Patrick Palmer, F. J. Lovas, & P. R. Jewell.* 596, L235 (2003)

HOLMAN, G. D. See LIN, R. P., et al. *RHESSI* Observations of Particle Acceleration and Energy Release in an Intense Solar Gamma-Ray Line Flare.

HOLMAN, GORDON D. The Effects of Low- and High-Energy Cutoffs on Solar Flare Microwave and Hard X-Ray Spectra. *Gordon D. Holman.* 586, 606 (2003)

Electron Bremsstrahlung Hard X-Ray Spectra, Electron Distributions, and Energetics in the 2002 July 23 Solar Flare. *Gordon D. Holman, Linhui Sui, Richard A. Schwartz, & A. Gordon Emslie.* 595, L97 (2003)

Evidence for the Formation of a Large-Scale Current Sheet in a Solar Flare. *Linhui Sui & Gordon D. Holman.* 596, L251 (2003)

HOLMAN, M. J. See BERSIER, D., et al. The Strongly Polarized Afterglow of GRB 020405.

See BERSIER, D., et al. The Unusual Optical Afterglow of the Gamma-Ray Burst GRB 021004: Color Changes and Short-Timescale Variability.

HOLMAN, MATTHEW J. The Geometry of Resonant Signatures in Debris Disks with Planets. *Marc J. Kuchner & Matthew J. Holman.* 588, 1110 (2003)

The Short Rotation Period of Nereid. *Tommy Gray, Matthew J. Holman, & J. J. Kavelaars.* 591, L71 (2003)

HOLMES, ELIZABETH K. Resonant Structure in the Kuiper Disk: An Asymmetric Plutino Disk. *Elizabeth K. Holmes, Stanley F. Dermott, Bo Å. S. Gustafson, & Keith Grogan.* 597, 1211 (2003)

HOLT, J. Decline of the Space Density of Quasars between $z = 2$ and $z = 4$. *M. Vigotti, R. Carballo, C. R. Benn, G. De Zotti, R. Fanti, J. I. Gonzalez Serrano, K.-H. Mack, & J. Holt.* 591, 43 (2003)

HOLT, S. S. *Chandra* Observation of the X-Ray Source Population of NGC 6946. *S. S. Holt, E. M. Schlegel, U. Hwang, & R. Petre.* 588, 792 (2003)

A *Chandra* Observation of The Diffuse Emission in the Face-on Spiral NGC 6946. *Eric M. Schlegel, S. S. Holt, & R. Petre.* 598, 982 (2003)

HOLTZMAN, J. See PRICE, P. A., et al. GRB 010921: Strong Limits on an Underlying Supernova from the *Hubble Space Telescope*.

See PRICE, P. A., et al. Discovery of GRB 020405 and Its Late Red Bump.

HOLTZMAN, J. A. Keck Spectroscopy and *Hubble Space Telescope* Imaging of GRB 000926: Probing a Host Galaxy at $z = 2.038$. *S. Castro, T. J. Galama, F. A. Harrison, J. A. Holtzman, J. S. Bloom, S. G. Djorgovski, & S. R. Kulkarni.* 586, 128 (2003)

HOLTZMAN, JON A. Structure of Disk-dominated Galaxies. II. Bulge/Disk Parameters, Simulations, and Secular Evolution. *Lauren A. MacArthur, Stephanie Courteau, & Jon A. Holtzman.* 582, 689 (2003)

See PRADA, FRANCISCO, et al. Observing the Dark Matter Density Profile of Isolated Galaxies.

HOLZ, DANIEL E. Corrective Lenses for High-Redshift Supernovae. *Neal Dalal, Daniel E. Holz, Xuelei Chen, & Joshua A. Frieman.* 585, L11 (2003)

HOLZAPFEL, W. L. See MASON, B. S., et al. The Anisotropy of the Microwave Background to $l = 3500$: Deep Field Observatons with the Cosmic Background Imager.

See PEARSON, T. J., et al. The Anisotropy of the Microwave Background to $l = 3500$: Mosaic Observations with the Cosmic Background Imager.

See SIEVERS, J. L., et al. Cosmological Parameters from Cosmic Background Imager Observations and Comparisons with BOOMERANG, DASI, and MAXIMA.

See RUNYAN, M. C., et al. ACBAR: The Arcminute Cosmology Bolometer Array Receiver.

See GOLDSTEIN, J. H., et al. Estimates of Cosmological Parameters Using the Cosmic Microwave Background Angular Power Spectrum of ACBAR.

HOLZAPFEL, WILLIAM L. See LAROQUE, SAMUEL J., et al. Sunyaev-Zeldovich Effect Imaging of MACS Galaxy Clusters at $z > 0.5$.

HOLZER, THOMAS E. Two-dimensional Magnetohydrodynamic Models of the Solar Corona: Mass Loss from the Streamer Belt. *Eirik Endeve, Egil Leer, & Thomas E. Holzer.* 589, 1040 (2003)

HOMAN, D. C. Jet Collimation in Action: Realignment on Kiloparsec Scales in 3C 279. *D. C. Homan, M. L. Lister, K. I. Kellermann, M. H. Cohen, E. Ros, J. A. Zensus, M. Kadler, & R. C. Vermeulen.* 589, L9 (2003)

HOMAN, J. The Complete Z-Diagram of LMC X-2. *A. P. Smale, J. Homan, & E. Kuulkers.* 590, 1035 (2003)

HOMAN, JEROEN. High-Frequency Quasi-Periodic Oscillations in the Black Holes X-Ray Transient XTE J1650−500. *Jeroen Homan, Marc Klein-Wolt, Sabrina Rossi, Jon M. Miller, Rudy Wijnands, Tomaso Belloni, Michiel van der Klis, & Walter H. G. Lewin.* 586, 1262 (2003)

A *Chandra* Observation of the Neutron Star X-Ray Transient and Eclipsing Binary MXB 1659−29 in Quiescence. *Rudy Wijnands, Mike Nowak, Jon M. Miller, Jeroen Homan, Stefanie Wachter, & Walter H. H. Lewin.* 594, 952 (2003)

HOMER, LEE. See POOLEY, DAVID, et al. Dynamical Formation of Close Binary Systems in Globular Clusters.

HONDA, M. See SUMI, T., et al. Microlensing Optical Depth toward the Galactic Bulge from Microlensing Observations during 2000 with Difference Image Analysis.

HONDA, MITSUHIKO. K3-50A: An Ultracompact H II Region Ionized by a Massive Stellar Cluster. *Yoshiko K. Okamoto, Hirokazu Kataza, Takuya Yamashita, Takashi Miyata, Shigeyuki Sako, Shinya Takubo, Mitsuhiko Honda, & Takashi Onaka.* 584, 368 (2003)

Detection of Crystalline Silicates around the T Tauri Star Hen 3-600A. *Mitsuhiko Honda, Hirokazu Kataza, Yoshiko K. Okamoto, Takashi Miyata, Takuya Yamashita, Shigeyuki Sako, Shinya Takubo, & Takashi Onaka.* 585, L59 (2003)

HONDA, SATOSHI. Measurement of the Europium Isotope Ratio for the Extremely Metal-poor, *r*-Process–enhanced Star CS 31082-001. *Wako Aoki, Satoshi Honda, Timothy C. Beers, & Christopher Sneden.* 586, 506 (2003)

HONEIN, ALBERT. Thermal Conduction in Magnetized Turbulent Gas. *Jungyeon Cho, A. Lazarian, Albert Honein, Bernard Knaepen, Stavros Kassinos, & Parviz Moin.* 589, L77 (2003)

HONG, SEUNG SOO. The Effect of Cosmic-Ray Diffusion on the Parker Instability. *Dongsu Ryu, Jongsoo Kim, Seung Soo Hong, & T. W. Jones.* 589, 338 (2003)

HONMA, M. See SUMI, T., et al. Microlensing Optical Depth toward the Galactic Bulge from Microlensing Observations during 2000 with Difference Image Analysis.

HOOK, I. See KNOP, R. A., et al. New Constraints on Ω_M, Ω_Λ, and w from an Independent Set of 11 High-Redshift Supernovae Observed with the *Hubble Space Telescope*.

HOOK, R. N. See FOSBURY, R. A. E., et al. Massive Star Formation in a Gravitationally Lensed H II Galaxy at $z = 3.357$.

HOOPER, ERIC J. See KURASZKIEWICZ, JOANNA K., et al. The Far-Infrared Spectral Energy Distributions of X-Ray–selected Active Galaxies.

HOOPES, C. See MATHESON, T., et al. Photometry and Spectroscopy of GRB 03029 and Its Associated Supernova 2003dh: The First Two Months.

HOOPES, C. G. Abundances in the Neutral Interstellar Medium of I Zw 18 from *Far Ultrviolet Spectroscopic Explorer* Observations. *A. Aloisi, S. Savaglio, T. M. Heckman, C. G. Hoopes, C. Leitherer, & K. R. Sembach.* 595, 760 (2003)

HOOPES, CHARLES. Synthetic High-Resolution Line Spectra of Star-forming Galaxies below 1200 A. *Carmelle Robert, Anne Pellerin, Alessandra Aloisi, Claus Leitherer, Charles Hoopes, & Timothy M. Heckman.* 144, 21 (2003)

HOOPES, CHARLES G. Optical Spectroscopy and Ionization Models of the Diffuse Ionized Gas in M33, M51/NGC 5195, and M81. *Charles G. Hoopes & René A. M. Walterbos.* 586, 902 (2003)

Deuterium toward Two Milky Way Disk Stars: Probing Extended Sight Lines with the *Far Ultraviolet Spectroscopic Explorer*. *Charles G. Hoopes, Kenneth R. Sembach, Guillaume Hébrard, H. Warren Moos, & David C. Knauth.* 586, 1094 (2003)

Cooling in Coronal Gas in the M82 Starburst Superwind. *Charles G. Hoopes, Timothy M. Heckman, David K. Strickland, & J. Christopher Howk.* 596, L175 (2003)

HOOVER, RICHARD B. The Solar Chromosphere/Corona Interface. I. Far-Ultraviolet to Extreme-Ultraviolet Observations and Modeling of Unresolved Coronal Funnels. *Dennis S. Martínez-Galarce, Arthur B. C. Walker II, Troy W. Barbee II, & Richard B. Hoover.* 585, 1095 (2003)

HOPKINS, A. Dependence of Dust Obscuration on Star Formation Rates in Galaxies. *J. Afonso, A. Hopkins, B. Mobasher, & C. Almeida.* 597, 269 (2003)

HOPKINS, A. M. Star Formation Rate Indicators in the Sloan Digital Sky Survey. *A. M. Hopkins, C. J. Miller, R. C. Nichol, A. J. Connolly, M. Bernardi, P. L. Gónez, T. Goto, C. A. Tremonti, J. Brinkmann, Ž. Ivezić, & D. Q. Lamb.* 599, 971 (2003)

HOPKINS, ANDREW M. See GOMEZ, PERCY L., et al. Galaxy Star Formation as a Function of Environment in the Early Data Release of the Sloan Digital Sky Survey.

The Environment of Active Galactic Nuclei in the Sloan Digital Sky Survey. *Christopher J. Miller, Robert C. Nichol, Percy L. Gómez, Andrew M. Hopkins, & Mariangela Bernardi.* 597, 142 (2003)

HOPMAN, CLOVIS. Orbital In-Spiral into a Massive Black Hole in a Galactic Center. *Tal Alexander & Clovis Hopman.* 590, L29 (2003)

HOPP, U. The Munich Near-Infrared Cluster Survey. II. The *K*-Band Luminosity Function of Field Galaxies to $z \sim 1.2$. *N. Drory, R. Bender, G. Feulner, U. Hopp, C. Maraston, J. Snigula, & G. J. Hill.* 595, 698 (2003)

HORA, J. L. *Hubble Space Telescope*/NICMOS Near-Infrared Imaging of the Proto–Planetary Nebula OH 231.8+4.2. *C. A. Meakin, J. H. Bieging, W. B. Latter, J. L. Hora, & A. G. G. M. Tielens.* 585, 482 (2003)

HORA, JOSEPH L. See KRAEMER, KATHLEEN E., et al. Five Star-forming Cores in the Galactic Ring Survey: A Mid-Infrared Study.

See KAROVSKA, MARGARITA, et al. Spatially Resolved Circumnuclear Dust in Centaurus A.

A Resolved Circumstellar Disk around the Herbig Ae Star HD 00546 in the Thermal Infrared. *Wilson M. Liu, Philip M. Hinz, Michael R. Meyer, Eric E. Mamajek, William F. Hoffman, & Joseph L. Hora.* 598, L111 (2003)

HORAN, D. See HOLDER, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.

See HALL, T. A., et al. Search for TeV Emissions from Pulsars in Binary Systems.

See DE LA CALLE PÉREZ, I., et al. Search for High-Energy Gamma Rays from an X-Ray–Selected Blazar Sample.

HORIUCHI, SHINJI. Linear Polarization Observations of Water Masers in W3 IRS 5. *Hiroshi Imai, Shinji Horiuchi, Shuji Deguchi, & Osamu Kameya.* 595, 285 (2003)

HORNER, DONALD J. Constraints on the Cluster Environments and Hot Spot Magnetic Field Strengths of the Radio Sources 3C 280 and 3C 254. *Megan Donahue, Ruth A. Daly, & Donald J. Horner.* 584, 643 (2003)

HORNSCHEMEIER, A. E. Very High Redshift X-Ray–selected Active Galactic Nuclei in the *Chandra* Deep Field–North. *A. J. Barger, L. L. Cowie, P. Capak, D. M. Alexander, F. E. Bauer, W. N. Brandt, G. P. Garmire, & A. E. Hornschemeier.* 584, L61 (2003)

HORNSTEIN, S. D. See GHEZ, A. M., et al. The First Measurement of Spectral Lines in a Short-Period Star Bound to the Galaxy's Central Black Hole: A Paradox of Youth.

HORNSTRUP, A. See VIKHLININ, A., et al. Cosmological Constraints from the Evolution of the Cluster Baryon Mass Function at $z \sim 0.5$.

See MULLIS, C. R., et al. The 160 Square Degree *ROSAT* Survey: The Revised Catalog of 201 Clusters with Spectroscopic Redshifts.

Chandra Observations of the NGC 1550 Galaxy Group: Implication for the Temperature and Entropy Profiles of 1 keV Galaxy Groups. *M. Sun, W. Forman, A. Vikhlinin, A. Hornstrup, C. Jones, & S. S. Murray.* 598, 250 (2003)

HOROWITZ, C. J. Low-Mass Neutron Stars and the Equation of State of Dense Matter. *J. Carriere, C. J. Horowitz, & J. Piekarewicz.* 593, 463 (2003)

HOTAN, A. PSR J1909−3744: A Binary Millisecond Pulsar with a Very Small Duty Cycle. *B. A. Jacoby, M. Bailes, M. H. van Kerkwijk, S. Ord, A. Hotan, S. R. Kulkarni, & S. B. Anderson.* 599, L99 (2003)

HOTAN, A. W. Self-Consistency of Relativistic Observables with General Relativity in the White Dwarf–Neutron Star Binary PSR J1141−6545. *M. Bailes, S. M. Ord, H. S. Knight, & A. W. Hotan.* 595, L49 (2003)

HOTTA, N. See AMENOMORI, M., et al. Multi-TeV Gamma-Ray Flares from Markarian 421 in 2000 and 2001 Observed with the Tibet Air Shower Array.

HOUCK, JOHN C. *RXTE*, *ROSAT*, and *ASCA* Observations of G347.3−0.5 (RX J1713.7−3946): Probing Cosmic-Ray Acceleration by a Galactic Shell-Type Supernova Remnant. *Thomas G. Pannuti, Glenn E. Allen, John C. Houck, & Steven J. Sturner.* 593, 377 (2003)

X-Ray Emission from a Sample of Young Supernovae. *Joel N. Bregman, John C. Houck, Roger A. Chevalier, & Morton S. Roberts.* 596, 323 (2003)

HOUGH, J. H. Simultaneous Optical and Near-Infrared Spectropolorimetry of Type 2 Seyfert Galaxies. *Makoto Watanabe, Tetsuya Nagata, Shuji Sato, Hidehiko Nakaya, & J. H. Hough.* 591, 714 (2003)

HOVLAND, E. See COLAVITA, M., et al. Observations of DG Tauri with the Keck Interferometer.

HOWARD, ERIC M. The Compact H II Region S88B: Excitation and Extinction. *Jennifer A. Goetz, Robert Gutermuth, Judith L. Pipher, William J. Forrest, & Eric M. Howard.* 599, 1173 (2003)

HOWARD, R. A. Identification of Solar Sources of Major Geomagnetic Storms between 1996 and 2000. *J. Zhang, K. P. Dere, R. A. Howard, & V. Bothmer.* 582, 520 (2003)

Prominence Eruptions and Coronal Mass Ejection: A Statistical Study using Microwave Observations. *N. Gopalswamy, M. Shimojo, W. Lu, S. Yashiro, K. Shibasaki, & R. A. Howard.* 586, 562 (2003)

Constraints on Coronal Mass Ejection Dynamics from Simultaneous Radio and White-Light Observations. *M. J. Reiner, A. Vourlidas, O. C. St. Cyr, J. T. Burkepile, R. A. Howard, M. L. Kaiser, N. P. Prestage, & J.-L. Bougeret.* 590, 533 (2003)

Coronal Mass Ejections and Solar Polarity Reversal. *N. Gopalswamy, A. Lara, S. Yashiro, & R. A. Howard.* 598, L63 (2003)

Direct Detection of a Coronal Mass Ejection–Associated Shock in Large Angle and Spectrometric Coronagraph Experiment White-Light Images. *A. Vourlidas, S. T. Wu, A. H. Wang, P. Subramanian, & R. A. Howard.* 598, 1392 (2003)

HOWARTH, IAN D. The Remarkable Alternating Spectra of the Of?p Star HD 191612. *Nolan R. Walborn, Ian D. Howarth, Artemio Herrero, & Daniel J. Lennon.* 588, 1025 (2003)

HOWE, JOHN E. A Survey of 557 GHz Water Vapor Emission in the NGC 1333 Molecular Cloud. *Edwin A. Bergin, Michael J. Kaufman, Gary J. Melnick, Ronald L. Snell, & John E. Howe.* 582, 830 (2003)

HOWE, R. Temporal Variation of Angular Momentum in the Solar Convection Zone. *R. Komm, R. Howe, B. R. Durney, & F. Hill.* 586, 650 (2003)

A Comparison of Low-Degree Solar p-Mode Parameters from BiSON and GONG: Underlying Values and Temporal Variations. *R. Howe, W. J. Chaplin, Y. P. Elsworth, F. Hill, R. Komm, G. R. Isaak, & R. New.* 588, 1204 (2003)

A Comparison of Solar p-Mode Parameters from MDI and GONG: Mode Frequencies and Structure Inversion. *S. Basu, J. Christensen-Dalsgaard, R. Howe, J. Schou, M. J. Thompson, F. Hill, & R. Komm.* 591, 432 (2003)

HOWELL, D. A. See KASEN, DANIEL, et al. Analysis of the Flux and Polarization Spectra of the Type Ia Supernova SN 2001el: Exploring the Geometry of the High-Velocity Ejecta.

See KNOP, R. A., et al. New Constraints on Ω_M, Ω_Λ, and w from an Independent Set of 11 High-Redshift Supernovae Observed with the *Hubble Space Telescope*.

HOWELL, STEVE B. *Hubble Space Telescope* STIS Spectroscopy of the White Dwarfs in the Ultrashort-Period Dwarf Novae VY Aquarii and WX Ceti. *Edward M. Sion, Paula Szkody, Fuhua Cheng, Boris T. Gänsicke, & Steve B. Howell.* 583, 907 (2003)

Hubble Space Telescope Space Telescope Imaging Spectrograph Spectroscopy of the Intermediate Polar EX Hydrae. *Kunegunda E. Belle, Steve B. Howell, Edward M. Sion, Knox S. Long, & Paula Szkody.* 587, 373 (2003)

See SION, EDWARD M., et al. *Hubble Space Telescope* Spectroscopy of the Unexpected 2001 July Outburst of the Dwarf Nova WZ Sagittae.

HOWES, GREGORY G. Gradient Particle Magnetohydrodynamics: A Lagrangian Particle Code for Astrophysical Magnetohydrodynamics. *Jason L. Maron & Gregory G. Howes.* 595, 564 (2003)

HOWK, J. C. Highly Ionized Gas in the Galactic Halo: A *FUSE* Survey of O VI Absorption toward 22 Halo Stars. *J. Zsargó, K. R. Sembach, J. C. Howk, & B. D. Savage.* 586, 1019 (2003)

Probing O VI Emission in the Halos of Edge-On Spiral Galaxies. *B. Otte, E. M. Murphy, J. C. Howk, Q. D. Wang, W. R. Oegerle, & K. R. Sembach.* 591, 821 (2003)

See ANDRÉ, M. K., et al. Oxygen Gas-Phase Abundance Revisited.

HOWK, J. CHRISTOPHER. Origins of the Highly Ionized Gas along the Line of Sight toward HD 116852. *Andrew J. Fox, Blair D. Savage, Kenneth R. Sembach, Dirk Fabian, Philipp Richter, David M. Meyer, James Lauroesch, & J. Christopher Howk.* 582, 793 (2003)

Ionized Gas in the First 10 Kiloparsecs of the Interstellar Galactic Halo. *J. Christopher Howk, Kenneth R. Sembach, & Blair D. Savage.* 586, 249 (2003)

Far-Ultraviolet and Hα Spectroscopy of SNR 0057−7226 in the Small Magellanic Cloud H II Region N66. *Charles W. Danforth, Ravi Sankrit, William P. Blair, J. Christopher Howk, & You-Hua Chu.* 586, 1179 (2003)

Interstellar Deuterium, Nitrogen, and Oxygen Abundances toward GD 246, WD 2331−475, HZ 21, and Lanning 23: Results from the *FUSE* Mission. *Cristina M. Oliveira, Guillaume Hébrard, J. Christopher Howk, Jeffrey W. Kruk, Pierre Chayer, & H. Warren Moos.* 587, 235 (2003)

On the Origin of the High-Ionization Intermediate-Velocity Gas toward HD 14434. *David C. Knauth, J. Christopher Howk, Kenneth R. Sembach, James T. Lauroesch, & David M. Meyer.* 592, 964 (2003)

Cooling in Coronal Gas in the M82 Starburst Superwind. *Charles G. Hoopes, Timothy M. Heckman, David K. Strickland, & J. Christopher Howk.* 596, L175 (2003)

HOYLE, F. Inhomogeneities in the Microwave Background Radiation Interpreted within the Framework of the Quasi–Steady State Cosmology. *J. V. Narlikar, R. G. Vishwakarma, Amir Hajian, Tarun Souradeep, G. Burbridge, & F. Hoyle.* 585, 1 (2003)

HRADECKY, V. See BERSIER, D., et al. The Strongly Polarized Afterglow of GRB 020405.

HRISTOV, V. V. See CRILL, B. P., et al. BOOMERANG: A Balloon-Borne Millimeter-Wave Telescope and Total Power Receiver for Mapping Anisotropy in the Cosmic Microwave Background.

See RUHL, J. E., et al. Improved Measurement of the Angular Power Spectrum of Temperature Anisotropy in the Cosmic Microwave Background from Two New Analyses of BOOMERANG Observations.

HRIVNAK, BRUCE J. An Abundance Analysis of the New Carbon-Rich Proto-Planetary Nebula IRAS 06530−0213. *Bruce J. Hrivnak & Bacham E. Reddy.* 590, 1049 (2003)

HRYNEVYCH, M. See COLAVITA, M., et al. Observations of DG Tauri with the Keck Interferometer.

See Swain, Mark, et al. Interferometer Observations of Subparsec-Scale Infrared Emission in the Nucleus of NGC 4151.

Hu, H. B. See Amenomori, M., et al. Multi-TeV Gamma-Ray Flares from Markarian 421 in 2000 and 2001 Observed with the Tibet Air Shower Array.

Hu, Haibing. See Amenomori, M., et al. Multi-TeV Gamma-Ray Flares from Markarian 421 in 2000 and 2001 Observed with the Tibet Air Shower Array.

Hu, Wayne. Sample Variance Considerations for Cluster Surveys. *Wayne Hu & Andrey V. Kravtsov.* 584, 702 (2003)

Hu, Y. Formation of Minor-Ion Charge States in the Fast Solar Wind: Roles of Differential Flow Speeds of Ions of the Same Element. *Y. Chen, R. Esser, & Y. Hu.* 582, 467 (2003)

Hua, X.-M. Physical Implications of *RHESSI* Neutron-Capture Line Measurements. *R. J. Murphy, G. H. Share, X.-M. Hua, R. P. Lin, D. M. Smith, & R. A. Schwartz.* 595, L93 (2003)

Huang, Guang Li. The Effect of the Compton Backscattering Component on the Photon Spectra of Three *Yohkoh*/Hard X-Ray Telescope Flares. *Jian Zhang & Guang Li Huang.* 592, L49 (2003)

Huang, Hui-Chun. Interstellar Glycine. *Yi-Jehng Kuan, Steven B. Charnley, Hui-Chun Huang, Wei-Ling Tseng, & Zbigniew Kisiel.* 593, 848 (2003)

Huang, J. See Amenomori, M., et al. Multi-TeV Gamma-Ray Flares from Markarian 421 in 2000 and 2001 Observed with the Tibet Air Shower Array.

Huang, J. H. Radio Constraints on the Starburst Ages of Two Wolf-Rayet Galaxies. *Q. F. Yin, J. H. Huang, & W. Zheng.* 597, 274 (2003)

Huang, J.-S. IWGA J1216.9+3743: *Chandra* Finds an Extremely Steep Ultraluminous X-Ray Source. *I. Cagnoni, R. Turolla, A. Treaves, J.-S. Huang, D. W. Kim, M. Elvis, & A. Celotti.* 582, 654 (2003)

The Hawaii+Anglo-Australian Observatory *K*′-Band Galaxy Redshift Survey. I. The Local *K*-Band Luminosity Function. *J.-S. Huang, K. Glazebrook, L. L. Cowie, & C. Tinney.* 584, 203 (2003)

Huang, Q. See Amenomori, M., et al. Multi-TeV Gamma-Ray Flares from Markarian 421 in 2000 and 2001 Observed with the Tibet Air Shower Array.

Huang, W. See Gies, D. R., et al. Wind Accretion and State Transitions in Cygnus X-1.

Huang, Y. F. Gamma-Ray Bursts from Neutron Star Kicks. *Y. F. Huang, Z. G. Dai, T. Lu, K. S. Cheng, & X. F. Wu.* 594, 919 (2003)

Huard, Tracy L. The Dynamical State of Barnard 68: A Thermally Supported, Pulsating Dark Cloud. *Charles J. Lada, Edwin A. Bergin, João F. Alves, & Tracy L. Huard.* 586, 286 (2003)

Hubbard, W. B. On the Indirect Detection of Sodium in the Atmosphere of the Planetary Companion to HD 209458. *J. J. Fortney, D. Sudarsky, I. Hubeny, C. S. Cooper, W. B. Hubbard, A. Burrows, & J. I. Lunine.* 589, 615 (2003)

A Theory for the Radius of the Transiting Giant Planet HD 209458b. *Adam Burrows, D. Sudarsky, & W. B. Hubbard.* 594, 545 (2003)

Hubeny, I. A Tale of Two Stars: The Extreme O7 Iaf+ Supergiant AV 83 and the OC7.5 III((f)) Star AV 69. *D. John Hillier, T. Lanz, S. R. Heap, I. Hubeny, L. J. Smith, C. J. Evans, D. J. Lennon, & J. C. Bouret.* 588, 1039 (2003)

On the Indirect Detection of Sodium in the Atmosphere of the Planetary Companion to HD 209458. *J. J. Fortney, D. Sudarsky, I. Hubeny, C. S. Cooper, W. B. Hubbard, A. Burrows, & J. I. Lunine.* 589, 615 (2003)

Quantitative Spectroscopy of O Stars at Low Metallicity: O Dwarfs in NGC 346. *J.-C. Bouret, T. Lanz, D. J. Hillier, S. R. Heap, I. Hubeny, D. J. Lennon, L. J. Smith, & C. J. Evans.* 595, 1182 (2003)

Hubeny, Ivan. Theoretical Spectra and Atmospheres of Extrasolar Giant Planets. *David Sudarsky, Adam Burrows, & Ivan Hubeny.* 588, 1121 (2003)

A Grid of Non-LTE Line-Blanketed Model Atmospheres of O-Type Stars. *Thierry Lanz & Ivan Hubeny.* 146, 417 (2003)

A Grid of Non-LTE Line-blanketed Model Atmospheres of O-Type Stars: Erratum (ApJS, 146, 417 [2003]). *Thierry Lanz & Ivan Hubeny.* 147, 225 (2003) (Orig. paper in 146, 417 (2003))

Non-LTE Model Atmospheres for Late-Type Stars. II. Restricted Non-LTE Calculations for a Solar-like Atmosphere. *Carlos Allende Prieto, Ivan Hubeny, & David L. Lambert.* 591, 1192 (2003)

Non-LTE Model Atmospheres for Late-Type Stars. I. A Collection of Data for Light Neutral and Singly Ionized Atoms. *Carlos Allende Prieto, David L. Lambert, Ivan Hubeny, & Thierry Lanz.* 147, 363 (2003)

See Gänsicke, Boris T., et al. Anomalous Ultraviolet Line Flux Ratios in the Cataclysmic variables 1RXS J232953.9+062814, CE 315, BZ Ursae Majoris, and EY Cygni observed with the *Hubble Space Telescope* Space Telescope Imaging Spectrograph.

A Possible Bifurcation in Atmospheres of Strongly Irradiated Stars and Planets. *Ivan Hubeny, Adam Burrows, & David Sudarsky.* 594, 1011 (2003)

Huber, Mark. The Pulsar/White Dwarf/Planet System in M4: Improved Astrometry. *Harvey B. Richer, Rodrigo Ibata, Gregory G. Fahlman, & Mark Huber.* 597, L45 (2003)

Hubert, D. Electron Properties and Coulomb Collisions in the Solar Wind at 1 AU: *WIND* Observations. *C. Salem, D. Hubert, C. Lacombe, S. D. Bale, A. Mangeney, D. E. Larson, & R. P. Lin.* 585, 1147 (2003)

Huchra, J. Clusters of Galaxies in the Local Universe. *C. S. Kochanek, Martin White, J. Huchra, L. Macri, T. H. Jarrett, S. E. Schneider, & J. Mader.* 585, 161 (2003)

Huchra, J. P. The *ROSAT* North Ecliptic Pole Survey: The Optical Identifications. *I. M. Gioia, J. P. Henry, C. R. Mullis, H. Böhringer, U. G. Briel, W. Voges, & J. P. Huchra.* 149, 29 (2003)

Hudelot, Patrick. See Kneib, Jean-Paul, et al. A Wide-Field *Hubble Space Telescope* Study of the Cluster Cl 0024+1654 at $z = 0.4$. II. The Cluster Mass Distribution.

Hudson, Daniel S. A *BeppoSAX* Observation of the IC 1262 Galaxy Cluster. *Daniel S. Hudson, Mark J. Henriksen, & Sergio Colafrancesco.* 583, 706 (2003)

Diffuse Nonthermal X-Ray Emission: Evidence of Cosmic-Ray Acceleration at the Shock Front in IC 1262. *Daniel S. Hudson & Mark J. Henriksen.* 595, L1 (2003)

Hudson, H. S. See Lin, R. P., et al. *RHESSI* Observations of Particle Acceleration and Energy Release in an Intense Solar Gamma-Ray Line Flare.

Hudson, Hugh S. *TRACE* and *Yohkoh* Observations of a White-Light Flare. *Thomas R. Metcalf, David Alexander, Hugh S. Hudson, & Dana W. Longcope.* 595, 483 (2003)

See Share, Gerald H., et al. High-Resolution Observation of the Solar Positron-Electron Annihilation Line.

Hudson, R. L. Solid-Phase Formation of Interstellar Vinyl Alchohol. *R. L. Hudson & M. H. Moore.* 586, L107 (2003)

Huenemoerder, D. *Chandra* Observations of Variable Embedded X-Ray Sources in Orion. I. Resolving the Orion Trapezium: Erratum (ApJ, 549, 441 [2001]). *N. S. Schulz, C. Canizares, D. Huenemoerder, J. H. Kastner, S. C. Taylor, & E. J. Bergstrom.* 586, 1441 (2003) (Orig. paper in 549, 441 (2001))

X-Ray Modeling of Very Young Early-Type Stars in the Orion Trapezium: Signatures of Magnetically Confined Plasmas and Evolutionary Implications. *N. S. Schulz, C. Canizares, D. Huenemoerder, & K. Tibbets.* 595, 365 (2003)

Huenemoerder, David P. The Coronae of AR Lacertae. *David P. Huenemoerder, Claude R. Canizares, Jeremy J. Drake, & Jorge Sanz-Forcada.* 595, 1131 (2003)

Modeling the Ne IX Triplet Spectral Region of Capella with the *Chandra* and *XMM-Newton* Gratings. *Jan-Uwe Ness, Nancy S. Brickhouse, Jeremy J. Drake, & David P. Huenemoerder.* 598, 1277 (2003)

Huensch, M. Metal Lines in DA White Dwarfs. *B. Zuckerman, D. Koester, I. N. Reid, & M. Huensch.* 596, 477 (2003)

Huerta, M. A. Magnetohydrodynamic Shock Heating of the Solar Corona. *J. A. Orta, M. A. Huerta, & G. C. Boynton.* 596, 646 (2003)

Hugenberger, S. See Atkins, R., et al. The High-Energy Gamma-Ray Fluence and Energy Spectrum of GRB 970417A from Observations with Milagrito.

See Falcone, A., et al. Observation of GeV Solar Energetic Particles from the 1997 November 6 Event Using Milagrito.

Huggins, P. J. Multiple Molecular H_2 Outflows in AFGL 618. *P. Cox, P. J. Huggins, J.-P. Maillard, C. Muthu, R. Bachiller, & T. Forveille.* 586, L87 (2003)

Hughes, D. W. Fast Dynamo Action for a Family of Parametrized Flows. *S. E. M. Tanner & D. W. Hughes.* 586, 685 (2003)

Hughes, David H. See Kuraszkiewicz, Joanna K., et al. The Far-Infrared Spectral Energy Distributions of X-Ray–selected Active Galaxies.

Hughes, J. P. X-Ray Observations of the Compact Central Object in Supernova Remnant G347.3−0.5. *J. S. Lazendic, P. O. Slane, B. M. Gaensler, P. P. Plucinsky, J. P. Hughes, D. K. Galloway, & F. Crawford.* 593, L27 (2003)

HUGHES, JOHN P. The Radial Structure of Supernova Remnant N103B. *Karen T. Lewis, David N. Burrows, John P. Hughes, Patrick O. Slane, Gordon P. Garmire, & John A. Nousek.* 582, 770 (2003)

Iron-rich Ejecta in the Supernova Remnant DEM L71. *John P. Hughes, Parviz Ghavamian, Cara E. Rakowski, & Patrick O. Slane.* 582, L95 (2003)

Revealing New Physical Structures in the Supernova Remnant N63A through *Chandra* Imaging Spectroscopy. *Jessica S. Warren, John P. Hughes, & Patrick O. Slane.* 583, 260 (2003)

X-Ray Emission from Multiphase Shock in the Large Magellanic Cloud Supernova Remnant N49. *Sangwook Park, David N. Burrows, Gordon P. Garmire, John A. Nousek, John P. Hughes, & Rosa Murphy Williams.* 586, 210 (2003)

The Physics of Supernova Blast Waves. I. Kinematics of DEM L71 in the Large Magellanic Cloud. *Parviz Ghavamian, Cara E. Rakowski, John P. Hughes, & T. B. Williams.* 590, 833 (2003)

The Physics of Supernova Remnant Blast Waves. II. Electron-Ion Equilibration in DEM L71 in the Large Magellanic Cloud. *Cara E. Rakowski, Parviz Ghavamian, & John P. Hughes.* 590, 846 (2003)

An X-Ray Pulsar in the Oxygen-rich Supernova Remnant G292.0+1.8. *John P. Hughes, Patrick O. Slane, Sangwook Park, Peter W. A. Roming, & David N. Burrows.* 591, L139 (2003)

Detection of Magnesium-rich Ejecta in the Middle-aged Supernova Remnant N49B. *Sangwook Park, John P. Hughes, Patrick O. Slane, David N. Burrows, Jessica S. Warren, Gordon P. Garmire, & John A. Nousek.* 592, L41 (2003)

The Mass, Baryonic Fraction, and X-Ray Temperature of the Luminous, High-Redshift Cluster of Galaxies MS 0451.6−0305. *Megan Donahue, Jessica A. Gaskin, Sandeep K. Patel, Marshall Joy, Doug Clowe, & John P. Hughes.* 598, 190 (2003)

0103−72.6: A New Oxygen-rich Supernova Remnant in the Small Magellanic Cloud. *Sangwook Park, John P. Hughes, David N. Burrows, Patrick O. Slane, John A. Nousek, & Gordon P. Garmire.* 598, L95 (2003)

HUGHES, M. A. See MARCONI, A., et al. Is There Really a Black Hole at the Center of NGC 4041? Constraints from Gas Kinematics.

HUGHES, P. A. Pearson-Readhead Survey Sources. II. The Long-Term Centimeter-Band Total Flux and Linear Polarization Properties of a Complete Radio Sample. *M. F. Aller, H. D. Aller, & P. A. Hughes.* 586, 33 (2003)

HUGHES, PHILIP A. The Effect of External Winds on Relativistic Jets. *Philip E. Hardee & Philip A. Hughes.* 583, 116 (2003)

The Cross-Wavelet Transform and Analysis of Quasi-periodic Behavior in the Pearson-Readhead VLBI Survey Sources. *Brandon C. Kelly, Philip A. Hughes, Hugh D. Aller, & Margo F. Aller.* 591, 695 (2003)

HUGHES, SCOTT A. Black Hole Mass and Spin Coevolution by Mergers. *Scott A. Hughes & Roger D. Blandford.* 585, L101 (2003)

HUI, LAM. Inferring the Linear Power Spectrum from the Lyα Forest. *Matias Zaldarriaga, Román Scoccimarro, & Lam Hui.* 590, 1 (2003)

See SZALAY, ALEXANDER S., et al. Karhunen-Loève Estimation of the Power Spectrum Parameters from the Angular Distribution of Galaxies in Early Sloan Digital Sky Survey Data.

The Thermal Memory of Reionization History. *Lam Hui & Zoltán Haiman.* 596, 9 (2003)

HULTH, P. O. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

HULTQVIST, K. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

HUMMEL, W. See ISRAEL, G. L., et al. Unveiling the Nature of the 321 Second Modulation in RX J0806.3+1527: Near-Simultaneous *Chandra* and Very Large Telescope Observations.

HUMPHREY, A. See FOSBURY, R. A. E., et al. Massive Star Formation in a Gravitationally Lensed H II Galaxy at $z = 3.357$.

HUNDERTMARK, S. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

HUNGERFORD, AIMEE L. Gamma-Ray Lines from Asymmetric Supernovae. *Aimee L. Hungerford, Chris L. Fryer, & Michael S. Warren.* 594, 390 (2003)

HUNT, LESLIE K. New Light on the Stellar Populations in I Zw 18: Deep Near-Infrared Imaging. *Leslie K. Hunt, Trinh X. Thuan, & Yuri I. Izotov.* 588, 281 (2003)

The Relation between Black Hole Mass, Bulge Mass, and Near-Infrared Luminosity. *Alessandro Marconi & Leslie K. Hunt.* 589, L21 (2003)

HUNT, MATTHEW P. Hα Spectroscopy of Galaxies at $z > 2$: Kinematics and Star Formation. *Dawn K. Erb, Alice E. Shapley, Charles C. Steidel, Max Pettini, Kurt L. Adelberger, Matthew P. Hunt, Alan F. M. Moorwood, & Jean-Gabriel Cuby.* 591, 101 (2003)

HURFORD, G. J. See LIN, R. P., et al. *RHESSI* Observations of Particle Acceleration and Energy Release in an Intense Solar Gamma-Ray Line Flare.

First Gamma-Ray Images of a Solar Flare. *G. J. Hurford, R. A. Schwartz, S. Krucker, R. P. Lin, D. M. Smith, & N. Vilmer.* 595, L77 (2003)

Hard X-Ray Source Motions in the 2002 July 23 Gamma-Ray Flare. *Säm Krucker, G. J. Hurford, & R. P. Lin.* 595, L103 (2003)

HURLEY, JARROD R. White Dwarf Sequences in Dense Star Clusters. *Jarrod R. Hurley & Michael M. Shara.* 589, 179 (2003)

HURLEY, K. See PRICE, P. A., et al. GRB 010921: Strong Limits on an Underlying Supernova from the *Hubble Space Telescope*.

See PRICE, P. A., et al. Discovery of GRB 020405 and Its Late Red Bump.

See WOODS, P. M., et al. The 2001 April Burst Activation of SGR 1900+14: Pulse Properties and Torque.

See FEROCI, M., et al. The 2001 April Burst Activation of SGR 1900+14: X-Ray Afterglow Emission.

See KOUVELIOTOU, C., et al. Unraveling the Cooling Trend of the Soft Gamma Repeater SGR 1627−41.

Observations of Giant Outbursts from Cygnus X-1. *S. Golenetskii, R. Aptekar, D. Frederiks, E. Mazets, V. Palshin, K. Hurley, T. Cline, & B. Stern.* 596, 1113 (2003)

See CREW, G. B., et al. *HETE-2* Localization and Observation of the Bright, X-Ray–rich Gamma-Ray Burst GRB 021211.

HURLEY, KEVIN. See LENTERS, GEOFFREY T., et al. An Extended Burst Tail from SGR 1900+14 with a Thermal X-Ray Spectrum.

HURLEY-KELLER, DENISE. Andromeda VIII: A New Tidally Distorted Satellite of M31. *Heather L. Morrison, Paul Harding, Denise Hurley-Keller, & George Jacoby.* 596, L183 (2003)

HUSS, G. R. The Initial Abundance of ^{60}Fe in the Solar System. *S. Tachibana & G. R. Huss.* 588, L41 (2003)

HUSSAIN, GAITEE. Coronal Element Abundances of the Post–Common-Envelope Binary V471 Tauri with *ASCA*. *Martin Still & Gaitee Hussain.* 597, 1059 (2003)

HUT, PIET. On the Central Structure of M15. *Holger Baumgardt, Piet Hut, Junichiro Makino, Steve McMillan, & Simon Portegies Zwart.* 582, L21 (2003)

A Dynamical Model for the Globular Cluster G1. *Holger Baumgardt, Junichiro Makino, Piet Hut, Steve McMillan, & Simon Portegies Zwart.* 589, L25 (2003)

See POOLEY, DAVID, et al. Dynamical Formation of Close Binary Systems in Globular Clusters.

HUTCHINGS, J. B. Constraints on the Ionization Balance of Hot-Star Winds from *FUSE* Observations of O Stars in the Large Magellanic Cloud. *D. Massa, A. W. Fullerton, G. Sonneborn, & J. B. Hutchings.* 586, 996 (2003)

A *Hubble Space Telescope* Survey of Extended [O III] λ5007 Emission in a Far-Infrared Selected Sample of Seyfert Galaxies: Observations. *H. R. Schmitt, J. L. Donley, R. R. J. Antonucci, J. B. Hutchings, & A. L. Kinney.* 148, 327 (2003)

A *Hubble Space Telescope* Survey of Extended [O III] λ5007 Emission in a Far-Infrared Selected Sample of Seyfert Galaxies: Results. *H. R. Schmitt, J. L. Donley, R. R. J. Antonucci, J. B. Hutchings, A. L. Kinney, & J. E. Pringle.* 597, 768 (2003)

HUTSEMÉKERS, DAMIEN. VLT+UVES Spectroscopy of the Ca II Low-Ionization Broad Absorption Line Quasar SDSS J030000.56+004828.0. *Patrick B. Hall, Damien Hutsemékers, Scott F. Anderson, J. Brinkmann, Xiaohui Fan, Donald P. Schneider, & Donald G. York.* 593, 189 (2003)

HWANG, CHORNG-YUAN. Diagnostic Signatures of Radio and Hard X-Ray Emission on Particle Acceleration Processes in the Coma Cluster. *Ping-Hung Kuo, Chorng-Yuan Hwang, & Wing-Huen Ip.* 594, 732 (2003)

HWANG, U. *Chandra* Observation of the X-Ray Source Population of NGC 6946. *S. S. Holt, E. M. Schlegel, U. Hwang, & R. Petre.* 588, 792 (2003)

HWANG, UNA. On the Determination of Ejecta Structure and Explosion Asymmetry from the X-Ray Knots of Cassiopeia A. *J. Martin Laming & Una Hwang.* 597, 347 (2003)

Where Was the Iron Synthesized in Cassiopeia A? *Una Hwang & J. Martin Laming.* 597, 362 (2003)

HYDE, E. A. See GREEN, E. M., et al. Discovery of a New Class of Pulsating Stars: Gravity-Mode Pulsators among Subdwarf B Stars.
HYNES, R. I. See ARAUJO-BETANCOR, S., et al. System Parameters of DW Ursae Majoris.
Dynamical Evidence for a Black Hole in GX 339−4. *R. I. Hynes, D. Steeghs, J. Casares, P. A. Charles, & K. O'Brien.* 583, L95 (2003)
Bowen Flourescence from the Companion Star in X1822−371. *J. Casares, D. Steeghs, R. I. Hynes, P. A. Charles, & K. O'Brien.* 590, 1041 (2003)
HYUNG, S. Emission Lines of Cl II in the Optical Spectra of Gaseous Nebulae. *F. P. Keenan, L. H. Aller, K. M. Exter, S. Hyung, & D. L. Pollacco.* 584, 385 (2003)

IACOANGELI, A. See CRILL, B. P., et al. BOOMERANG: A Balloon-Borne Millimeter-Wave Telescope and Total Power Receiver for Mapping Anisotropy in the Cosmic Microwave Background.
See RUHL, J. E., et al. Improved Measurement of the Angular Power Spectrum of Temperature Anisotropy in the Cosmic Microwave Background from Two New Analyses of BOOMERANG Observations.
IARIA, R. *BeppoSAX* Serendipitous Discovery of the X-Ray Pulsar SAX J1802.7−2017. *G. Augello, R. Iaria, N. R. Robba, T. Di Salvo, L. Burderi, G. Lavagetto, & L. Stella.* 596, L63 (2003)
IBÁÑEZ, JOSÉ-MARÍA. Three-dimensional Simulations of Relativistic Precessing Jets Probing the Structure of Superluminal Sources. *Miguel-Ángel Aloy, José-María Martí, José-Luis Gómez, Iván Agudo, Ewald Müller, & José-María Ibáñez.* 585, L109 (2003)
IBATA, RODRIGO. The Pulsar/White Dwarf/Planet System in M4: Improved Astrometry. *Harvey B. Richer, Rodrigo Ibata, Gregory G. Fahlman, & Mark Huber.* 597, L45 (2003)
IBBETSON, P. See MUKADEM, ANJUM S., et al. Constraining the Evolution of ZZ Ceti.
IBEN, ICKO, JR. Carbon-Oxygen White Dwarfs Accreting CO-rich Matter. I. A Comparison between Rotating and Nonrotating Models. *Luciano Piersanti, Simona Gagliardi, Icko Iben, Jr., & Amedeo Tornambé.* 583, 885 (2003)
Carbon-Oxygen White Dwarf Accreting CO-Rich Matter. II. Self-Regulating Accretion Process up to the Explosive Stage. *Luciano Piersanti, Simona Gagliardi, Icko Iben, Jr., & Amedeo Tornambe.* 598, 1229 (2003)
IBRAHIM, ALAA I. New Evidence of Proto-Cyclotron Resonance in a Magnetar Strength Field from SGR 1806−20. *Alaa I. Ibrahim, Jean H. Swank, & William Parke.* 584, L17 (2003)
IBRAHIMOV, M. A. See BÖTTCHER, M., et al. Coordinated Multiwavelength Observations of BL Lacertae in 2000.
ICHIKAWA, SHIN-ICHI. See TANIGUCHI, YOSHIAKI, et al. The Discovery of a Very Narrow Line Star-forming Object at a Redshift of 5.66.
ICHIMOTO, KIYOSHI. Spectroscopic Studies of the Solar Corona. IV. Physical Properties of Coronal Structure. *Jagdev Singh, Kiyoshi Ichimoto, Takashi Sakurai, & S. Muneer.* 585, 516 (2003)
IDA, S. Eccentricity Evolution of Extrasolar Multiple Planetary Systems Due to the Depletion of Nascent Protostellar Disks. *M. Nagasawa, D. N. C. Lin, & S. Ida.* 586, 1374 (2003)
IESS, L. Stochastic Gravitational Wave Background: Upper Limits in the 10^{-6} to 10^{-3} Hz Band. *J. W. Armstrong, L. Iess, P. Tortora, & B. Bertotti.* 599, 806 (2003)
IGLESIAS-PARAMO, J. Capturing a Star Formation Burst in Galaxies Infalling onto the Cluster A1367. *G. Gavazzi, L. Cortese, A. Boselli, J. Iglesias-Paramo, J. M. Vilchez, & L. Carrasco.* 597, 210 (2003)
IGLESIAS-PÁRAMO, JORGE. Spectroscopy of Dwarf Galaxies in the Virgo Cluster. I. Data, Chemical Abundances, and Ionization Structure. *José M. Vílchez & Jorge Iglesias-Páramo.* 145, 225 (2003)
IGNACE, R. Constraints from *Infrared Space Observatory* Data on the Velocity Law and Clumpiness of WR 136. *R. Ignace, M. F. Quigley, & J. P. Cassinelli.* 596, 538 (2003)
IGNJATOVIĆ, LJ. M. Symmetrical Chemi-Ionization and Chemi-Recombination Processes in Low-Temperature Layers of Helium-rich DB White Dwarf Atmospheres. *A. A. Mihajlov, Lj. M. Ignjatović, M. S. Dimitrijević, & Z. Djurić.* 147, 369 (2003)
IGUMENSHCHEV, IGOR V. Three-dimensional Magnetohydrodynamic Simulations of Radiatively Inefficient Accretion Flows. *Igor V. Igumenshchev, Ramesh Narayan, & Marek A. Abramowicz.* 592, 1042 (2003)
IKEBE, Y. Discovery of a Binary Active Galaxy Nucleus in the Ultraluminous Infrared Galaxy NGC 6240 Using *CHANDRA*. *S. Komossa, V. Burwitz, G. Hasinger, P. Predehl, J. S. Kaastra, & Y. Ikebe.* 582, L15 (2003)
IKEDA, MASAFUMI. See KAMEGAI, KAZUHISA, et al. Distribution of the C I Emission in the ρ Ophiuchi Dark Cloud.
Mapping Observations of DNC and $HN^{13}C$ in Dark Cloud Cores. *Tomoya Hirota, Masafumi Ikeda, & Satoshi Yamamoto.* 594, 859 (2003)
IKUTA, CHISATO. See KOMIYAMA, YUTAKA, et al. Discovery of Latent Star Formation in the Extended H I Gas around the Local Group Dwarf Irregular Galaxy NGC 6822.
ILLINGWORTH, G. D. See TRAN, H. D., et al. Advanced Camera for Surveys Observations of Young Star Clusters in the Interacting Galaxy UGC 10214.
See BOUWENS, R. J., et al. Star Formation at $z \sim 6$: i-Dropouts in the Advanced Camera for Surveys Guaranteed Time Observation Fields.
See BLAKESLEE, JOHN P., et al. Advanced Camera for Surveys Photometry of the Cluster RDCS 1252.9−2927: The Color-Magnitude Relation at $z = 1.24$.
See MEURER, GERHARDT R., et al. The Discovery of Globular Clusters in the Protospiral Galaxy NGC 2915: Implications for Hierarchical Galaxy Evolution.
ILLINGWORTH, GARTH. Cl 1358+62: Characterizing the Physical Properties of Cluster Galaxies at $z = 0.33$. *Kim-Vy H. Tran, Luc Simard, Garth Illingworth, & Marijn Franx.* 590, 238 (2003)
Cloning Dropouts: Implications for Galaxy Evolution at High Redshift. *Rychard Bouwens, Tom Broadhurst, & Garth Illingworth.* 593, 640 (2003)
The Nature of E+A Galaxies in Intermediate Redshift Clusters. *Kim-Vy H. Tran, Marijn Franx, Garth Illingworth, Daniel D. Kelson, & Pieter van Dokkum.* 599, 865 (2003)
ILLINGWORTH, GARTH D. See VAN DOKKUM, PIETER G., et al. Spectroscopic Confirmation of a Substantial Population of Luminous Red Galaxies at Redshifts $z \gtrsim 2$.
See BLAKESLEE, JOHN P., et al. Discovery of Two Distant Type Ia Supernovae in the Hubble Deep Field–North with the Advanced Camera for Surveys.
See GEBHARDT, KARL, et al. The DEEP Groth Strip Survery. IX. Evolution of the Fundamental Plane of Field Galaxies.
ILYIN, I. See LOBEL, A., et al. High-Resolution Spectroscopy of the Yellow Hypergiant ρ Cassiopeiae from 1993 through the Outburst of 2000–2001.
IM, MYUNGSHIN. See GEBHARDT, KARL, et al. The DEEP Groth Strip Survery. IX. Evolution of the Fundamental Plane of Field Galaxies.
IMAI, HIROSHI. The Three-dimensional Kinematics of Water Masers around the Semiregular Variable RT Virginis. *Hiroshi Imai, Katsunori M. Shibata, Kevin B. Marvel, Philip J. Diamond, Tetsuo Sasao, Makoto Miyoshi, Makoto Inoue, Victor Migenes, & Yasuhiro Murata.* 590, 460 (2003)
Linear Polarization Observations of Water Masers in W3 IRS 5. *Hiroshi Imai, Shinji Horiuchi, Shuji Deguchi, & Osamu Kameya.* 595, 285 (2003)
IMAI, SATOKO. See IWAMURO, FUMIHIDE, et al. Infrared Spectroscopy of 15 Radio Galaxies at $2 < z < 2.6$.
IMAMURA, JAMES N. The Nonlinear Evolution of Massive Stellar Core Collapses that "Fizzle." *James N. Imamura, Brian K. Pickett, & Richard H. Durisen.* 587, 341 (2003)
IMANISHI, MASATOSHI. 3.1 Micron H_2O Ice Absorption in LINER-Type Ultraluminous Infrared Galaxies with Cool Far-Infrared Colors: The Centrally Concentrated Nature of Their Deeply Buried Energy Sources. *Masatoshi Imanishi & Philip R. Maloney.* 588, 165 (2003)
See IYE, MASANORI, et al. ERO R1 in the Field of Cl 0939+4713: Evidence for an S0-Like Galaxy at $z \sim 1.5$.
X-Ray Evidence of a Buried Active Galactic Nucleus in UGC 5101. *Masatoshi Imanishi, Yuichi Terashima, Naohisa Anabuki, & Takao Nakagawa.* 596, L167 (2003)
Compact Nuclear Starbursts in Seyfert 2 Galaxies from the CfA and 12 Micron Samples. *Masatoshi Imanishi.* 599, 918 (2003)
IMBRIANI, GIANLUCA. The Chemical Composition of White Dwarfs as a Test of Convective Efficiency during Core Helium Burning. *Oscar Straniero, Immaculada Domínguez, Gianluca Imbriani, & Luciano Piersanti.* 583, 878 (2003)
IMI, KATSUMI. See KOMIYAMA, YUTAKA, et al. Discovery of Latent Star Formation in the Extended H I Gas around the Local Group Dwarf Irregular Galaxy NGC 6822.
See HAMANA, TAKASHI, et al. Cosmic Shear Statistics in the Suprime-Cam 2.1 Square Degree Field: Constraints on Ω_m and Σ_8.
IMMLER, STEFAN. A Deep *Chandra* X-Ray Observation of NGC 1637. *Stefan Immler, Q. Daniel Wang, Douglas C. Leonard, & Eric M. Schlegel.* 595, 727 (2003)

Impey, C. See Matheson, T., et al. Photometry and Spectroscopy of GRB 030329 and Its Associated Supernova 2003dh: The First Two Months.

Impey, C. D. See Rusin, D., et al. The Evolution of a Mass-selected Sample of Early-Type Field Galaxies.

Impey, Chris D. See Kuraszkiewicz, Joanna K., et al. The Far-Infrared Spectral Energy Distributions of X-Ray–selected Active Galaxies.

Inatani, Junji. See Kamegai, Kazuhisa, et al. Distribution of the C I Emission in the ρ Ophiuchi Dark Cloud.

Indebetouw, Rémy. Detection of a Near-Infrared Counterpart to the Massive Protostar G192.16−3.82. *Rémy Indebetouw, Christer Watson, Kelsey E. Johnson, Barbara Whitney, & Ed Churchwell.* 596, L83 (2003)

Infante, L. See Garnavich, P. M., et al. Discovery of the Low-Redshift Optical Afterglow of GRB 011121 and Its Progenitor Supernova SN 2001ke.

See Tran, H. D., et al. Advanced Camera for Surveys Observations of Young Star Clusters in the Interacting Galaxy UGC 10214.

Quasars Clustering at $z \approx 3$ on Scales $\lesssim 10\,h^{-1}$ Mpc. *L. Infante, J. Varela, M. Moles, G. Hertling, A. García, & F. Menanteau.* 588, 90 (2003)

See Bouwens, R. J., et al. Star Formation at $z \sim 6$: i-Dropouts in the Advanced Camera for Surveys Guaranteed Time Observation Fields.

See Blakeslee, John P., et al. Advanced Camera for Surveys Photometry of the Cluster RDCS 1252.9−2927: The Color-Magnitude Relation at $z = 1.24$.

See Meurer, Gerhardt R., et al. The Discovery of Globular Clusters in the Protospiral Galaxy NGC 2915: Implications for Hierarchical Galaxy Evolution.

Innes, D. E. Mass Motions and Plasma Properties in the 10^7 K Flare Solar Corona. *E. Landi, U. Feldman, D. E. Innes, & W. Curdt.* 582, 506 (2003)

Inoe, Susumu. Precursor Plerionic Activity and High-Energy Gamma-Ray Emission in the Supranova Model of Gamma-Ray Bursts. *Susumu Inoe, Dafne Guetta, & Franco Pacini.* 583, 379 (2003)

Inoue, Kaiki Taro. Direct Mapping of Massive Compact Objects in Extragalactic Dark Halos. *Kaiki Taro Inoue & Masashi Chiba.* 591, L83 (2003)

Inoue, Makoto. See Imai, Hiroshi, et al. The Three-dimensional Kinematics of Water Masers around the Semiregular Variable RT Virginis.

Inoue, Susumu. Nucleosynthesis in Baryon-Rich Outflows Associated with Gamma-Ray Bursts. *Susumu Inoue, Nobuyuki Iwamoto, Manabu Orito, & Mariko Terasawa.* 595, 294 (2003)

in 't Zand, J. See De Pasquale, M., et al. A Comparative Study of the X-Ray Afterglow Properties of Optically Bright and Dark Gamma-Ray Bursts.

in 't Zand, J. J. M. Discovery of X-Ray Burst Oscillations from a Neutron Star X-Ray Transient in the Globular Cluster NGC 6440. *P. Kaaret, J. J. M. in 't Zand, J. Heise, & J. A. Tomsick.* 598, 481 (2003)

in 't Zand, Jean. X-Ray Bursts from the Accreting Millisecond Pulsar XTE J1814−338. *Tod E. Strohmayer, Craig B. Markwardt, Jean H. Swank, & Jean in 't Zand.* 596, L67 (2003)

Iodice, E. Polar Ring Galaxies and the Tully-Fisher Relation: Implications for the Dark Halo Shape. *E. Iodice, M. Arnaboldi, F. Bournaud, F. Combes, L. S. Sparke, W. van Driel, & M. Capaccioli.* 585, 730 (2003)

Ioka, Kunihito. Ultrafast Self-Compton Cooling. *Kunihito Ioka.* 583, 819 (2003)

Delayed Flashes from Counterjets of Gamma-Ray Bursts. *Ryo Yamazaki, Kunihito Ioka, & Takashi Nakamura.* 591, 283 (2003)

Cosmological X-Ray Flashes in the Off-Axis Jet Model. *Ryo Yamazaki, Kunihito Ioka, & Takashi Nakamura.* 593, 941 (2003)

Circular Polarization from Gamma-Ray Burst Afterglows. *Makoto Matsumiya & Kunihito Ioka.* 595, L25 (2003)

The Cosmic Dispersion Measure from Gamma-Ray Burst Afterglows: Probing the Reionization History and the Burst Environment. *Kunihito Ioka.* 598, L79 (2003)

Ip, Wing-Huen. On the Fate of Close-in Extrasolar Planets. *Ing-Guey Jiang, Wing-Huen Ip, & Li-Chen Yeh.* 582, 449 (2003)

Diagnostic Signatures of Radio and Hard X-Ray Emission on Particle Acceleration Processes in the Coma Cluster. *Ping-Hung Kuo, Chorng-Yuan Hwang, & Wing-Huen Ip.* 594, 732 (2003)

Ipavich, F. M. Calcium Abundance in the Solar Wind. *P. Wurz, P. Bochsler, J. A. Paquette, & F. M. Ipavich.* 583, 489 (2003)

Elemental Abundances for the 1996 Streamer Belt. *M. Uzzo, Y.-K. Ko, J. C. Raymond, P. Wurz, & F. M. Ipavich.* 585, 1062 (2003)

Irwin, Alan W. The Initial Helium Content of Galactic Globular Cluster Stars from the R-Parameter: Comparison with the Cosmic Microwave Background Constraint. *Santi Cassisi, Maurizio Salaris, & Alan W. Irwin.* 588, 862 (2003)

Irwin, J. A. Classifying X-Ray Sources in External Galaxies from X-Ray Colors. *A. H. Prestwich, J. A. Irwin, R. E. Kilgard, M. I. Krauss, A. Zezas, F. Primini, P. Kaaret, & B. Boroson.* 595, 719 (2003)

Irwin, Jimmy A. X-Ray Spectral Properties of Low-Mass X-Ray Binaries in Nearby Galaxies. *Jimmy A. Irwin, Alex E. Athey, & Joel N. Bregman.* 587, 356 (2003)

Low-Mass X-Ray Binaries and Globular Clusters in Early-Type Galaxies. *Craig L. Sarazin, Arunav Kundu, Jimmy A. Irwin, Gregory R. Sivakoff, Elizabeth L. Blanton, & Scott W. Randall.* 595, 743 (2003)

Chandra Observations of Low-Mass X-Ray Binaries and Diffuse Gas in the Early-Type Galaxies NGC 4365 and NGC 4382 (M85). *Gregory R. Sivakoff, Craig L. Sarazin, & Jimmy A. Irwin.* 599, 218 (2003)

Irwin, Judith A. High-Latitude H I in NGC 2613: Buoyant Disk-Halo Outflow. *Judith A. Irwin & Tara Chaves.* 585, 268 (2003)

Chandra Observation of the Edge-on Galaxy NGC 3556 (M108): Violent Galactic Disk-Halo Interaction Revealed. *Q. Daniel Wang, Tara Chaves, & Judith A. Irwin.* 598, 969 (2003)

Irwin, Michael J. Serendipity and the Sloan Digital Sky Survey: Discovery of the Largest Known Planetary Nebula on the Sky. *Paul C. Hewett, Michael J. Irwin, Evan D. Skillman, Craig B. Foltz, Jon P. Willis, Stephen J. Warren, & Nicholas A. Walton.* 599, L37 (2003)

Isaak, G. R. Does the Energy Supplied to Low-l Solar p-Modes Vary over the Activity Cycle? *W. J. Chaplin, Y. Elsworth, G. R. Isaak, B. A. Miller, R. New, & T. Toutain.* 582, L115 (2003)

A Comparison of Low-Degree Solar p-Mode Parameters from BiSON and GONG: Underlying Values and Temporal Variations. *R. Howe, W. J. Chaplin, Y. P. Elsworth, F. Hill, R. Komm, G. R. Isaak, & R. New.* 588, 1204 (2003)

Isaak, Kate G. A ^{12}CO Map of M82: The Significance of Warm Molecular Gas. *John S. Ward, Jonas Zmuidzinas, Andrew I. Harris, & Kate G. Isaak.* 587, 171 (2003)

Isenberg, Philip A. Turbulent Heating of the Distant Solar Wind by Interstellar Pickup Protons. *Philip A. Isenberg, Charles W. Smith, & William H. Matthaeus.* 592, 564 (2003)

Ishibashi, Kazunori. Latitude-dependent Effects in the Stellar Wind of η Carinae. *Nathan Smith, Kris Davidson, Theodore R. Gull, Kazunori Ishibashi, & D. John Hillier.* 586, 432 (2003)

Ishida, Manabu. See Watanabe, Shin, et al. Detection of a Fully Resolved Compton Shoulder of the Iron Kα Line in the *Chandra* X-Ray Spectrum of GX 301-2.

Ishiguro, M. Discovery of Dust Trail of *STARDUST* Comet Sample Return Mission Target: 81P/Wild 2. *M. Ishiguro, S. M. Kwon, Y. Sarugaku, S. Hasegawa, F. Usui, S. Nishiura, Y. Nakada, & H. Yano.* 589, L101 (2003)

Ishiguro, Masateru. Saturated Hydrocarbons in Comet 153P/Ikeya-Zhang: Ethane, Methane, and Monodeuterio-Methane. *Hideyo Kawakita, Jun-ichi Watanabe, Daisuke Kinoshita, Masateru Ishiguro, & Ryosuke Nakamura.* 590, 573 (2003)

Ishii, Miki. See Jiang, Zhibo, et al. A Near-Infrared Study of the Star-Forming Region S269.

Ishii, Takako T. Evolution of Conjugate Footpoints inside Flare Ribbons during a Great Two-Ribbon Flare on 2001 April 10. *Ayumi Asai, Takako T. Ishii, Hiroki Kurokawa, Takaaki Yokoyama, & Masumi Shimojo.* 586, 624 (2003)

The Luminosity Function of *IRAS* Point Source Catalog Redshift Survey Galaxies. *Tsutomu T. Takeuchi, Kohji Yoshikawa, & Takako T. Ishii.* 587, L89 (2003)

Ishimaru, Yuhri. The r-Process in Supernovae Explosions from the Collapse of O-Ne-Mg Cores. *Shinya Wanajo, Masaya Tamamura, Naoki Itoh, Ken'ichi Nomoto, Yuhri Ishimaru, Timothy C. Beers, & Satoshi Nozawa.* 593, 968 (2003)

Ishioka, R. See Böttcher, M., et al. Coordinated Multiwavelength Observations of BL Lacertae in 2000.

Ishisaki, Yoshitaka. See Watanabe, Shin, et al. Detection of a Fully Resolved Compton Shoulder of the Iron Kα Line in the *Chandra* X-Ray Spectrum of GX 301-2.

Ishwara-Chandra, C. H. On the Origin of the Various Types of Radio Emission in GRS 1915+105. *S. V. Vadawale, A. R. Rao, S. Naik, J. S. Yadav, C. H. Ishwara-Chandra, A. Pramesh Rao, & G. G. Pooley.* 597, 1023 (2003)

Isobe, Hiroaki. Analysis of the Temperature and Emission Measure of Solar Coronal Arcades and Test of a Scaling Law of Flare/Arcade Loop Length:

Erratum (ApJ, 579, L45 [2002]). *Tetsuya T. Yamamoto, Daikou Shiota, Takuma Sakajiri, Sachiko Akiyama, Hiroaki Isobe, & Kazunari Shibata.* 592, L107 (2003) (Orig. paper in 579, L45 (2002))

ISOBE, TAKASHI. *Chandra* Observations of Associates of η Carinae. I. Luminosities. *Nancy Remage Evans, Frederick D. Seward, Miriam I. Krauss, Takashi Isobe, Joy Nichols, Eric M. Schlegel, & Scott J. Wolk.* 589, 509 (2003)

ISRAEL, FRANK P. Unusual CO Line Ratios and Kinematics in the N83/N84 Region of the Small Magellanic Cloud. *Alberto D. Bolatto, Adam Leroy, Frank P. Israel, & James M. Jackson.* 595, 167 (2003)

ISRAEL, G. L. The Infrared Counterpart to the Anomalous X-Ray Pulsar 1RXS J170849−400910. *G. L. Israel, S. Covino, R. Perna, R. Mignani, L. Stella, S. Campana, G. Marconi, G. Bono, S. Mereghetti, C. Motch, I. Negueruela, T. Oosterbroek, & L. Angelini.* 589, L93 (2003)

XMM-Newton Observation of the 5.25 Millisecond Transient Millisecond Pulsar XTE J1807−294 in Outburst. *S. Campana, M. Ravasio, G. L. Israel, V. Mangano, & T. Belloni.* 594, L39 (2003)

Unveiling the Nature of the 321 Second Modulation in RX J0806.3+1527: Near-Simultaneous *Chandra* and Very Large Telescope Observations. *G. L. Israel, S. Covino, L. Stella, C. W. Mauche, S. Campana, G. Marconi, W. Hummel, S. Mereghetti, U. Munari, & I. Negueruela.* 598, 492 (2003)

The Glitches of the Anomalous X-Ray Pulsar 1RXS J170849.0−400910. *S. Dall'Osso, G. L. Israel, L. Stella, A. Possenti, & E. Perozzi.* 599, 485 (2003)

ISRAEL, GIAN LUCA. Evidence of a Cyclotron Feature in the Spectrum of the Anomalous X-Ray Pulsar 1RXS J170849−400910. *Nanda Rea, Gian Luca Israel, Luigi Stella, Tim Oosterbroek, Sandro Mereghetti, Lorella Angelini, Sergio Campana, & Stefano Covino.* 586, L65 (2003)

ISRAELIAN, G. See LOBEL, A., et al. High-Resolution Spectroscopy of the Yellow Hypergiant ρ Cassiopeiae from 1993 through the Outburst of 2000–2001.

ITO, TETSUYA. See KAMEGAI, KAZUHISA, et al. Distribution of the C I Emission in the ρ Ophiuchi Dark Cloud.

ITOH, C. Galactic Gamma-Ray Halo of the Nearby Starbust Galaxy NGC 253. *C. Itoh, R. Enomoto, S. Yanagita, T. Yoshida, & T. G. Tsuru.* 584, L65 (2003)

See ENOMOTO, R., et al. Search for TeV Gamma Rays from SN 1987A in 2001.

Constraints on Cold Dark Matter in the Gamma-Ray Halo of NGC 253. *R. Enomoto, T. Yoshida, S. Yanagita, & C. Itoh.* 596, 216 (2003)

ITOH, NAOKI. Enhancement of Resonant Thermonuclear Reaction Rates in Extremely Dense Stellar Plasmas. *Naoki Itoh, Nami Tomizawa, Shinya Wanajo, & Satoshi Nozawa.* 586, 1436 (2003)

The r-Process in Supernovae Explosions from the Collapse of O-Ne-Mg Cores. *Shinya Wanajo, Masaya Tamamura, Naoki Itoh, Ken'ichi Nomoto, Yuhri Ishimaru, Timothy C. Beers, & Satoshi Nozawa.* 593, 968 (2003)

ITOH, YOICHI. Interferometric Observations of the T Tauri Stars in the MBM 12 Cloud. *Yoichi Itoh, Koji Sugitani, Naoya Fukuda, Kouichiro Nakanishi, Katsuo Ogura, Motohide Tamura, Kazuko Marui, Kenta Fujita, Yumiko Oasa, & Misato Fukagawa.* 586, L141 (2003)

Near-Infrared Imaging of the Circumstellar Disk around Herbig Ae Star HD 150193A. *Misato Fukagawa, Motohide Tamura, Yoichi Itoh, Saeko S. Hayashi, & Yumiko Oasa.* 590, L49 (2003)

IVANOVA, N. The Role of Helium Stars in the Formatioń of Double Neutron Stars. *N. Ivanova, K. Belczynski, V. Kalogera, F. A. Rasio, & R. E. Taam.* 592, 475 (2003)

Magnetic Braking Revisited. *N. Ivanova & Ronald E. Taam.* 599, 516 (2003)

IVANS, INESE I. See SNEDEN, CHRISTOPHER, et al. The Extremely Metal-poor, Neutron Capture–rich Star CS 22892−052: A Comprehensive Abundance Analysis.

Chemical Substructure in the Milky Way Halo: A New Population of Old Stars. *Inese I. Ivans, Christopher Sneden, C. Renée James, George W. Preston, Jon P. Fulbright, Peter A. Höflich, Bruce W. Carney, & J. Craig Wheeler.* 592, 906 (2003)

Magnesium Isotopic Abundance Ratios in Cool Stars. *David Yong, David L. Lambert, & Inese I. Ivans.* 599, 1357 (2003)

IVEZIĆ, Ž. See HOPKINS, A. M., et al. Star Formation Rate Indicators in the Sloan Digital Sky Survey.

IVEZIĆ, ŽELJKO. See EISENSTEIN, DANIEL J., et al. Average Spectra of Massive Galaxies in the Sloan Digital Sky Survey.

See HELMI, AMINA, et al. Selection of Metal-poor Giant Stars Using the Sloan Digital Sky Survey Photometric System.

See GLAZEBROOK, KARL, et al. The Sloan Digital Sky Survey: The Cosmic Spectrum and Star Formation History.

See SZALAY, ALEXANDER S., et al. Karhunen-Loève Estimation of the Power Spectrum Parameters from the Angular Distribution of Galaxies in Early Sloan Digital Sky Survey Data.

See BLANTON, MICHAEL R., et al. The Broadband Optical Properties of Galaxies with Redshifts $0.02 < z < 0.22$.

See NEWBERG, HEIDI JO, et al. Sagittarius Tidal Debris 90 kiloparsecs from the Galactic Center.

IVISON, R. J. A SCUBA Galaxy in the Protocluster around 53W002 at $z = 2.4$. *Ian Smail, R. J. Ivison, D. G. Gilbank, J. S. Dunlop, W. C. Keel, K. Motohara, & J. A. Stevens.* 583, 551 (2003)

See WEBB, T. M., et al. The Canada-UK Deep Submillimeter Survey. VI. The 3 Hour Field.

Variability of Submillijansky Radio Sources. *C. L. Carilli, R. J. Ivison, & D. A. Frail.* 590, 192 (2003)

Cold Dust in Kepler's Supernova Remnant. *H. L. Morgan, L. Dunne, S. A. Eales, R. J. Ivison, & M. G. Edmunds.* 597, L33 (2003)

See NERI, R., et al. Interferometric Observations of Powerful CO Emission from Three Submillimeter Galaxies at $z = 2.39$, 2.51, and 3.35.

Chandra Detections of SCUBA Galaxies around High-z Radio Sources. *Ian Smail, C. A. Scharf, R. J. Ivison, J. A. Stevens, R. G. Bower, & J. S. Dunlop.* 599, 86 (2003)

IVISON, ROB. Extended X-Ray Emission around 4C 41.17 at $z = 3.8$. *Caleb Scharf, Ian Smail, Rob Ivison, Richard Bower, Wil van Breugel, & Michiel Reuland.* 596, 105 (2003)

IVISON, ROB J. Gas and Dust in the Extremely Red Object ERO J164502+4626.4. *Thomas R. Greve, Rob J. Ivison, & Padeli P. Papadopoulos.* 599, 839 (2003)

IWAMATSU, H. See BÖTTCHER, M., et al. Coordinated Multiwavelength Observations of BL Lacertae in 2000.

IWAMOTO, NOBUYUKI. See AOKI, WAKO, et al. Europium Isotope Ratios in s-Process Element-enhanced Metal-poor Stars: A New Probe of the ^{151}Sm Branching.

Nucleosynthesis in Baryon-Rich Outflows Associated with Gamma-Ray Bursts. *Susumu Inoue, Nobuyuki Iwamoto, Manabu Orito, & Mariko Terasawa.* 595, 294 (2003)

IWAMURO, FUMIHIDE. See IYE, MASANORI, et al. ERO R1 in the Field of Cl 0939+4713: Evidence for an S0-Like Galaxy at $z \sim 1.5$.

Infrared Spectroscopy of 15 Radio Galaxies at $2 < z < 2.6$. *Fumihide Iwamuro, Kentaro Motohara, Toshinori Maihara, Masahiko Kimura, Shigeru Eto, Takanori Shima, Daisaku Mochida, Shinpei Wada, Satoko Imai, & Kentaro Aoki.* 598, 178 (2003)

IWASAWA, K. X-Ray–Extreme Ultraviolet Simultaneous Observations of NGC 5548: Fast Extreme Ultraviolet Dip without X-Ray Variation. *Y. Haba, H. Kunieda, K. Misaki, Y. Terashima, J. S. Kaastra, R. Mewe, A. C. Fabian, & K. Iwasawa.* 599, 949 (2003)

IWATA, MITSUHIRO. See KAMEGAI, KAZUHISA, et al. Distribution of the C I Emission in the ρ Ophiuchi Dark Cloud.

IYE, M. See KAWABATA, K. S., et al. On the Spectrum and Spectropolarimetry of Type Ic Hypernova SN 2003dh/GRB 030329.

IYE, MASANORI. See GOTO, MIWA, et al. Spatially Resolved 3 Micron Spectroscopy of IRAS 22272+5435: Formation and Evolution of Aliphatic Hydrocarbon Dust in Proto–Planetary Nebulae.

See PYO, TAE-SOO, et al. Adaptive Optics Spectroscopy of the [Fe II] Outflow from DG Tauri.

ERO R1 in the Field of Cl 0939+4713: Evidence for an S0-Like Galaxy at $z \sim 1.5$. *Masanori Iye, Kazuhiro Shimasaku, Satoshi Miyazaki, Chris Simpson, Masatoshi Imanishi, Nabunari Kashikawa, Takayuki Kodama, Masashi Chiba, Yoshihiko Saito, Miwa Goto, Fumihide Iwamuro, Naoto Kobayashi, Sadanori Okamura, & Hiroshi Terada.* 590, 770 (2003)

See OHYAMA, YOUICHI, et al. On the Origin of Lyα Blobs at High Redshift: Kinematic Evidence of a Hyperwind Galaxy at $z = 3.1$.

See GOTO, MIWA, et al. Carbon Isotope Ratio in ^{12}CO/^{13}CO toward Local Molecular Clouds with Near-Infrared High-Resolution Spectroscopy of Vibrational Transition Bands.

IZMODENOV, VLAD. Effects of Interstellar and Solar Wind Ionized Helium on the Interaction of the Solar Wind with the Local Interstellar Medium. *Vlad Izmodenov, Yury G. Malama, George Gloeckler, & Johannes Geiss.* 594, L59 (2003)

IZOTOV, YURI I. New Light on the Stellar Populations in I Zw 18: Deep Near-Infrared Imaging. *Leslie K. Hunt, Trinh X. Thuan, & Yuri I. Izotov.* 588, 281 (2003)

Izumiura, Hideyuki. See Sato, Bun'ei, et al. A Planetary Companion to the G-Type Giant Star HD 104985.

J. Wijers, R. A. M. See Hjorth, J., et al. Very High Column Density and Small Reddening toward GRB 020124 at $z = 3.20$.

Jablonski, Francisco J. Optical Polarization and Near-Infrared Photometry of the Proto–Planetary Nebula Henize 3-1475. *Claudia V. Rodrigues, Francisco J. Jablonski, Jane Gregorio-Hetem, Gabriel R. Hickel, & Marilia J. Sartori.* 587, 312 (2003)

Jackel, B. J. Rotation Measures of Compact Sources in the Canadian Galactic Plane Survey. *J. C. Brown, A. R. Taylor, & B. J. Jackel.* 145, 213 (2003)

Jackman, Charles H. Ozone Depletion from Nearby Supernovae. *Neil Gehrels, Claude M. Laird, Charles H. Jackman, John K. Cannizzo, Barbara J. Mattson, & Wan Chen.* 585, 1169 (2003)

Jackson, C. See Bennett, C. L., et al. The *Microwave Anisotropy Probe* Mission.

See Page, L., et al. The Optical Design and Characterization of the *Microwave Anisotropy Probe*.

Jackson, D. R. Two-dimensional Monte Carlo/Fokker-Planck Simulations of Flares in Accretion Disk Corona Models. *M. Böttcher, D. R. Jackson, & E. P. Liang.* 586, 389 (2003)

Jackson, J. M. CO $J = 7 \rightarrow 6$ Observations of NGC 253: Cosmic-Ray–heated Warm Molecular Gas. *C. M. Bradford, T. Nikola, G. J. Stacey, A. D. Bolatto, J. M. Jackson, M. L. Savage, J. A. Davidson, & S. J. Higdon.* 586, 891 (2003)

Jackson, James M. Resolving the Kinematic Distance Ambiguity toward Galactic H II Regions. *Michal A. Kolpak, James M. Jackson, T. M. Bania, D. P. Clemens, & John M. Dickey.* 582, 756 (2003)

See Kraemer, Kathleen E., et al. Five Star-forming Cores in the Galactic Ring Survey: A Mid-Infrared Study.

Unusual CO Line Ratios and Kinematics in the N83/N84 Region of the Small Magellanic Cloud. *Alberto D. Bolatto, Adam Leroy, Frank P. Israel, & James M. Jackson.* 595, 167 (2003)

Jackson, N. J. See Koopmans, L. V. E., et al. Extrinsic Radio Variability of JVAS/CLASS Gravitational Lenses.

Jackson, Tom. A Catalog of Bright Filamentary Structures in the Interstellar Medium. *Tom Jackson, Michael Werner, & T. N. Gautier III.* 149, 365 (2003)

Jacobsen, J. See Ahrens, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

Jacoby, B. A. The Nearby Neutron Star RX J0720.4−3125 from Radio to X-Rays. *D. L. Kaplan, M. H. van Kerkwijk, H. L. Marshall, B. A. Jacoby, S. R. Kulkarni, & D. A. Frail.* 590, 1008 (2003)

PSR J1909−3744: A Binary Millisecond Pulsar with a Very Small Duty Cycle. *B. A. Jacoby, M. Bailes, M. H. van Kerkwijk, S. Ord, A. Hotan, S. R. Kulkarni, & S. B. Anderson.* 599, L99 (2003)

Jacoby, George. Andromeda VIII: A New Tidally Distorted Satellite of M31. *Heather L. Morrison, Paul Harding, Denise Hurley-Keller, & George Jacoby.* 596, L183 (2003)

Jacoby, George H. Kinematics of Planetary Nebulae in M51's Tidal Debris. *Patrick R. Durrell, J. Christopher Mihos, John J. Feldmeier, George H. Jacoby, & Robin Ciardullo.* 582, 170 (2003)

Intracluster Planetary Nebulae in the Virgo Cluster. II. Imaging Catalog. *John J. Feldmeier, Robin Ciardullo, George H. Jacoby, & Patrick R. Durrell.* 145, 65 (2003)

Jäger, K. Quasar Elemental Abundances at High Redshifts. *M. Dietrich, F. Hamann, J. C. Shields, A. Constantin, J. Heidt, K. Jäger, M. Vestergaard, & S. J. Wagner.* 589, 722 (2003)

Internal Kinematics of Spiral Galaxies in Distant Clusters. *B. L. Ziegler, A. Böhm, K. Jäger, J. Heidt, & C. Möllenhoff.* 598, L87 (2003)

Jaehnig, K. P. The Wisconsin Hα Mapper Northern Sky Survey. *L. M. Haffner, R. J. Reynolds, S. L. Tufte, G. J. Madsen, K. P. Jaehnig, & J. W. Percival.* 149, 405 (2003)

Jaffe, A. See Feldman, H., et al. An Estimate of Ω_m without Conventional Priors.

Jaffe, A. H. Gravitational Waves Probe the Coalescence Rate of Massive Black Hole Binaries. *A. H. Jaffe & D. C. Backer.* 583, 616 (2003)

See Ruhl, J. E., et al. Improved Measurement of the Angular Power Spectrum of Temperature Anisotropy in the Cosmic Microwave Background from Two New Analyses of BOOMERANG Observations.

Jaffe, D. T. Kinematics of Ultracompact H II Regions Revealed: High Spatial and Spectral Resolution Mapping of the 12.8 Micron [Ne II] Line in Monoceros R2. *D. T. Jaffe, Q. Zhu, J. H. Lacy, & M. Richter.* 596, 1053 (2003)

Jaffe, Daniel T. A CS $J = 5 \rightarrow 4$ Mapping Survey Toward High-Mass Star-Forming Cores Associated with Water Masers. *Yancy L. Shirley, Neal J. Evans II, Kaisa E. Young, Claudia Knez, & Daniel T. Jaffe.* 149, 375 (2003)

Jain, A. K. Correlated Radio:X-Ray Emission in the Hard States of Galactic Microquasars. *M. Choudhury, A. R. Rao, S. V. Vadawale, & A. K. Jain.* 593, 452 (2003)

Jain, Bhuvnesh. The Three-Point Correlation Function for Spin-2 Fields. *Masahiro Takada & Bhuvnesh Jain.* 583, L49 (2003)

See Szalay, Alexander S., et al. Karhunen-Loève Estimation of the Power Spectrum Parameters from the Angular Distribution of Galaxies in Early Sloan Digital Sky Survey Data.

Jakobsson, P. Delayed Soft X-Ray Emission Lines in the Afterglow of GRB 030227. *D. Watson, J. N. Reeves, J. Hjorth, P. Jakobsson, & K. Pedersen.* 595, L29 (2003)

James, C. Renee. Chemical Substructure in the Milky Way Halo: A New Population of Old Stars. *Inese I. Ivans, Christopher Sneden, C. Renée James, George W. Preston, Jon P. Fulbright, Peter A. Höflich, Bruce W. Carney, & J. Craig Wheeler.* 592, 906 (2003)

Jang-Condell, Hannah. Radiative Transfer on Perturbations in Protoplanetary Disks. *Hannah Jang-Condell & Dimitar D. Sasselov.* 593, 1116 (2003)

Janiuk, Agnieszka. See Bechtold, Jill, et al. *Chandra* Survey of Radio-quiet, High-Redshift Quasars.

Janka, Hans-Thomas. Electron Neutrino Pair Annihilation: A New Source for Muon and Tau Neutrinos in Supernovae. *Robert Buras, Hans-Thomas Janka, Mathias Th. Keil, Georg G. Raffelt, & Markus Rampp.* 587, 320 (2003)

Monte Carlo Study of Supernova Neutrino Spectra Formation. *Mathias Th. Keil, Georg G. Raffelt, & Hans-Thomas Janka.* 590, 971 (2003)

Jannuzi, B. T. See Matheson, T., et al. Photometry and Spectroscopy of GRB 03029 and Its Associated Supernova 2003dh: The First Two Months.

Jannuzi, Buell T. The Nature of the Ultraviolet/X-Ray Absorber in PG 2302+029. *Bassem M. Sabra, Fred Hamann, Buell T. Jannuzi, Ian M. George, & Joseph C. Shields.* 590, 66 (2003)

Red Galaxy Clustering in the NOAO Deep Wide-Field Survey. *Michael J. I. Brown, Arjun Dey, Buell T. Jannuzi, Tod R. Lauer, Glenn P. Tiede, & Valerie J. Mikles.* 597, 225 (2003)

Jansen, R. A. See Stanek, K. Z., et al. Spectroscopic Discovery of the Supernova 2003dh Associated with GRB 030329.

See Matheson, T., et al. Photometry and Spectroscopy of GRB 03029 and Its Associated Supernova 2003dh: The First Two Months.

Janulis, R. See Mukadem, Anjum S., et al. Constraining the Evolution of ZZ Ceti.

Jarosik, N. See Bennett, C. L., et al. The *Microwave Anisotropy Probe* Mission.

See Page, L., et al. The Optical Design and Characterization of the *Microwave Anisotropy Probe*.

Design, Implementation, and Testing of the *Microwave Anisotropy Probe* Radiometers. *N. Jarosik, C. L. Bennett, M. Halpern, G. Hinshaw, A. Kogut, M. Limon, S. S. Meyer, L. Page, M. Pospieszalski, D. N. Spergel, G. S. Tucker, D. T. Wilkinson, E. Wollack, E. L. Wright, & Z. Zhang.* 145, 413 (2003)

See Bennett, C. L., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Preliminary Maps and Basic Results.

First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: On-Orbit Radiometer Characterization. *N. Jarosik, C. Barnes, C. L. Bennett, M. Halpern, G. Hinshaw, A. Kogut, M. Limon, S. S. Meyer, L. Page, D. N. Spergel, G. S. Tucker, J. L. Weiland, E. Wollack, & E. L. Wright.* 148, 29 (2003)

See Page, L., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Beam Profiles and Window Functions.

See Barnes, C., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Galactic Signal Contamination from Sidelobe Pickup.

See Hinshaw, G., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Data Processing Methods and Systematic Errors Limits.

See Bennett, C. L., et al. First-Year *Wilkinson Microwave Anisotrophy Probe* (*WMAP*) Observations: Foreground Emission.

See Komatsu, E., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Tests of Gaussianity.
See Hinshaw, G., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: The Angular Power Spectrum.
See Kogut, A., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Temperature-Polarization Correlation.
See Spergel, D. N., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Determination of Cosmological Parameters.
See Verde, L., et al. First-Year *Wilkinson Microwave Anisotrophy Probe* (*WMAP*) Observations: Parameter Estimation Methodology.
See Peiris, H. V., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Implications for Inflation.
See Page, L., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Interpretation of the TT and TE Angular Power Spectrum Peaks.

Jarrett, T. H. Clusters of Galaxies in the Local Universe. *C. S. Kochanek, Martin White, J. Huchra, L. Macri, T. H. Jarrett, S. E. Schneider, & J. Mader.* 585, 161 (2003)
Nascent Starbursts in Synchrotron-deficient Galaxies with Hot Dust. *H. Roussel, G. Helou, R. Beck, J. J. Condon, A. Bosma, K. Matthews, & T. H. Jarrett.* 593, 733 (2003)

Jarrett, Thomas H. See Lu, Nanyao, et al. Infrared Emission of Normal Galaxies from 2.5 to 12 Microns: *Infrared Space Observatory* Spectra, Near-Infrared Continuum, and Mid-Infrared Emission Features.

Jarrett, Tom. Azimuthal and Kinematic Segregation of Neutral and Molecular Gas in Arp 118: The Yin-Yang Galaxy NGC 1144. *P. N. Appleton, V. Charmandaris, Yu Gao, Tom Jarrett, & M. A. Bransford.* 586, 112 (2003)

Jarrett, Tom H. Near-Infrared Synchrotron Emission from Cassiopeia A. *Jeonghee Rho, Stephen P. Reynolds, William T. Reach, Tom H. Jarrett, Glenn E. Allen, & John C. Wilson.* 592, 299 (2003)

Jarvis, Matt J. A $3 \times 10^9\ M_\odot$ Black Hole in the Quasar SDSS J1148+5251 at $z = 6.41$. *Chris J. Willott, Ross J. McLure, & Matt J. Jarvis.* 587, L15 (2003)

Jatenco-Pereira, V. Numerical Simulations of Astrophysical Jets from Keplerian Disks with Periodic Ejection. *B. F. Vitorino, V. Jatenco-Pereira, & R. Opher.* 592, 332 (2003)
Dusty Molecular Cloud Collapse in the Presence of Alfvén Waves. *D. Falceta-Goncalves, M. C. de Juli, & V. Jatenco-Pereira.* 597, 970 (2003)

Jauncey, D. L. The Discovery of H_2O Maser Emission in Seven Active Galactic Nuclei and at High Velocities in the Circinus Galaxy. *L. J. Greenhill, P. T. Kondrakto, J. E. J. Lovell, T. B. H. Kuiper, J. M. Moran, D. L. Jauncey, & G. P. Baines.* 582, L11 (2003)
See Bignall, H. E., et al. Rapid Variability and Annual Cycles in the Characteristic Timescale of the Scintillating Source PKS 1257−326.
See Greenhill, L. J., et al. A Warped Accretion Disk and Wide-Angle Outflow in the Inner Parsec of the Circinus Galaxy.

Jaunsen, A. O. See Hjorth, J., et al. Very High Column Density and Small Reddening toward GRB 020124 at $z = 3.20$.

Javakhishvili, G. On a Mechanism for Enhancing Magnetic Activity in Tidally Interacting Binaries: Erratum (ApJ, 579, 810 [2002]). *T. Zaqarashvili, G. Javakhishvili, & G. Belvedere.* 591, 498 (2003) (Orig. paper in 579, 810 (2002))

Jayawardhana, Ray. Evidence for a T Tauri Phase in Young Brown Dwarfs. *Ray Jayawardhana, Subhanjoy Mohanty, & Gibor Basri.* 592, 282 (2003)
Indications for Grain Growth and Mass Decrease in Cold Dust Disks around Classical T Tauri Stars in the MBM 12 Young Association. *Michiel R. Hogerheijde, Doug Johnstone, Isamu Matsuyama, Ray Jayawardhana, & James Muzerolle.* 593, L101 (2003)
Magellan Echelle Spectroscopy of TW Hydrae Brown Dwarfs. *Subhanjoy Mohanty, Ray Jayawardhana, & David Barrado y Navascues.* 593, L109 (2003)

Jefferies, Stuart M. How Well Can We Infer the Properties of the Solar Acoustic Sources? *Stuart M. Jefferies, Giuseppe Severino, Pier-Francesco Moretti, Maurizio Oliviero, & Cynthia Giebink.* 596, L117 (2003)

Jeffery, D. J. See Kawabata, K. S., et al. On the Spectrum and Spectropolarimetry of Type Ic Hypernova SN 2003dh/GRB 030329.

Jeffery, E. J. See Green, E. M., et al. Discovery of a New Class of Pulsating Stars: Gravity-Mode Pulsators among Subdwarf B Stars.

Jefferys, W. H. A Bayesian Analysis of the Cepheid Distance Scale. *Thomas G. Barnes III, W. H. Jefferys, J. O. Berger, Peter J. Mueller, K. Orr, & R. Rodriguez.* 592, 539 (2003)

Jefferys, William H. Central Mass Concentration and Bar Dissolution in Nearby Spiral Galaxies. *Mousumi Das, Peter J. Teuben, Stuart N. Vogel, Michael W. Regan, Kartik Sheth, Andrew I. Harris, & William H. Jefferys.* 582, 190 (2003)

Jeffries, R. D. *Chandra* Observations of the Young Open Cluster NGC 2516. *F. Damiani, E. Flaccomio, G. Micela, S. Sciortino, F. R. Harnden, Jr., S. S. Murray, S. J. Wolk, & R. D. Jeffries.* 588, 1009 (2003)

Jeltema, Tesla E. X-Ray Source Population in the Elliptical Galaxy NGC 720 with *Chandra*. *Tesla E. Jeltema, Claude R. Canizares, David A. Buote, & Gordon P. Garmire.* 585, 756 (2003)

Jenet, Fredrick A. Using the Intensity Modulation Index to Test Pulsar Radio Emission Models. *Fredrick A. Jenet & Janusz Gil.* 596, L215 (2003)

Jenkins, Adrian. See Berlind, Andreas A., et al. The Halo Occupation Distribution and the Physics of Galaxy Formation.

Jenkins, E. B. See Wakker, B. P., et al. The *Far Ultraviolet Spectroscopic Explorer* Survey of O VI Absorption in and near the Galaxy.
See Savage, B. D., et al. Distribution and Kinematics of O VI in the Galactic Halo.
See Sembach, K. R., et al. Highly Ionized High-Velocity Gas in the Vicinity of the Galaxy.
Far Ultraviolet Spectroscopic Explorer Survey of the Local Interstellar Medium within 200 Parsecs. *N. Lehner, E. B. Jenkins, C. Gry, H. W. Moos, P. Chayer, & S. Lacour.* 595, 858 (2003)

Jenkins, Jon M. Detecting Reflected Light from Close-in Extrasolar Giant Planets with the *Kepler* Photometer. *Jon M. Jenkins & Laurance R. Doyle.* 595, 429 (2003)

Jensen, Adam G. See Gnedin, Nickolay Y., et al. Linear Gas Dynamics in the Expanding Universe.

Jensen, Eric L. N. Protoplanetary Disk Mass Distribution in Young Binaries. *Eric L. N. Jensen & Rachel L. Akeson.* 584, 875 (2003)

Jensen, J. B. A Major Soft Gamma Repeater–like Outburst and Rotation Glitch in the No-longer-so-anomalous X-Ray Pulsar 1E 2259+586. *V. M. Kaspi, F. P. Gavriil, P. M. Woods, J. B. Jensen, M. S. E. Roberts, & D. Chakrabarty.* 588, L93 (2003)

Jensen, Joseph B. Measuring Distances and Probing the Unresolved Stellar Populations of Galaxies Using Infrared Surface Brightness Fluctuations. *Joseph B. Jensen, John L. Tonry, Brian J. Barris, Rodger I. Thompson, Michael C. Liu, Marcia J. Rieke, Edward A. Ajhar, & John P. Blakeslee.* 583, 712 (2003)

Jeon, Young-Beom. See Colley, Wesley N., et al. Around-the-Clock Observations of the Q9057+561A,B Gravitationally Lensed Quasar. II. Results for the Second Observing Season.

Jerjen, H. See Price, P. A., et al. Discovery of GRB 020405 and Its Late Red Bump.

Jernigan, J. G. High Resolution X-Ray Spectroscopic Constraints on Cooling-Flow Models for Clusters of Galaxies. *J. R. Peterson, S. M. Kahn, F. B. S. Paerels, J. S. Kaastra, T. Tamura, J. A. M. Bleeker, C. Ferrigno, & J. G. Jernigan.* 590, 207 (2003)
See Crew, G. B., et al. *HETE-2* Localization and Observation of the Bright, X-Ray–rich Gamma-Ray Burst GRB 021211.

Jernigan, J. Garrett. The X-Ray Afterglows of GRB 020813 and GRB 021004 with *Chandra* HETGS: Possible Evidence for a Supernova prior to GRB 020813. *Nathanial R. Butler, Herman L. Marshall, George R. Ricker, Roland K. Vanderspek, Peter G. Ford, Geoffrey B. Crew, Donald Q. Lamb, & J. Garrett Jernigan.* 597, 1010 (2003)

Jessberger, Elmar K. Elemental Abundances and Mass Densities of Dust and Gas in the Local Interstellar Cloud. *Hiroshi Kimura, Ingrid Mann, & Elmar K. Jessberger.* 582, 846 (2003)
Composition, Structure, and Size Distribution in the Local Interstellar Cloud. *Hiroshi Kimura, Ingrid Mann, & Elmar K. Jessberger.* 583, 314 (2003)

Jevremović, D. The Extreme-Ultraviolet Continuum of a Strong Stellar Flare. *D. J. Christian, M. Mathioudakis, D. Jevremović, J. Dupuis, S. Vennes, & A. Kawka.* 593, L105 (2003)

Jewell, P. R. A Sensitive Very Large Array Search for Small-Scale Glycine Emission toward OMC-1. *J. M. Hollis, J. A. Pedelty, L. E. Snyder, P. R. Jewell, F. J. Lovas, Patrick Palmer, & S.-Y. Liu.* 588, 353 (2003)
A Polarization Survey of SiO Maser Variability in Evolved Stars. *J. Glenn, P. R. Jewell, R. Fourre, & L. Miaja.* 588, 478 (2003)
Kinematics of the SGR B2 (N-LMH) Molecular Core. *Jan M. Hollis, J. A. Pedelty, D. A. Boboltz, S.-Y. Liu, L. E. Snyder, Patrick Palmer, F. J. Lovas, & P. R. Jewell.* 596, L235 (2003)

JHA, S. See MATHESON, T., et al. The Spectroscopic Variability of GRB 021004.

See GARNAVICH, P. M., et al. Discovery of the Low-Redshift Optical Afterglow of GRB 011121 and Its Progenitor Supernova SN 2001ke.

See BERSIER, D., et al. The Strongly Polarized Afterglow of GRB 020405.

See BERSIER, D., et al. The Unusual Optical Afterglow of the Gamma-Ray Burst GRB 021004: Color Changes and Short-Timescale Variability.

See MATHESON, T., et al. Photometry and Spectroscopy of GRB 03029 and Its Associated Supernova 2003dh: The First Two Months.

JHA, SAURABH. The Early Light Curve of the Optical Afterglow of GRB 021211. *Weidong Li, Alexei V. Filippenko, Ryan Chornock, & Saurabh Jha.* 586, L9 (2003)

See TONRY, JOHN L., et al. Cosmological Results from High-z Supernovae.

High-Resolution Spectroscopic Follow-up of OGLE Planetary Transit Candidates in the Galactic Bulge: Two Possible Jupiter-Mass Planets and Two Blends. *Maciej Konacki, Guillermo Torres, Dimitar D. Sasselov, & Saurabh Jha.* 597, 1076 (2003)

JI, HAISHEN. Observational Evidence of a Magnetic Flux Rope Eruption Associated with the X3 Flare on 2002 July 15. *Yu Liu, Yunchun Jiang, Haishen Ji, Hongqi Zhang, & Haimin Wang.* 593, L137 (2003)

JI, HAISHENG. Observations of the Failed Eruption of a Filament. *Haisheng Ji, Haimin Wang, Edward J. Schmahl, Y.-J. Moon, & Yunchun Jiang.* 595, L135 (2003)

Hα Dimmings Associated with the X1.6 Flare and Halo Coronal Mass Ejection on 2001 October 19. *Yunchun Jiang, Haisheng Ji, Haimin Wang, & Huadong Chen.* 597, L161 (2003)

JI, JIAN FENG. Low-Frequency Coherence Break in the Soft X-Ray State of GRS 1915+105. *Jian Feng Ji, Shuang Nan Zhang, Jin Lu Qu, & Ti Pei Li.* 584, L23 (2003)

JI, JIANGHUI. The Dynamical Simulations of the Planets Orbiting GJ 876: Erratum (ApJ, 572, 1041 [2002]). *Jianghui Ji, Guangyu Li, & Lin Liu.* 582, 558 (2003) (Orig. paper in 572, 1041 (2002))

Could the 55 Cancri Planetary System Really Be in the 3:1 Mean Motion Resonance? *Jianghui Ji, Hiroshi Kinoshita, Lin Liu, & Guangyu Li.* 585, L139 (2003)

The Librating Companions in HD 37124, HD 12661, HD 82943, 47 Ursa Majoris, and GJ 876: Alignment or Antialignment? *Jianghui Ji, Lin Liu, Hiroshi Kinoshita, Jilin Zhou, Hiroshi Nakai, & Guangyu Li.* 591, L57 (2003)

JIA, H. Y. See AMENOMORI, M., et al. Multi-TeV Gamma-Ray Flares from Markarian 421 in 2000 and 2001 Observed with the Tibet Air Shower Array.

JIANG, ING-GUEY. On the Fate of Close-in Extrasolar Planets. *Ing-Guey Jiang, Wing-Huen Ip, & Li-Chen Yeh.* 582, 449 (2003)

JIANG, X. J. See MUKADEM, ANJUM S., et al. Constraining the Evolution of ZZ Ceti.

JIANG, YUNCHUN. Observational Evidence of a Magnetic Flux Rope Eruption Associated with the X3 Flare on 2002 July 15. *Yu Liu, Yunchun Jiang, Haishen Ji, Hongqi Zhang, & Haimin Wang.* 593, L137 (2003)

Observations of the Failed Eruption of a Filament. *Haisheng Ji, Haimin Wang, Edward J. Schmahl, Y.-J. Moon, & Yunchun Jiang.* 595, L135 (2003)

Hα Dimmings Associated with the X1.6 Flare and Halo Coronal Mass Ejection on 2001 October 19. *Yunchun Jiang, Haisheng Ji, Haimin Wang, & Huadong Chen.* 597, L161 (2003)

JIANG, ZHAOJI. Multicolor Photometry of the Galaxies in A2255 by the Beijing-Arizona-Taiwan-Connecticut Survey and Sloan Digital Sky Survey. *Qirong Yaun, Xu Zhou, & Zhaoji Jiang.* 149, 53 (2003)

JIANG, ZHIBO. A Near-Infrared Study of the Star-Forming Region S269. *Zhibo Jiang, Yongquiang Yao, Ji Yang, Daisuke Baba, Daisuke Kato, Mikio Kurita, Chie Nagashima, Tetsuya Nagata, Takahiro Nagayama, Yasushi Nakajima, Miki Ishii, Motohide Tamura, & Koji Sugitani.* 596, 1064 (2003)

JIMÉNEZ, A. Excitation and Damping of Low-Degree Solar p-Modes during Activity Cycle 23: Analysis of GOLF and VIRGO/Sun Photometer Data. *S. J. Jiménez-Reyes, R. A. García, A. Jiménez, & W. J. Chaplin.* 595, 446 (2003)

JIMENEZ, R. Photoelectric Heating and [C II] Cooling in Translucent Clouds: Results for Cloud Models Based on Simulations of Compressible Magnetohydrodynamic Turbulence. *M. Juvela, P. Padoan, & R. Jimenez.* 591, 258 (2003)

JIMENEZ, RAUL. Constraints on the Equation of State of Dark Energy and the Hubble Constant from Stellar Ages and the Cosmic Microwave Background. *Raul Jimenez, Licia Verde, Tommaso Treu, & Daniel Stern.* 593, 622 (2003)

JIMÉNEZ-BAILÓN, E. Nuclear Activity and Massive Star Formation in the Low-Luminosity Active Galactic Nucleus NGC 4303: *Chandra* X-Ray Observations. *E. Jiménez-Bailón, M. Santos-Lleó, J. M. Mas-Hesse, M. Guainazzi, L. Colina, M. Cerviño, & Rosa M. González Delgado.* 593, 127 (2003)

JIMÉNEZ BAILÓN, ELENA. Detection of a Super–Star Cluster as the Ionizing Source in the Low-Luminosity Active Galactic Nucleus NGC 4303: Erratum (ApJ, 579, 545 [2002]). *Luis Colina, Rosa Gonzalez Delgado, J. Miguel Mas-Hesse, Claus Leitherer, & Elena Jiménez Bailón.* 582, 1269 (2003) (Orig. paper in 579, 545 (2002))

Detection of a Super–Star Cluster as the Ionizing Source in the Low-Luminosity Active Galactic Nucleus NGC 4303: Erratum (ApJ, 582, 1269 [2003]). *Luis Colina, Rosa Gonzalez-Delgado, J. Miguel Mas-Hesse, Claus Leitherer, & Elena Jiménez-Bailón.* 586, 692 (2003) (Orig. paper in 582, 1269 (2003))

JIMENEZ-GARATE, M. A. Discrete X-Ray Signatures of a Photoionized Plasma above the Accretion Disk of the Neutron Star EXO 0748−676. *M. A. Jimenez-Garate, N. S. Schulz, & H. L. Marshall.* 590, 432 (2003)

JIMÉNEZ-REYES, S. The Rotation of the Deep Solar Layers. *S. Couvidat, R. A. García, S. Turck-Chièze, T. Corbard, C. J. Henney, & S. Jiménez-Reyes.* 597, L77 (2003)

JIMÉNEZ-REYES, S. J. Excitation and Damping of Low-Degree Solar p-Modes during Activity Cycle 23: Analysis of GOLF and VIRGO/Sun Photometer Data. *S. J. Jiménez-Reyes, R. A. García, A. Jiménez, & W. J. Chaplin.* 595, 446 (2003)

JING, JU. Periodic Motion along a Solar Filament Initiated by a Subflare. *Ju Jing, Jeongwoo Lee, Thomas J. Spirock, Yan Xu, Haimin Wang, & G. S. Choe.* 584, L103 (2003)

Study of Ribbon Separation of a Flare Associated with a Quiescent Filament Eruption. *Haimin Wang, Jiong Qui, Ju Jing, & Hongqi Zhang.* 593, 564 (2003)

JING, Y. P. Spatial and Dynamical Biases in Velocity Statistics of Galaxies. *Kohji Yoshikawa, Y. P. Jing, & Gerhard Börner.* 590, 654 (2003)

Angular Momentum Distribution of Hot Gas and Implications for Disk Galaxy Formation. *D. N. Chen, Y. P. Jing, & Kohji Yoshikawa.* 597, 35 (2003)

Mass and Redshift Dependence of Dark Halo Structure. *D. H. Zhao, Y. P. Jing, H. J. Mo, & G. Börner.* 597, L9 (2003)

JING, YIPENG. Hydrogen Clouds before Reionization: A Lognormal Model Approach. *Hongguang Bi, Li-Zhi Fang, Longlong Feng, & Yipeng Jing.* 598, 1 (2003)

JOERGENS, V. Rotational Periods of Very Young Brown Dwarfs and Very Low-Mass Stars in Chamaeleon I. *V. Joergens, M. Fernández, J. M. Carpenter, & R. Neuhäuser.* 594, 971 (2003)

JOHANNESSEN, F. See MUKADEM, ANJUM S., et al. Constraining the Evolution of ZZ Ceti.

JOHANSSON, S. Experimental f-Value and Isotopic Structure for the Ni I Line Blended with [O I] at 6300 Å. *S. Johansson, U. Litzén, H. Lundberg, & Z. Zhang.* 584, L107 (2003)

Revisited Abundance Diagnostics in Quasars: Fe II/Mg II Ratios. *E. Verner, F. Bruhweiler, D. Verner, S. Johansson, & T. Gull.* 592, L59 (2003)

JOHNS-KRULL, C. See LIN, R. P., et al. *RHESSI* Observations of Particle Acceleration and Energy Release in an Intense Solar Gamma-Ray Line Flare.

JOHNS-KRULL, CHRISTOPHER M. Transition Region Emission from Very Low Mass Stars. *Suzanne L. Hawley & Christopher M. Johns-Krull.* 588, L109 (2003)

Natural Coronagraphics Observations of the Eclipsing T Tauri System KH 15D: Evidence of Accretion and Bipolar Outflow in a Weak-Line T Tauri Star. *Catrina M. Hamilton, William Herbst, Reinhard Mundt, Coryn A. L. Bailer-Jones, & Christopher M. Johns-Krull.* 591, L45 (2003)

An *IUE* Atlas of Pre–Main-Sequence Stars. III. Co-Added Final Archive Spectra from the Long-Wavelength Cameras. *Jeff A. Valenti, Adam A. Fallon, & Christopher M. Johns-Krull.* 147, 305 (2003)

See HAWLEY, SUZANNE L., et al. Multiwavelength Observations of Flares on AD Leonis.

The Relationship Between X-Ray Radiance and Magnetic Flux. *Alexei A. Pevtsov, George H. Fisher, Loren W. Acton, Dana W. Longcope, Christopher M. Johns-Krull, Charles C. Kankelborg, & Thomas R. Metcalf.* 598, 1387 (2003)

JOHNSON, BRYAN M. Nonlinear Outcome of Gravitational Instability in Disks with Realistic Cooling. *Bryan M. Johnson & Charles F. Gammie.* 597, 131 (2003)

JOHNSON, JENNIFER A. Oxygen Abundances in Metal-poor Stars. *Jon P. Fulbright & Jennifer A. Johnson.* 595, 1154 (2003)

JOHNSON, JUDD. See HABBAL, SHADIA RIFAI, et al. On the Detection of the Signature of Silicon Nanoparticle Dust Grains in Coronal Holes.

JOHNSON, KELSEY E. Detection of a Near-Infrared Counterpart to the Massive Protostar G192.16−3.82. *Rémy Indebetouw, Christer Watson, Kelsey E. Johnson, Barbara Whitney, & Ed Churchwell.* 596, L83 (2003)

The Spectral Energy Distributions of Infant Super–Star Clusters in Henize 2-10 from 7 Millimeters to 6 Centimeters. *Kelsey E. Johnson & Henry A. Kobulnicky.* 597, 923 (2003)

JOHNSON, M. See BOGDAN, T. J., et al. Waves in the Magnetized Solar Atmosphere. II. Waves from Localized Sources in Magnetic Flux Concentrations.

JOHNSON, R. See COLAVITA, M., et al. Observations of DG Tauri with the Keck Interferometer.

JOHNSON, WARREN. Detectability of Gravitational Waves from SN 1987A. *Giovanni Santostasi, Warren Johnson, & Juhan Frank.* 586, 1191 (2003)

JOHNSTON, DAVID. See SZALAY, ALEXANDER S., et al. Karhunen-Loève Estimation of the Power Spectrum Parameters from the Angular Distribution of Galaxies in Early Sloan Digital Sky Survey Data.

See BUDAVÁRI, TAMÁS, et al. Angular Clustering with Photometric Redshifts in the Sloan Digital Sky Survey: Bimodality in the Clustering Properties of Galaxies.

JOHNSTON, SIMON. Giant Pulses from PSR B0540−69 in the Large Magellanic Cloud. *Simon Johnston & Roger W. Romani.* 590, L95 (2003)

JOHNSTONE, DOUG. Halting Planet Migration by Photoevaporation from the Central Source. *Isamu Matsuyama, Doug Johnstone, & Norman Murray.* 585, L143 (2003)

The G11.11−0.12 Infrared-dark Cloud: Anomalous Dust and a Nonmagnetic Isothermal Model. *Doug Johnstone, Jason D. Fiege, R. O. Redman, P. A. Feldman, & Sean J. Carey.* 588, L37 (2003)

Indications for Grain Growth and Mass Decrease in Cold Dust Disks around Classical T Tauri Stars in the MBM 12 Young Association. *Michiel R. Hogerheijde, Doug Johnstone, Isamu Matsuyama, Ray Jayawardhana, & James Muzerolle.* 593, L101 (2003)

JOINER, DAVID A. Modeling the Transport of Polarized Radiation Due to Scattering in Spherical Dust Shells. *David A. Joiner & Chun Ming Leung.* 593, 402 (2003)

JOKIPII, J. R. Cosmic-Ray Spectra at Spherical Termination Shocks. *V. Florinski & J. R. Jokipii.* 591, 454 (2003)

Diffusive-Compression Acceleration and Turbulent Diffusion of Cosmic Rays in Quasi-periodic and Turbulent Flows. *G. M. Webb, C. M. Ko, G. P. Zank, & J. R. Jokipii.* 595, 195 (2003)

Perpendicular Transport of Solar Energetic Particles in Heliospheric Magnetic Fields. *Ming Zhang, J. R. Jokipii, & R. B. McKibben.* 595, 493 (2003)

JONES, C. *Chandra* Observations of the Galaxy Cluster A478: The Interaction of Hot Gas and Radio Plasma in the Core, and an Improved Determination of the Compton y-Parameter. *M. Sun, C. Jones, S. S. Murray, S. W. Allen, A. C. Fabian, & A. C. Edge.* 587, 619 (2003)

See VIKHLININ, A., et al. Cosmological Constraints from the Evolution of the Cluster Baryon Mass Function at $z \sim 0.5$.

XMM-Newton Observations of the Perseus Cluster. I. The Temperature and Surface Brightness Structure. *E. Churazov, W. Forman, C. Jones, & H. Boehringer.* 590, 225 (2003)

X-Ray Emission from the Hot Interstellar Medium and Southwest Radio Lobe of the Nearby Radio Galaxy Centaurus A. *R. P. Kraft, S. E. Vázquez, W. R. Forman, C. Jones, S. S. Murray, M. J. Hardcastle, D. M. Worrall, & E. Churazov.* 592, 129 (2003)

Radio and X-Ray Observations of the Jet in Centaurus A. *M. J. Hardcastle, D. M. Worrall, R. P. Kraft, W. R. Forman, C. Jones, & S. S. Murray.* 593, 169 (2003)

See MULLIS, C. R., et al. The 160 Square Degree *ROSAT* Survey: The Revised Catalog of 201 Clusters with Spectroscopic Redshifts.

Chandra Observations of the NGC 1550 Galaxy Group: Implication for the Temperature and Entropy Profiles of 1 keV Galaxy Groups. *M. Sun, W. Forman, A. Vikhlinin, A. Hornstrup, C. Jones, & S. S. Murray.* 598, 250 (2003)

JONES, G. H. Possible Distortion of the Interplanetary Magnetic Field by the Dust Trail of Comet 122P/de Vico. *G. H. Jones, A. Balogh, C. T. Russell, & M. K. Dougherty.* 597, L61 (2003)

JONES, HARRISON P. Comparison of Total Solar Irradiance with NASA/National Solar Observatory Spectromagnetograph Data in Solar Cycles 22 and 23. *Harrison P. Jones, Detrick D. Branston, Patricia B. Jones, & Miruna D. Popescu.* 589, 658 (2003)

JONES, HUGH R. A. Four New Planets Orbiting Metal-Enriched Stars. *C. G. Tinney, R. Paul Butler, Geoffrey W. Marcy, Hugh R. A. Jones, Alan J. Penny, Chris McCarthy, Brad D. Carter, & Jade Bond.* 587, 423 (2003)

A Planet in a Circular Orbit with a 6 Year Period. *Brad D. Carter, R. Paul Butler, C. G. Tinney, Hugh R. A. Jones, Geoffrey W. Marcy, Chris McCarthy, Debra A. Fischer, & Alan J. Penny.* 593, L43 (2003)

JONES, L. R. *Chandra* X-Ray Analysis of the Massive High-Redshift Galaxy Clusters Cl J1113.1−2615 and Cl J0152.7−1357. *B. J. Maughan, L. R. Jones, H. Ebeling, E. Perlman, P. Rosati, C. Frye, & C. R. Mullis.* 587, 589 (2003)

JONES, P. A. Supernova Remnant Candidates in the 30 Doradus Nebula. *J. S. Lazendic, J. R. Dickel, & P. A. Jones.* 596, 287 (2003)

JONES, P. B. Nature of Fault Planes in Solid Neutron Star Matter. *P. B. Jones.* 595, 342 (2003)

JONES, PATRICIA B. Comparison of Total Solar Irradiance with NASA/National Solar Observatory Spectromagnetograph Data in Solar Cycles 22 and 23. *Harrison P. Jones, Detrick D. Branston, Patricia B. Jones, & Miruna D. Popescu.* 589, 658 (2003)

JONES, STEVEN M. A Fluorescent Aerogel for Capture and Identification of Interplanetary and Interstellar Dust. *Gerardo Domíngnez, Andrew J. Westphal, Mark L. F. Phillips, & Steven M. Jones.* 592, 631 (2003)

JONES, T. J. The Identification of Infrared Synchrotron Radiation from Cassiopeia A. *T. J. Jones, L. Rudnick, T. DeLaney, & J. Bowden.* 587, 227 (2003)

JONES, T. W. The Effect of Cosmic-Ray Diffusion on the Parker Instability. *Dongsu Ryu, Jongsoo Kim, Seung Soo Hong, & T. W. Jones.* 589, 338 (2003)

Cosmological Shock Waves and Their Role in the Large-Scale Structure of the Universe. *Dongsu Ryu, Hyesung Kang, Eric Hallman, & T. W. Jones.* 593, 599 (2003)

Numerical Study of Compressible Magnetohydrodynamic Turbulence in Two Dimensions. *Hyesook Lee, Dongsu Ryu, Jongsoo Kim, T. W. Jones, & Dinshaw Balsara.* 594, 627 (2003)

JONES, W. C. See CRILL, B. P., et al. BOOMERANG: A Balloon-Borne Millimeter-Wave Telescope and Total Power Receiver for Mapping Anisotropy in the Cosmic Microwave Background.

See RUHL, J. E., et al. Improved Measurement of the Angular Power Spectrum of Temperature Anisotropy in the Cosmic Microwave Background from Two New Analyses of BOOMERANG Observations.

JONKER, PETER G. *Chandra* Observations of the Faintest Low-Mass X-Ray Binaries. *Colleen A. Wilson, Sandeep K. Patel, Chryssa Kouveliotou, Peter G. Jonker, Michiel van der Klis, Walter H. G. Lewin, Tomaso Belloni, & Mariano Méndez.* 596, 1220 (2003)

JORDÁN, ANDRÉS. *Hubble Space Telescope* Observations of Novae in M49. *Laura Ferrarese, Patrick Côté, & Andrés Jordán.* 599, 1302 (2003)

JORDAN, C. The Proper Motion, Age, and Initial Spin Period of PSR J0538+2817 in S147. *M. Kramer, A. G. Lyne, G. Hobbs, O. Löhmer, P. Carr, C. Jordan, & A. Wolszczan.* 593, L31 (2003)

JORDAN, M. See HOLDER, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.

See DE LA CALLE PÉREZ, I., et al. Search for High-Energy Gamma Rays from an X-Ray–Selected Blazar Sample.

JØRGENSEN, J. K. Disks around the Young Stars with TW Hydrae and HD 100546 Imaged at 3.4 Millimeters with the Australia Telescope Compact Array. *D. J. Wilner, T. L. Bourke, C. M. Wright, J. K. Jørgensen, E. F. van Dishoeck, & T. Wong.* 596, 597 (2003)

JORGENSEN, U. G. See FIELDS, DALE L., et al. High-Precision Limb-Darkening Measurement of a K3 Giant Using Microlensing.

JORSTAD, S. G. See BÖTTCHER, M., et al. Coordinated Multiwavelength Observations of BL Lacertae in 2000.

JOSÉ, JORDI. The Impact of the Chemical Stratification of White Dwarfs on the Classification of Classical Novae. *Jordi José, Margarita Hernanz, Enrique García-Berro, & Pilar Gil-Pons.* 597, L41 (2003)

JOSHI, K. J. Monte Carlo Simulations of Globular Cluster Evolution. III. Primordial Binary Interactions. *J. M. Fregeau, M. A. Gürkan, K. J. Joshi, & F. A. Rasio.* 593, 772 (2003)

JOSHI, S. See MUKADEM, ANJUM S., et al. Constraining the Evolution of ZZ Ceti.

JOY, M. See MASON, B. S., et al. The Anisotropy of the Microwave Background to $l = 3500$: Deep Field Observatons with the Cosmic Background Imager.

See PEARSON, T. J., et al. The Anisotropy of the Microwave Background to $l = 3500$: Mosaic Observations with the Cosmic Background Imager.

JOY, MARSHALL. See LAROQUE, SAMUEL J., et al. Sunyaev-Zeldovich Effect Imaging of MACS Galaxy Clusters at $z > 0.5$.

The Mass, Baryonic Fraction, and X-Ray Temperature of the Luminous, High-Redshift Cluster of Galaxies MS 0451.6−0305. *Megan Donahue, Jessica A. Gaskin, Sandeep K. Patel, Marshall Joy, Doug Clowe, & John P. Hughes.* 598, 190 (2003)

JOY, MARSHALL K. A Massive Warm Baryonic Halo in the Coma Cluster. *Massimiliano Bonamente, Marshall K. Joy, & Richard Lieu.* 585, 722 (2003)

JOYCE, MICHAEL. Bias and the Power Spectrum beyond the Turnover. *Ruth Durrer, Andrea Gabrielli, Michael Joyce, & Francesco Sylos Labini.* 585, L1 (2003)

JOYCE, RICHARD R. See SMITH, VERNE V., et al. High-Resolution Infrared Spectroscopy of the Brown Dwarf ϵ Indi Ba.

JUAREZ, Y. Early Star Formation Traced by the Highest Redshift Quasars. *R. Maiolino, Y. Juarez, R. Mujica, N. M. Nagar, & E. Oliva.* 596, L155 (2003)

JUDA, M. See MARKEVITCH, M., et al. *Chandra* Spectra of the Soft X-Ray Diffuse Background.

JUDGE, PHILIP G. An Estimate of the Sun's *ROSAT*-PSPC X-Ray Luminosities Using *SNOE*-SXP Measurements. *Philip G. Judge, Stanley C. Solomon, & Thomas R. Ayres.* 593, 534 (2003)

On the Origin of the Basal Emission from Stellar Atmospheres: Analysis of Solar C II Lines. *Philip G. Judge, Mats Carlsson, & Robert F. Stein.* 597, 1158 (2003)

JUETT, ADRIENNE M. X-Ray Spectroscopy of the Accreting Millisecond Pulsar XTE J0929−314 in Outburst. *Adrienne M. Juett, Duncan K. Galloway, & Deepto Chakrabarty.* 587, 754 (2003)

X-Ray Spectroscopy of the Low-Mass X-Ray Binaries 2S 0918−549 and 4U 1543−624: Evidence for Neon-Rich Degenerate Donors. *Adrienne M. Juett & Deepto Chakrabarty.* 599, 498 (2003)

JUNOR, W. Flaring X-Ray Emission from HST-1, a Knot in the M87 Jet. *D. E. Harris, J. A. Biretta, W. Junor, E. S. Perlman, W. B. Sparks, & A. S. Wilson.* 586, L41 (2003)

JUNQUEIRA, S. Morphological and Kinematic Properties of Disk Galaxies Perturbed by a Satellite. *R. Chan & S. Junqueira.* 586, 780 (2003)

JURA, M. The Low-Velocity Wind from the Circumstellar Matter around the B9 V Star σ Herculis. *C. H. Chen & M. Jura.* 582, 443 (2003)

A Flared, Orbiting, Dusty Disk around HD 233517. *M. Jura.* 582, 1032 (2003)

A Tidally Disrupted Asteroid around the White Dwarf G29-38. *M. Jura.* 584, L91 (2003)

The Mid-Infrared–emitting Dust around AB Aurigae. *C. H. Chen & M. Jura.* 591, 267 (2003)

JURCSIK, J. Detection of the Evolutionary Stages of Variables in M3. *J. Jurcsik, J. M. Benko, G. A. Bakos, B. Szeidl, & R. Szabó.* 597, L49 (2003)

JURGENSON, C. A. Mid-Infrared Imaging Polarimetry of NGC 7027. *C. A. Jurgenson, R. E. Stencel, D. S. Theil, D. I. Klebe, & T. Ueta.* 582, L35 (2003)

JUSZKIEWICZ, R. See FELDMAN, H., et al. An Estimate of Ω_m without Conventional Priors.

JUVELA, M. Photoelectric Heating and [C II] Cooling in Translucent Clouds: Results for Cloud Models Based on Simulations of Compressible Magnetohydrodynamic Turbulence. *M. Juvela, P. Padoan, & R. Jimenez.* 591, 258 (2003)

JUVELA, MIKA. The Spectral Correlation Function of Molecular Clouds: A Statistical Test for Theoretical Models. *Paolo Padoan, Alyssa A. Goodman, & Mika Juvela.* 588, 881 (2003)

KAARET, P. X-Ray Emission from the Jets of XTE J1550−564. *P. Kaaret, S. Corbel, J. A. Tomsick, R. Fender, J. M. Miller, J. A. Orosz, T. Tzioumis, & R. Wijnands.* 582, 945 (2003)

X-Ray Temporal Properties of XTE J1650−500 during Outburst Decay. *E. Kalemci, J. A. Tomsick, R. E. Rothschild, K. Pottschmidt, S. Corbel, R. Wijnands, J. M. Miller, & P. Kaaret.* 586, 419 (2003)

Classifying X-Ray Sources in External Galaxies from X-Ray Colors. *A. H. Prestwich, J. A. Irwin, R. E. Kilgard, M. I. Krauss, A. Zezas, F. Primini, P. Kaaret, & B. Boroson.* 595, 719 (2003)

Discovery of X-Ray Burst Oscillations from a Neutron Star X-Ray Transient in the Globular Cluster NGC 6440. *P. Kaaret, J. J. M. in 't Zand, J. Heise, & J. A. Tomsick.* 598, 481 (2003)

KAARET, PHILIP. X-Ray Jet Emission from the Black Hole X-Ray Binary XTE J1550−564 with *Chandra* in 2000. *John A. Tomsick, Stéphane Corbel, Rob Fender, Jon M. Miller, Jerome A. Orosz, Tasso Tzioumis, Rudy Wijnands, & Philip Kaaret.* 582, 933 (2003)

X-Ray Flares and Oscillations from the Black Hole Candidate X-Ray Transient XTE J1650−500 at Low Luminosity. *John A. Tomsick, Emrah Kalemci, Stephane Corbel, & Philip Kaaret.* 592, 1100 (2003)

See TOMSICK, JOHN A., et al. *Chandra* Detections of Two Quiescent Black Hole X-Ray Transients.

KAAS, A. A. See HJORTH, J., et al. Very High Column Density and Small Reddening toward GRB 020124 at $z = 3.20$.

KAASTRA, J. S. Discovery of a Binary Active Galaxy Nucleus in the Ultraluminous Infrared Galaxy NGC 6240 Using *CHANDRA*. *S. Komossa, V. Burwitz, G. Hasinger, P. Predehl, J. S. Kaastra, & Y. Ikebe.* 582, L15 (2003)

High Resolution X-Ray Spectroscopic Constraints on Cooling-Flow Models for Clusters of Galaxies. *J. R. Peterson, S. M. Kahn, F. B. S. Paerels, J. S. Kaastra, T. Tamura, J. A. M. Bleeker, C. Ferrigno, & J. G. Jernigan.* 590, 207 (2003)

See CRENSHAW, D. M., et al. Simultaneous Ultraviolet and X-Ray Spectroscopy of the Seyfert 1 Galaxy NGC 5548. I. Physical Conditions in the Ultraviolet Absorbers.

X-Ray–Extreme Ultraviolet Simultaneous Observations of NGC 5548: Fast Extreme Ultraviolet Dip without X-Ray Variation. *Y. Haba, H. Kunieda, K. Misaki, Y. Terashima, J. S. Kaastra, R. Mewe, A. C. Fabian, & K. Iwasawa.* 599, 949 (2003)

KAASTRA, JELLE. Contrasting the Ultraviolet and X-Ray O VI Column Density Inferred for the Outflow in NGC 5548. *Nahum Arav, Jelle Kaastra, Katrien Steenbrugge, Bert Brinkman, Rick Edelson, Kirk T. Korista, & Martijn de Kool.* 590, 174 (2003)

KAASTRA, JELLE S. Slow Temperature Equilibration behind the Shock Front of SN 1006. *Jacco Vink, J. Martin Laming, Ming Feng Gu, Andrew Rasmussen, & Jelle S. Kaastra.* 587, L31 (2003)

See SAKO, MASAO, et al. Can a Dusty Warm Absorber Model Reproduce the Soft X-Ray Spectra of MCG −6-30-15 and Markarian 766?

A Long Look at NGC 3783 with the *XMM-Newton* Reflection Grating Spectrometer. *Ehud Behar, Andrew P. Rasmussen, Alexander J. Blustin, Masao Sako, Steven M. Kahn, Jelle S. Kaastra, Graziella Branduardi-Raymont, & Katrien C. Steenbrugge.* 598, 232 (2003)

KABUKI, S. See ENOMOTO, R., et al. Search for TeV Gamma Rays from SN 1987A in 2001.

KABURAKI, OSAMU. Viscosity-driven Winds from Magnetized Accretion Disks. *Daizo Maruta & Osamu Kaburaki.* 593, 85 (2003)

KADLER, M. Jet Collimation in Action: Realignment on Kiloparsec Scales in 3C 279. *D. C. Homan, M. L. Lister, K. I. Kellermann, M. H. Cohen, E. Ros, J. A. Zensus, M. Kadler, & R. C. Vermeulen.* 589, L9 (2003)

KADOTA, K. See TORII, K., et al. The Earliest Optical Observations of GRB 30329.

KÄPPELER, F. See REIFARTH, R., et al. Stellar Neutron Capture on Promethium: Implications for the s-Process Neutron Density.

See SONNABEND, K., et al. The s-Process Branching at ^{185}W.

KÄPPELER, FRANZ. Isotopic Compositions of Strontium, Zirconium, Molybdenum, and Barium in Single Presolar SiC Grains and Asymptotic Giant Branch Stars. *Maria Lugaro, Andrew M. Davis, Roberto Gallino, Michael J. Pellin, Oscar Straniero, & Franz Käppeler.* 593, 486 (2003)

KAHLER, S. W. Solar Energetic Particle Production by Coronal Mass Ejection–driven Shocks in Solar Fast-Wind Regions. *S. W. Kahler & D. V. Reames.* 584, 1063 (2003)

Interactions of Dust Grains with Coronal Mass Ejections and Solar Cycle Variations of the F-Coronal Brightness. *B. R. Ragot & S. W. Kahler.* 594, 1049 (2003)

KAHN, S. M. Two Types of X-Ray Spectra in Cataclysmic Variables. *Koji Mukai, A. Kinkhabwala, J. R. Peterson, S. M. Kahn, & F. Paerels.* 586, L77 (2003)

High Resolution X-Ray Spectroscopic Constraints on Cooling-Flow Models for Clusters of Galaxies. *J. R. Peterson, S. M. Kahn, F. B. S. Paerels, J. S.*

Kaastra, T. Tamura, J. A. M. Bleeker, C. Ferrigno, & J. G. Jernigan. 590, 207 (2003)

Emission-Line Spectra of Ar IX–Ar XVI in the Soft X-Ray Region 20–50 Å. *J. K. Lepson, P. Beiersdorfer, E. Behar, & S. M. Kahn.* 590, 604 (2003)

See SAVIN, D. W., et al. Dielectronic Recombination of the Fe XXI and Fe XXII via $N = 2 \rightarrow N' = 2$ Core Excitations.

KAHN, STEVE M. See WATANABE, SHIN, et al. Detection of a Fully Resolved Compton Shoulder of the Iron Kα Line in the *Chandra* X-Ray Spectrum of GX 301-2.

KAHN, STEVEN M. Resolving the Effects of Resonant X-Ray Line Scattering in Centaurus X-3 with *Chandra*. *Patrick S. Wojdowski, Duane A. Liedahl, Masao Sako, Steven M. Kahn, & Frederik Paerels.* 582, 959 (2003)

X-Ray Spectroscopy of η Carinae with *XMM-Newton*. *Maurice A. Leutenegger, Steven M. Kahn, & Gavin Ramsay.* 585, 1015 (2003)

See SAKO, MASAO, et al. Can a Dusty Warm Absorber Model Reproduce the Soft X-Ray Spectra of MCG −6-30-15 and Markarian 766?

A Long Look at NGC 3783 with the *XMM-Newton* Reflection Grating Spectrometer. *Ehud Behar, Andrew P. Rasmussen, Alexander J. Blustin, Masao Sako, Steven M. Kahn, Jelle S. Kaastra, Graziella Branduardi-Raymont, & Katrien C. Steenbrugge.* 598, 232 (2003)

KAISER, M. L. Constraints on Coronal Mass Ejection Dynamics from Simultaneous Radio and White-Light Observations. *M. J. Reiner, A. Vourlidas, O. C. St. Cyr, J. T. Burkepile, R. A. Howard, M. L. Kaiser, N. P. Prestage, & J.-L. Bougeret.* 590, 533 (2003)

KAISER, MARY ELIZABETH. See GABEL, JACK R., et al. The Ionized Gas and Nuclear Environment in NGC 3783. II. Averaged *Hubble Space Telescope*/STIS and *Far Ultraviolet Spectroscopic Explorer* Spectra.

See GABEL, JACK R., et al. The Ionized Gas and Nuclear Environment in NGC 3783. III. Detection of a Decreasing Radial Velocity in an Intrinsic Ultraviolet Absorber.

KAISER, NICK. Cosmological Perturbation Theory Using the Schrödinger Equation. *István Szapudi & Nick Kaiser.* 583, L1 (2003)

Weak Gravitational Lensing by a Sample of X-Ray–luminous Clusters of Galaxies. III. Serendipitous Weak Lensing Detections of Dark and Luminous Mass Concentrations. *Haakon Dahle, Kristian Pedersen, Per B. Lilje, Steve J. Maddox, & Nick Kaiser.* 591, 662 (2003)

See MADGWICK, DARREN S., et al. The DEEP2 Galaxy Redshift Survey: Spectral Classification of Galaxies at $z \sim 1$.

KAISLER, DENISE. Deep Keck Adaptive Optics Searches for Extrasolar Planets in the Dust of ϵ Eridani and Vega. *Bruce A. Macintosh, E. E. Becklin, Denise Kaisler, Quinn Konopacky, & B. Zuckerman.* 594, 538 (2003)

KAITO, CHIHIRO. Are TiC Grains a Carrier of the 21 Micron Emission Band Observed around Post–Asymptotic Giant Branch Objects? *Takeshi Chigai, Tetsuo Yamamoto, Chihiro Kaito, & Yuki Kimura.* 587, 771 (2003)

KAJINO, F. See ENOMOTO, R., et al. Search for TeV Gamma Rays from SN 1987A in 2001.

See AMENOMORI, M., et al. Multi-TeV Gamma-Ray Flares from Markarian 421 in 2000 and 2001 Observed with the Tibet Air Shower Array.

KAJINO, TOSHITAKA. See AOKI, WAKO, et al. Europium Isotope Ratios in *s*-Process Element-enhanced Metal-poor Stars: A New Probe of the ^{151}Sm Branching.

KAKAZU, YUKO. See TANIGUCHI, YOSHIAKI, et al. The Discovery of a Very Narrow Line Star-forming Object at a Redshift of 5.66.

KAKIMOTO, F. See WATANABE, K., et al. Solar Neutron Event in Association with a Large Solar Flare on 2000 November 24.

KALBERLA, P. M. W. Dark Matter in the Milky Way. I. The Isothermal Disk Approximation. *P. M. W. Kalberla.* 588, 805 (2003)

KALEMCI, E. X-Ray Temporal Properties of XTE J1650−500 during Outburst Decay. *E. Kalemci, J. A. Tomsick, R. E. Rothschild, K. Pottschmidt, S. Corbel, R. Wijnands, J. M. Miller, & P. Kaaret.* 586, 419 (2003)

KALEMCI, EMRAH. X-Ray Flares and Oscillations from the Black Hole Candidate X-Ray Transient XTE J1650−500 at Low Luminosity. *John A. Tomsick, Emrah Kalemci, Stephane Corbel, & Philip Kaaret.* 592, 1100 (2003)

KALKOFEN, W. Kink and Longitudinal Oscillations in the Magnetic Network on the Sun: Nonlinear Effects and Mode Transformation. *S. S. Hasan, W. Kalkofen, A. A. van Ballegooijen, & P. Ulmschneider.* 585, 1138 (2003)

KALLENBACH, R. Acceleration and Enrichment of ^{3}He in Impulsive Solar Flares by Electron Firehose Waves. *G. Paesold, R. Kallenbach, & A. O. Benz.* 582, 495 (2003)

KALLMAN, T. R. *Chandra* and *XMM* Observations of the Accretion Disk Corona Source 0921−63. *T. R. Kallman, L. Angelini, B. Boroson, & J. Cottam.* 583, 861 (2003)

Iron K Lines from Gamma-Ray Bursts. *T. R. Kallman, P. Mészáros, & M. J. Rees.* 593, 946 (2003)

KALLMAN, TIMOTHY. *Chandra* Grating Spectroscopy of the X-Ray Binary 4U 1700−37 in a Flaring State. *Bram Boroson, Saeqa Dil Vrtilek, Timothy Kallman, & Michael Corcoran.* 592, 516 (2003)

KALLMAN, TIMOTHY R. Hydrodynamic Models of Line-driven Accretion Disk Winds. III. Local Ionization Equilibrium. *Nicolas Antonio Pereyra & Timothy R. Kallman.* 582, 984 (2003)

Fe XXV and Fe XXVI Diagnostics of the Black Hole and Accretion Disk in Active Galaxies: *Chandra* Time-resolved Grating Spectroscopy of NGC 7314. *Tahir Yaqoob, Ian M. George, Timothy R. Kallman, Urmila Padmanabhan, Kimberly A. Weaver, & T. Jane Turner.* 596, 85 (2003)

KALOGERA, V. The Probability Distribution of Binary Pulsar Coalescence Rates. I. Double Neutron Star Systems in the Galactic Field. *C. Kim, V. Kalogera, & D. R. Lorimer.* 584, 985 (2003)

The Role of Helium Stars in the Formation of Double Neutron Stars. *N. Ivanova, K. Belczynski, V. Kalogera, F. A. Rasio, & R. E. Taam.* 592, 475 (2003)

KALOGERA, VASSILIKI. Helium-Core White Dwarfs in Globular Clusters. *Brad M. S. Hansen, Vassiliki Kalogera, & Frederic A. Rasio.* 586, 1364 (2003)

KALUZNY, J. See BERSIER, D., et al. The Strongly Polarized Afterglow of GRB 020405.

See MATHESON, T., et al. Photometry and Spectroscopy of GRB 03029 and Its Associated Supernova 2003dh: The First Two Months.

KALYTIS, R. See MUKADEM, ANJUM S., et al. Constraining the Evolution of ZZ Ceti.

KAMATA, YUKIKO. See GOTO, MIWA, et al. Spatially Resolved 3 Micron Spectroscopy of IRAS 22272+5435: Formation and Evolution of Aliphatic Hydrocarbon Dust in Proto–Planetary Nebulae.

See PYO, TAE-SOO, et al. Adaptive Optics Spectroscopy of the [Fe II] Outflow from DG Tauri.

See GOTO, MIWA, et al. Carbon Isotope Ratio in $^{12}CO/^{13}CO$ toward Local Molecular Clouds with Near-Infrared High-Resolution Spectroscopy of Vibrational Transition Bands.

KAMAZAKI, TAKESHI. Molecular Outflow Search in the ρ Ophiuchi A and B2 Regions. *Takeshi Kamazaki, Masao Saito, Naomi Hirano, Tomofuni Umemoto, & Ryohei Kawabe.* 584, 357 (2003)

$H^{13}CO^+$ and CH_3OH Line Observations of Prestellar Dense Cores in the TMC-1C Region. II. Internal Structure. *Shigehisa Takakuwa, Takeshi Kamazaki, Masao Saito, & Naomi Hirano.* 584, 818 (2003)

KAMBE, EIJI. See SATO, BUN'EI, et al. A Planetary Companion to the G-Type Giant Star HD 104985.

KAMEGAI, KAZUHISA. Distribution of the C I Emission in the ρ Ophiuchi Dark Cloud. *Kazuhisa Kamegai, Masafumi Ikeda, Hiroyuki Maezawa, Tetsuya Ito, Mitsuhiro Iwata, Takeshi Sakai, Tomoharu Oka, Satoshi Yamamoto, Yutaro Sekimoto, Ken'ichi Tatematsu, Takashi Noguchi, Shuji Saito, Hideo Fujiwara, Hiroyuki Ozeki, Junji Inatani, & Masatoshi Ohishi.* 589, 378 (2003)

KAMEYA, OSAMU. Linear Polarization Observations of Water Masers in W3 IRS 5. *Hiroshi Imai, Shinji Horiuchi, Shuji Deguchi, & Osamu Kameya.* 595, 285 (2003)

KAMIKAWA, T. Effects of a Decaying Cosmological Term on the Formation of Molecules and First Objects. *M. Hashimoto, T. Kamikawa, & K. Arai.* 598, 13 (2003)

KANAAN, A. See MUKADEM, ANJUM S., et al. Constraining the Evolution of ZZ Ceti.

KANBUR, SHASHI M. Reconstructing Cepheid Light Curve with Fourier Techniques. I. The Fourier Expansion and Interrelations. *Chow-Choong Ngeow, Shashi M. Kanbur, Sergei Nikolaev, Nial R. Tanvir, & Martin A. Hendry.* 586, 959 (2003)

The Cepheid Distance to NGC 1637: A Direct Test of the Expanding Photosphere Method Distance to SN 1999em. *Douglas C. Leonard, Shashi M. Kanbur, Choong C. Ngeow, & Nial R. Tanvir.* 594, 247 (2003)

KANDRUP, HENRY E. Smooth Potential Chaos and *N*-Body Simulations. *Henry E. Kandrup & Ioannis V. Sideris.* 585, 244 (2003)

Supermassive Black Hole Binaries as Galactic Blenders. *Henry E. Kandrup, Ioannis V. Sideris, Balša Terzić, & Courtlandt L. Bohn.* 597, 111 (2003)

KANE, S. See FIELDS, DALE L., et al. High-Precision Limb-Darkening Measurement of a K3 Giant Using Microlensing.

KANE, STEPHEN R. Studying the Galactic Bulge through the Spectroscopy of Microlensed Sources. II. Observations. *Stephen R. Kane & Kailash C. Sahu.* 582, 743 (2003)

KANG, HYESUNG. Two-dimensional Axisymmetric Collapse of Thermally Unstable Primordial Clouds. *Chang Hyun Baek, Hyesung Kang, & Dongsu Ryu.* 584, 675 (2003)

Cosmological Shock Waves and Their Role in the Large-Scale Structure of the Universe. *Dongsu Ryu, Hyesung Kang, Eric Hallman, & T. W. Jones.* 593, 599 (2003)

KANG, YOUNG WOON. Probing the Spatial Distribution of Extrasolar Planets with Gravitational Microlensing. *Cheongho Han & Young Woon Kang.* 596, 1320 (2003)

Raman-scattered He II λ6545 Line in the Symbiotic Star V1016 Cygni. *Hee-Won Lee, Young-Jong Sohn, Young Woon Kang, & Ho-Il Kim.* 598, 553 (2003)

KANKELBORG, CHARLES C. The Relationship Between X-Ray Radiance and Magnetic Flux. *Alexei A. Pevtsov, George H. Fisher, Loren W. Acton, Dana W. Longcope, Christopher M. Johns-Krull, Charles C. Kankelborg, & Thomas R. Metcalf.* 598, 1387 (2003)

KANNAPPAN, S. See MATHESON, T., et al. Photometry and Spectroscopy of GRB 03029 and Its Associated Supernova 2003dh: The First Two Months.

KANO, RYOUHEI. See NAGATA, SHIN'ICHI, et al. Spatial and Temporal Properties of Hot and Cool Coronal Loops.

KAN-YA, Y. See SUMI, T., et al. Microlensing Optical Depth toward the Galactic Bulge from Microlensing Observations during 2000 with Difference Image Analysis.

KANZAWA, TOMIO. See GOTO, MIWA, et al. Spatially Resolved 3 Micron Spectroscopy of IRAS 22272+5435: Formation and Evolution of Aliphatic Hydrocarbon Dust in Proto–Planetary Nebulae.

See GOTO, MIWA, et al. Carbon Isotope Ratio in $^{12}CO/^{13}CO$ toward Local Molecular Clouds with Near-Infrared High-Resolution Spectroscopy of Vibrational Transition Bands.

KAPER, L. See HJORTH, J., et al. Very High Column Density and Small Reddening toward GRB 020124 at $z = 3.20$.

See GREINER, J., et al. GRB 011121: A Collimated Outflow into Wind-blown Surroundings.

KAPLAN, D. L. The Quiescent Counterpart of the Soft Gamma-Ray Repeater SGR 0526−66. *S. R. Kulkarni, D. L. Kaplan, H. L. Marshall, D. A. Frail, T. Murakami, & D. Yonetoku.* 585, 948 (2003)

The Optical Counterpart of the Isolated Neutron Star RX J1605.3+3249. *D. L. Kaplan, S. R. Kulkarni, & M. H. van Kerkwijk.* 588, L33 (2003)

The Nearby Neutron Star RX J0720.4−3125 from Radio to X-Rays. *D. L. Kaplan, M. H. van Kerkwijk, H. L. Marshall, B. A. Jacoby, S. R. Kulkarni, & D. A. Frail.* 590, 1008 (2003)

KAPLAN, J. See KERINS, E., et al. Theory of Pixel Lensing toward M31. II. The Velocity Anisotropy and Flattening of the MACHO Distribution.

KAPLINGHAT, MANOJ. Probing the Reionization History of the Universe using the Cosmic Microwave Background Polarization. *Manoj Kaplinghat, Mike Chu, Zoltan Haiman, Gilbert P. Holder, Lloyd Knox, & Constantinos Skordis.* 583, 24 (2003)

The Reionization History at High Redshifts. II. Estimating the Optical Depth to Thomson Scattering from Cosmic Microwave Background Polarization. *Gilbert P. Holder, Zoltán Haiman, Manoj Kaplinghat, & Lloyd Knox.* 595, 13 (2003)

Normal Parameters for an Analytic Description of the Cosmic Microwave Background Cosmological Parameter Likelihood. *Mike Chu, Manoj Kaplinghat, & Lloyd Knox.* 596, 725 (2003)

KARGALTSEV, O. The Variable Jet of the Vela Pulsar. *G. G. Pavlov, M. A. Teter, O. Kargaltsev, & D. Sanwal.* 591, 1157 (2003)

Search for the Optical Counterpart of the Vela Pulsar X-Ray Nebula. *R. P. Mignani, A. De Luca, O. Kargaltsev, G. G. Pavlov, S. Zaggia, P. A. Caraveo, & W. Becker.* 594, 419 (2003)

KARINO, SHIGEYUKI. Linear Stability Analysis of Differentially Rotating Polytropes: New Results for the $M = 2$ F-Mode Dynamical Instability. *Shigeyuki Karino & Yoshiharu Eriguchi.* 592, 1119 (2003)

KARLE, A. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

KARLICKY, M. A Model of Zebra Emission in Solar Type IV Radio Bursts. *J. LaBelle, R. A. Treumann, P. H. Yoon, & M. Karlicky.* 593, 1195 (2003)

KAROVSKA, MARGARITA. Theoretical Limb Darkening for Classical Cepheids. II. Corrections for the Geometric Baade-Wesselink Method. *Massimo Marengo, Margarita Karovska, Dimitar D. Sasselov, Costas Papaliolios, John T. Armstrong, & Tyler E. Nordgren.* 589, 968 (2003)

Spatially Resolved Circumnuclear Dust in Centaurus A. *Margarita Karovska, Massimo Marengo, Martin Elvis, Giovanni G. Fazio, Joseph L. Hora, Philip M. Hinz, William F. Hoffmann, Michael Meyer, & Eric Mamajek.* 598, L91 (2003)

KARPEN, J. T. A Transient Heating Model for Coronal Structure and Dynamics. *D. Spadaro, A. F. Lanza, A. C. Lanzafame, J. T. Karpen, S. K. Antiochos, J. A. Klimchuk, & P. J. MacNeice.* 582, 486 (2003)

Constraints on Active Region Coronal Heating. *S. K. Antiochos, J. T. Karpen, E. E. DeLuca, L. Golub, & P. Hamilton.* 590, 547 (2003)

Constraints on the Magnetic Field Geometry in Prominences. *J. T. Karpen, S. K. Antiochos, J. A. Klimchuk, & P. J. MacNeice.* 593, 1187 (2003)

KARR, J. L. Three Lynds Bright Nebulae. *J. L. Karr & P. G. Martin.* 595, 880 (2003)

Triggered Star Formation in the W5 H II Region. *J. L. Karr & P. G. Martin.* 595, 900 (2003)

KARTAVYKH, YU. YU. Ionization Fractions of Slow Ions in a Plasma with Kappa Distributions for the Electron Velocity. *S. Wannawichian, D. Ruffolo, & Yu. Yu. Kartavykh.* 146, 443 (2003)

KARTTUNEN, H. See BÖTTCHER, M., et al. Coordinated Multiwavelength Observations of BL Lacertae in 2000.

KASAHARA, K. See AMENOMORI, M., et al. Multi-TeV Gamma-Ray Flares from Markarian 421 in 2000 and 2001 Observed with the Tibet Air Shower Array.

KASDIN, N. JEREMY. Extrasolar Planet Finding via Optimal Apodized-Pupil and Shaped-Pupil Coronagraphs. *N. Jeremy Kasdin, Robert J. Vanderbei, David N. Spergel, & Michael G. Littman.* 582, 1147 (2003)

Spiderweb Masks for High-Contrast Imaging. *Robert J. Vanderbei, David N. Spergel, & N. Jeremy Kasdin.* 590, 593 (2003)

Circularly Symmetric Apodization via Star-Shaped Masks. *Robert J. Vanderbei, David N. Spergel, & N. Jeremy Kasdin.* 599, 686 (2003)

KASEN, D. See WANG, LIFAN, et al. Spectropolarimetry of SN 2001el in NGC 1448: Asphericity of a Normal Type Ia Supernova.

KASEN, DANIEL. Analysis of the Flux and Polarization Spectra of the Type Ia Supernova SN 2001el: Exploring the Geometry of the High-Velocity Ejecta. *Daniel Kasen, Peter Nugent, Lifan Wang, D. A. Howell, J. Craig Wheeler, Peter Höflich, Dietrich Baade, E. Baron, & P. H. Hauschildt.* 593, 788 (2003)

KASHIKAWA, N. See SHIMASAKU, K., et al. Subaru Deep Survey. IV. Discovery of a Large-Scale Structure at Redshift $\simeq 5$.

See MOBASHER, BAHRAM, et al. A Photometric and Spectroscopic Study of Dwarf and Giant Galaxies in the Coma Cluster. IV. The Luminosity Function.

See KAWABATA, K. S., et al. On the Spectrum and Spectropolarimetry of Type Ic Hypernova SN 2003dh/GRB 030329.

KASHIKAWA, NABUNARI. See IYE, MASANORI, et al. ERO R1 in the Field of Cl 0939+4713: Evidence for an S0-Like Galaxy at $z \sim 1.5$.

KASHLINSKY, A. Analysis of the Diffuse Near-Infrared Emission from Two-Micron All-Sky Survey Deep Integration Data: Foregrounds versus the Cosmic Infrared Background. *S. Odenwald, A. Kashlinsky, J. C. Mather, M. F. Skrutskie, & R. M. Cutri.* 583, 535 (2003)

KASHYAP, VINAY L. Are Coronae of Magnetically Active Stars Heated by Flares? II. Extreme Ultraviolet and X-Ray Flare Statistics and the Differential Emission Measure Distribution. *Manuel Güdel, Marc Audard, Vinay L. Kashyap, Jeremy J. Drake, & Edward F. Guinan.* 582, 423 (2003)

KASM, CHRISTINA. A V-Band Survey for Variable Galactic Nuclei in the Hubble Deep Field. *Vicki L. Sarajedini, Ronald L. Gilliland, & Christina Kasm.* 599, 173 (2003)

KASPI, S. See MARKOWITZ, A., et al. X-Ray Fluctuation Power Spectral Densities of Seyfert 1 Galaxies.

KASPI, SHAI. See GABEL, JACK R., et al. The Ionized Gas and Nuclear Environment in NGC 3783. II. Averaged *Hubble Space Telescope*/STIS and *Far Ultraviolet Spectroscopic Explorer* Spectra.

See GABEL, JACK R., et al. The Ionized Gas and Nuclear Environment in NGC 3783. III. Detection of a Decreasing Radial Velocity in an Intrinsic Ultraviolet Absorber.

See NETZER, HAGAI, et al. The Ionized Gas and Nuclear Environment in NGC 3783. IV. Variability and Modeling of the 900 Kilosecond *Chandra* Spectrum.

KASPI, V. M. *XMM-Newton* Observations of PSR B1823−13: An Asymmetric Synchrotron Nebula around a Vela-like Pulsar. *B. M. Gaensler, N. S. Schulz, V. M. Kaspi, M. J. Pivovaroff, & W. E. Becker.* 588, 441 (2003)

A Major Soft Gamma Repeater–like Outburst and Rotation Glitch in the No-longer-so-anomalous X-Ray Pulsar 1E 2259+586. *V. M. Kaspi, F. P. Gavriil, P. M. Woods, J. B. Jensen, M. S. E. Roberts, & D. Chakrabarty.* 588, L93 (2003)

See MCLAUGHLIN, M. A., et al. PSR J1847−0130: A Radio Pulsar with Magnetar Spin Characteristics.

A Second Glitch from the "Anomalous" X-Ray Pulsar 1RXS J170849.0−4000910. *V. M. Kaspi & F. P. Gavriil.* 596, L71 (2003)

KASPI, VICTORIA M. The Pulsar Wind Nebula in G11.2−0.3. *Mallory S. E. Roberts, Cindy R. Tam, Victoria M. Kaspi, Maxim Lyutikov, Gautam Vasisht, Michael Pivovaroff, Eric V. Gotthelf, & Nobuyuki Kawai.* 588, 992 (2003)

See POOLEY, DAVID, et al. Dynamical Formation of Close Binary Systems in Globular Clusters.

KASSIM, N. E. See COHEN, A. S., et al. The Low-Frequency Radio Counterpart of the *XMM* Large-Scale Structure Survey.

KASSINOS, STAVROS. Thermal Conduction in Magnetized Turbulent Gas. *Jungyeon Cho, A. Lazarian, Albert Honein, Bernard Knaepen, Stavros Kassinos, & Parviz Moin.* 589, L77 (2003)

KASSIS, MARC. See KRAEMER, KATHLEEN E., et al. Five Star-forming Cores in the Galactic Ring Survey: A Mid-Infrared Study.

KASTNER, J. H. *Chandra* Observations of Variable Embedded X-Ray Sources in Orion. I. Resolving the Orion Trapezium: Erratum (ApJ, 549, 441 [2001]). *N. S. Schulz, C. Canizares, D. Huenemoerder, J. H. Kastner, S. C. Taylor, & E. J. Bergstrom.* 586, 1441 (2003) (Orig. paper in 549, 441 (2001))

KASTNER, JOEL H. On the Luminosities and Temperatures of Extended X-Ray Emission from Planetary Nebulae. *Noam Soker & Joel H. Kastner.* 583, 368 (2003)

ROSAT X-Ray Spectral Properties of Nearby Young Associations: TW Hydrae, Tucana-Horologium, and the β Pictoris Moving Group. *Joel H. Kastner, Lara Crigger, Margaret Rich, & David A. Weintraub.* 585, 878 (2003)

Detections of Rovibrational H_2 Emission from the Disks of T Tauri Stars. *Jeffrey S. Bary, David A. Weintraub, & Joel H. Kastner.* 586, 1136 (2003)

Abundance Anomalies in the X-Ray Spectra of Planetary Nebulae NGC 7027 and BD +30°3639. *Holly L. Maness, Saeqa D. Vrtilek, Joel H. Kastner, & Noam Soker.* 589, 439 (2003)

Refining *Chandra*/ACIS Subpixel Event Repositioning Using a Backside-illuminated CCD Model. *Jingqiang Li, Joel H. Kastner, Gregory Y. Prigozhin, & Norbert S. Schulz.* 590, 586 (2003)

A Compact X-Ray Source and Possible X-Ray Jets within the Planetary Nebula Menzel 3. *Joel H. Kastner, Bruce Balick, Eric G. Blackman, Adam Frank, Noam Soker, Saeqa D. Vrtilek, & Jingqiang Li.* 591, L37 (2003)

Magnetic Flares on Asymptotic Giant Branch Stars. *Noam Soker & Joel H. Kastner.* 592, 498 (2003)

X-Ray Emission from the Pre–Planetary Nebula Henize 3-1475. *Raghvendra Sahai, Joel H. Kastner, Adam Frank, Mark Morris, & Eric G. Blackman.* 599, L87 (2003)

KATAGIRI, H. See ENOMOTO, R., et al. Search for TeV Gamma Rays from SN 1987A in 2001.

KATAOKA, J. Earliest Detection of the Optical Afterglow of GRB 030329 and Its Variability. *R. Sato, N. Kawai, M. Suzuki, Y. Yatsu, J. Kataoka, R. Takagi, K. Yanagisawa, & H. Yamaoka.* 599, L9 (2003)

KATAOKA, JUN. Implications of Variability Patterns Observed in TeV Blazars on the Structure of the Inner Jet. *Chiharu Tanihata, Tadayuki Takahashi, Jun Kataoka, & Greg M. Madejski.* 584, 153 (2003)

KATAYAMA, HARUYOSHI. Properties of the Brightest Cluster Galaxy and Its Host Cluster. *Haruyoshi Katayama, Kiyoshi Hayashida, Fumio Takahara, & Yutaka Fujita.* 585, 687 (2003)

KATAYOSE, Y. See AMENOMORI, M., et al. Multi-TeV Gamma-Ray Flares from Markarian 421 in 2000 and 2001 Observed with the Tibet Air Shower Array.

KATAZA, HIROKAZU. K3-50A: An Ultracompact H II Region Ionized by a Massive Stellar Cluster. *Yoshiko K. Okamoto, Hirokazu Kataza, Takuya Yamashita, Takashi Miyata, Shigeyuki Sako, Shinya Takubo, Mitsuhiko Honda, & Takashi Onaka.* 584, 368 (2003)

Detection of Crystalline Silicates around the T Tauri Star Hen 3-600A. *Mitsuhiko Honda, Hirokazu Kataza, Yoshiko K. Okamoto, Takashi Miyata, Takuya Yamashita, Shigeyuki Sako, Shinya Takubo, & Takashi Onaka.* 585, L59 (2003)

KATHIRAVAN, C. Metric Radio Observations of the Evolution of a "Halo" Coronal Mass Ejection Close to the Sun. *R. Ramesh, C. Kathiravan, & Ch. V. Sastry.* 591, L163 (2003)

KATO, DAISUKE. See JIANG, ZHIBO, et al. A Near-Infrared Study of the Star-Forming Region S269.

KATO, MARIKO. Revised Analysis of the Supersoft X-Ray Phase, Helium Enrichment, and Turnoff Time in the 2000 Outburst of the Recurrent Nova CI Aquilae. *Izumi Hachisu, Mariko Kato, & Bradley E. Schaefer.* 584, 1008 (2003)

High-Velocity Jets in Recurrent Nova Outbursts. *Mariko Kato & Izumi Hachisu.* 587, L39 (2003)

A New Clue to the Transition Mechanism between Optical High and Low States of the Supersoft X-Ray Source RX J0513.9−6951, Implied from the Recurrent Nova CI Aquilae 2000 Outburst Model. *Izumi Hachisu & Mariko Kato.* 588, 1003 (2003)

RX J0513.9−6951: The First Example of Accretion Wind Evolution, a Key Evolutionary Process to Type Ia Supernovae. *Izumi Hachisu & Mariko Kato.* 590, 445 (2003)

A Limit Cycle Model for Long-Term Optical Variations of V Sagittae: The Second Example of Accretion Wind Evolution. *Izumi Hachisu & Mariko Kato.* 598, 527 (2003)

V445 Puppis: Helium Nova on a Massive White Dwarf. *Mariko Kato & Izumi Hachisu.* 598, L107 (2003)

KATO, T. See BÖTTCHER, M., et al. Coordinated Multiwavelength Observations of BL Lacertae in 2000.

See HJORTH, J., et al. Very High Column Density and Small Reddening toward GRB 020124 at $z = 3.20$.

See TORII, K., et al. The Earliest Optical Observations of GRB 30329.

KATO, TOMOHIRO. The Electron Spectrum in 3C 279 and the Observed Emission Spectrum. *Masaaki Kusunose, Fumio Takahara, & Tomohiro Kato.* 592, L5 (2003)

KATZ, NEAL. A First Estimate of the Baryonic Mass Function of Galaxies. *Eric F. Bell, Daniel H. McIntosh, Neal Katz, & Martin D. Weinberg.* 585, L117 (2003)

The Influence of Ω_b on High-Redshit Structure. *Jeffrey P. Gardner, Neal Katz, Lars Hernquist, & David H. Weinberg.* 587, 1 (2003)

On the Relationship between Cooling Flows and Bubbles. *Ian G. McCarthy, Arif Babul, Neal Katz, & Michael L. Balogh.* 587, L75 (2003)

See BERLIND, ANDREAS A., et al. The Halo Occupation Distribution and the Physics of Galaxy Formation.

X-Ray Absorption by the Low-Redshift Intergalactic Medium: A Numerical Study of the Λ Cold Dark Matter Model. *Xuelei Chen, David H. Weinberg, Neal Katz, & Romeel Davé.* 594, 42 (2003)

Lyman Break Galaxies and the Lyα Forest. *Juna A. Kollmeier, David H. Weinberg, Romeel Davé, & Neal Katz.* 594, 75 (2003)

The Clustering Dipole of the Local Universe from the Two Micron All Sky Survey. *Ariyeh H. Maller, Daniel H. McIntosh, Neal Katz, & Martin D. Weinberg.* 598, L1 (2003)

The Optical and Near-Infrared Properties of Galaxies. I. Luminosity and Stellar Mass Functions. *Eric F. Bell, Daniel H. McIntosh, Neal Katz, & Martin D. Weinberg.* 149, 289 (2003)

KAUFMAN, MICHAEL J. A Survey of 557 GHz Water Vapor Emission in the NGC 1333 Molecular Cloud. *Edwin A. Bergin, Michael J. Kaufman, Gary J. Melnick, Ronald L. Snell, & John E. Howe.* 582, 830 (2003)

KAUFMAN BERNADÓ, MARINA. See BUTT, YOUSAF M., et al. *Chandra*/Very Large Array Follow-up of TeV J2032+4131, the Only Unidentified TeV Gamma-Ray Source.

KAUFMANN, PIERRE. Properties of Fast Submillimeter Time Structures during a Large Solar Flare. *Jean-Pierre Raulin, Pierre Kaufmann, Carlos G. Giménez de Castro, Alessandra A. Pacini, Vladimir S. Makhmutov, Hugo Levato, & Marta Rovira.* 592, 580 (2003)

KAUL, C. L. A Continuous Injection Plasma Model for the X-Ray/Radio Knots in Kiloparsec-Scale Jets of Active Galactic Nuclei. *S. Sahayanathan, R. Misra, A. K. Kembhavi, & C. L. Kaul.* 588, L77 (2003)

The Effect of Nonthermal Protons on the High-Energy Spectra of Black Hole Binaries. *S. Bhattacharyya, N. Bhatt, R. Misra, & C. L. Kaul.* 595, 317 (2003)

KAVARS, D. W. A Neutral Hydrogen Self-Absorption Cloud in the Southern Galactic Plane Survey. *D. W. Kavars, J. M. Dickey, N. M. McClure-Griffiths, B. M. Gaensler, & A. J. Green.* 598, 1048 (2003)

KAVELAARS, J. J. The Short Rotation Period of Nereid. *Tommy Grav, Matthew J. Holman, & J. J. Kavelaars.* 591, L71 (2003)

KAWABATA, K. See SHIMASAKU, K., et al. Subaru Deep Survey. IV. Discovery of a Large-Scale Structure at Redshift $\simeq$5.

KAWABATA, K. S. On the Spectrum and Spectropolarimetry of Type Ic Hypernova SN 2003dh/GRB 030329. *K. S. Kawabata, J. Deng, L. Wang, P. Mazzali, K. Nomoto, K. Maeda, N. Tominaga, H. Umeda, M. Iye, G. Kosugi, Y. Ohyama, T. Sasaki, P. Höflich, J. C. Wheeler, D. J. Jeffery, K. Aoki, N. Kashikawa, T. Takata, N. Kawai, T. Sakamoto, Y. Urata, A. Yoshida, T. Tamagawa, K. Torii, W. Aoki, N. Kobayashi, Y. Komiyama, Y. Mizumoto, J. Noumaru, R. Ogasawara, K. Sekiguchi, Y. Shirasaki, T. Totani, J. Watanabe, & T. Yamada.* 593, L19 (2003)

KAWABATA, KOJI S. See OHYAMA, YOUICHI, et al. On the Origin of Lyα Blobs at High Redshift: Kinematic Evidence of a Hyperwind Galaxy at z = 3.1. See MAZZALI, PAOLO A., et al. The Type Ic Hypernova SN 2003dh/GRB 030329.

KAWABATA, T. See URATA, Y., et al. Multiband Optical Follow-up Observations of GRB 020813 at the Kiso and Bisei Observatories.

See TORII, K., et al. The Earliest Optical Observations of GRB 30329.

KAWABE, RYOHEI. Water Maser Survey toward Low-Mass Young Stellar Objects in the Northern Sky with the Nobeyama 45 Meter Telescope and the Very Large Array. *Ray S. Furuya, Yoshimi Kitamura, Alwyn Wooten, Mark J. Claussen, & Ryohei Kawabe.* 144, 71 (2003)

Molecular Outflow Search in the ρ Ophiuchi A and B2 Regions. *Takeshi Kamazaki, Masao Saito, Naomi Hirano, Tomofumi Umemoto, & Ryohei Kawabe.* 584, 357 (2003)

High Angular Resolution, Sensitive CS J = 2–1 and J = 3–2 Imaging of the Protostar L1551 NE: Evidence for Outflow-Triggered Star Formation? *Sozo Yokogawa, Yoshimi Kitamura, Munetake Momose, & Ryohei Kawabe.* 595, 266 (2003)

KAWACHI, A. See ENOMOTO, R., et al. Search for TeV Gamma Rays from SN 1987A in 2001.

KAWAGUCHI, TOSHIHIRO. Comptonization in Super-Eddington Accretion Flow and Growth Timescale of Supermassive Black Holes. *Toshihiro Kawaguchi.* 593, 69 (2003)

KAWAI, N. See KAWABATA, K. S., et al. On the Spectrum and Spectropolarimetry of Type Ic Hypernova SN 2003dh/GRB 030329.

See CREW, G. B., et al. *HETE-2* Localization and Observation of the Bright, X-Ray–rich Gamma-Ray Burst GRB 021211.

Earliest Detection of the Optical Afterglow of GRB 030329 and Its Variability. *R. Sato, N. Kawai, M. Suzuki, Y. Yatsu, J. Kataoka, R. Takagi, K. Yanagisawa, & H. Yamaoka.* 599, L9 (2003)

KAWAI, NOBUYUKI. The Pulsar Wind Nebula in G11.2$-$0.3. *Mallory S. E. Roberts, Cindy R. Tam, Victoria M. Kaspi, Maxim Lyutikov, Gautam Vasisht, Michael Pivovaroff, Eric V. Gotthelf, & Nobuyuki Kawai.* 588, 992 (2003)

KAWAKATU, NOZOMU. Protoquasars: Physical States and Observable Properties. *Nozomu Kawakatu, Masayuki Umemura, & Masao Mori.* 583, 85 (2003)

KAWAKITA, HIDEYO. Fluorescence Efficiencies of Monodeuterio-Methane in Comets: Toward the Determination of the Deuterium/Hydrogen Ratio in Methane. *Hideyo Kawakita & Jun-ichi Watanabe.* 582, 534 (2003)

Heliocentric Dependence of the Sodium Emission of Comet 153P/Ikeya-Zhang. *Jun-ichi Watanabe, Hideyo Kawakita, Reiko Furusho, & Mitsugu Fujii.* 585, L159 (2003)

Saturated Hydrocarbons in Comet 153P/Ikeya-Zhang: Ethane, Methane, and Monodeuterio-Methane. *Hideyo Kawakita, Jun-ichi Watanabe, Daisuke Kinoshita, Masateru Ishiguro, & Ryosuke Nakamura.* 590, 573 (2003)

KAWALER, S. D. See MUKADEM, ANJUM S., et al. Constraining the Evolution of ZZ Ceti.

KAWATA, DAISUKE. Galactic Halo Stars in Phase Space: A Hint of Satellite Accretion? *Chris B. Brook, Daisuke Kawata, Brad K. Gibson, & Chris Flynn.* 585, L125 (2003)

The Metallicity of Pregalactic Globular Clusters: The Observational Consequences of the First Stars. *Michael A. Beasley, Daisuke Kawata, Frazer R. Pearce, Duncan A. Forbes, & Brad K. Gibson.* 596, L187 (2003)

KAWATA, K. See AMENOMORI, M., et al. Multi-TeV Gamma-Ray Flares from Markarian 421 in 2000 and 2001 Observed with the Tibet Air Shower Array.

KAWKA, A. A Multiwavelength Study of the High-Field Magnetic White Dwarf EUVE J0317$-$85.5 (=RE J0317$-$853). *Stéphane Vennes, G. D. Schmidt, L. Ferrario, D. J. Christian, D. T. Wickramasinghe, & A. Kawka.* 593, 1040 (2003)

The Extreme-Ultraviolet Continuum of a Strong Stellar Flare. *D. J. Christian, M. Mathioudakis, D. Jevremović, J. Dupuis, S. Vennes, & A. Kawka.* 593, L105 (2003)

KAWKA, ADELA. Spectroscopic Identification of White Dwarfs in the New Luyten Two-Tenths Survey. *Stéphane Vennes & Adela Kawka.* 586, L95 (2003)

KAYE, ANTHONY B. A Theoretical γ Doradus Instability Strip. *Phillip B. Warner, Anthony B. Kaye, & Joyce A. Guzik.* 593, 1049 (2003)

KAYO, ISSHA. Evolution of the Cosmological Density Distribution Function from the Local Collapse Model. *Yasuhiro Ohta, Issha Kayo, & Atsushi Taruya.* 589, 1 (2003)

KAZANAS, DEMOS. Broad Redshifted Line as Signature of Outflow. *Lev Titarchuk, Demos Kazanas, & Peter A. Becker.* 598, 411 (2003)

KAZANAS, DEMOSTHENES. Interchange Method in Compressible Magnetized Couette Flow: Magnetorotational and Magnetoconvective Instabilities. *Dimitris M. Christodoulou, John Contopoulos, & Demosthenes Kazanas.* 586, 372 (2003)

Relativistic and Slowing Down: The Flow in the Hot Spots of Powerful Radio Galaxies and Quasars. *Markos Georganopoulos & Demosthenes Kazanas.* 589, L5 (2003)

Decelerating Flows in TeV Blazars: A Resolution to the BL Lacertae–FR I Unification Problem. *Markos Georganopoulos & Demosthenes Kazanas.* 594, L27 (2003)

KEATING, BRIAN G. An Instrument for Investigating the Large Angular Scale Polarization of the Cosmic Microwave Background. *Brian G. Keating, Christopher W. O'Dell, Joshua O. Gundersen, Lucio Piccirillo, Nate C. Stebor, & Peter T. Timbie.* 144, 1 (2003)

KEDZIORA-CHUDCZER, L. See BIGNALL, H. E., et al. Rapid Variability and Annual Cycles in the Characteristic Timescale of the Scintillating Source PKS 1257$-$326.

KEEL, W. C. A SCUBA Galaxy in the Protocluster around 53W002 at z = 2.4. *Ian Smail, R. J. Ivison, D. G. Gilbank, J. S. Dunlop, W. C. Keel, K. Motohara, & J. A. Stevens.* 583, 551 (2003)

Radio-selected Galaxis in Very Rich Clusters at $z \leq 0.25$. I. Multiwavelength Observations and Data Reduction Techniques. *G. E. Morrison, F. N. Owen, M. J. Ledlow, W. C. Keel, J. M. Hill, W. Voges, & T. Herter.* 146, 267 (2003)

KEEL, WILLIAM C. The Infrared Counterparts of the Optically Unidentified Chandra Deep Field–South 1 Ms Sources. *Haojing Yan, Rogier A. Windhorst, Huub J. A. Röttgering, Seth H. Cohen, Stephen C. Odewahn, Scott C. Chapman, & William C. Keel.* 585, 67 (2003)

KEENAN, F. P. Energy Levels, Radiative Rates, and Collision Strengths for Transitions in Fe XVII. *K. M. Aggarwal, F. P. Keenan, & A. Z. Msezane.* 144, 169 (2003)

Emission Lines of Cl II in the Optical Spectra of Gaseous Nebulae. *F. P. Keenan, L. H. Aller, K. M. Exter, S. Hyung, & D. L. Pollacco.* 584, 385 (2003)

KEENAN, FRANCIS P. Observational Evidence for Mode Coupling in the Chromospheric Network. *R. T. James McAteer, Peter T. Gallagher, David R. Williams, Mihalis Mathioudakis, D. Shaun Bloomfield, Kenneth J. H. Phillips, & Francis P. Keenan.* 587, 806 (2003)

KEENEY, BRIAN A. See GNEDIN, NICKOLAY Y., et al. Linear Gas Dynamics in the Expanding Universe.

KEETON, C. R. See RUSIN, D., et al. The Evolution of a Mass-selected Sample of Early-Type Field Galaxies.

Self-similar Models for the Mass Profiles of Early-Type Lens Galaxies. *D. Rusin, C. S. Kochanek, & C. R. Keeton.* 595, 29 (2003)

KEETON, CHARLES R. Lensing and the Centers of Distant Early-Type Galaxies. *Charles R. Keeton.* 582, 17 (2003)

Analytic Cross Sections for Substructure Lensing. *Charles R. Keeton.* 584, 664 (2003)

The Quintuple Quasar: Radio and Optical Observations. *Joshua N. Winn, Christopher S. Kochanek, Charles R. Keeton, & James E. J. Lovell.* 590, 26 (2003)

The Quintuple Quasar: Mass Models and Interpretation. *Charles R. Keeton & Joshua N. Winn.* 590, 39 (2003)

Lensing Optical Depths for Substructure and Isolated Dark Matter Halos. *Jacqueline Chen, Andrey V. Kravtsov, & Charles R. Keeton.* 592, 24 (2003)

Identifying Lenses with Small-Scale Structure. I. Cusp Lenses. *Charles R. Keeton, B. Scott Gaudi, & A. O. Petters.* 598, 138 (2003)

KEIL, MATHIAS TH. Electron Neutrino Pair Annihilation: A New Source for Muon and Tau Neutrinos in Supernovae. *Robert Buras, Hans-Thomas Janka, Mathias Th. Keil, Georg G. Raffelt, & Markus Rampp.* 587, 320 (2003)

Monte Carlo Study of Supernova Neutrino Spectra Formation. *Mathias Th. Keil, Georg G. Raffelt, & Hans-Thomas Janka.* 590, 971 (2003)

KEIM, NATHAN C. Radio Polarization of the Young High-Magnetic-Field Pulsar PSR J1119−6127. *Fronefield Crawford & Nathan C. Keim.* 590, 1020 (2003)

KEINÄNEN, P. See BÖTTCHER, M., et al. Coordinated Multiwavelength Observations of BL Lacertae in 2000.

KELLER, C. U. Linear Polarization Measurements of Chromospheric Emission Lines. *N. R. Sheeley, Jr., & C. U. Keller.* 594, 1085 (2003)

KELLER, LUKE D. Near-Infrared, Adaptive Optics Observations of the T Tauri Multiple-Star System. *Elise Furlan, William J. Forrest, Dan M. Watson, Keven I. Uchida, Bernhard R. Brandl, Luke D. Keller, & Terry L. Herter.* 596, L87 (2003)

Near-Infrared, Adaptive Optics Observations of the T Tauri Multiple-Star System: Erratum (ApJ, 596, L87 [2003]). *Elise Furlan, William J. Forrest, Dan M. Watson, Keven I. Uchida, Bernhard R. Brandl, Luke D. Keller, & Terry L. Herter.* 599, L117 (2003) (Orig. paper in 596, L87 (2003))

KELLERMANN, K. I. 4C +12.50: A Superluminal Precessing Jet in the Recent Merger System IRAS 13451+1232. *M. L. Lister, K. I. Kellermann, R. C. Vermeulen, M. H. Cohen, J. A. Zensus, & E. Ros.* 584, 135 (2003)

Jet Collimation in Action: Realignment on Kiloparsec Scales in 3C 279. *D. C. Homan, M. L. Lister, K. I. Kellermann, M. H. Cohen, E. Ros, J. A. Zensus, M. Kadler, & R. C. Vermeulen.* 589, L9 (2003)

KELLETT, B. J. Cyclotron Maser Radiation from Astrophysical Shocks. *R. Bingham, B. J. Kellett, R. A. Cairns, J. Tonge, & J. T. Mendonça.* 595, 279 (2003)

KELLEY, J. See COLAVITA, M., et al. Observations of DG Tauri with the Keck Interferometer.

KELLEY, L. A. See ATKINS, R., et al. The High-Energy Gamma-Ray Fluence and Energy Spectrum of GRB 970417A from Observations with Milagrito.

See FALCONE, A., et al. Observation of GeV Solar Energetic Particles from the 1997 November 6 Event Using Milagrito.

See ATKINS, R., et al. Observation of TeV Gamma Rays from the Crab Nebula with Milagro Using a New Background Rejection Technique.

KELLY, BRANDON C. The Cross-Wavelet Transform and Analysis of Quasi-periodic Behavior in the Pearson-Readhead VLBI Survey Sources. *Brandon C. Kelly, Philip A. Hughes, Hugh D. Aller, & Margo F. Aller.* 591, 695 (2003)

KELLY, M. See BÖTTCHER, M., et al. Coordinated Multiwavelength Observations of BL Lacertae in 2000.

KELSO, CHRISTOPHER M. See GNEDIN, NICKOLAY Y., et al. Linear Gas Dynamics in the Expanding Universe.

KELSON, DANIEL D. The Nature of E+A Galaxies in Intermediate Redshift Clusters. *Kim-Vy H. Tran, Marijn Franx, Garth Illingworth, Daniel D. Kelson, & Pieter van Dokkum.* 599, 865 (2003)

KEMBALL, A. J. A Movie of a Star: Multiepoch Very Long Baseline Array Imaging of the SiO Masers toward the Mira Variable TX Cam. *P. J. Diamond & A. J. Kemball.* 599, 1372 (2003)

KEMBHAVI, A. K. A Continuous Injection Plasma Model for the X-Ray/Radio Knots in Kiloparsec-Scale Jets of Active Galactic Nuclei. *S. Sahayanathan, R. Misra, A. K. Kembhavi, & C. L. Kaul.* 588, L77 (2003)

KEMP, J. See ARAUJO-BETANCOR, S., et al. System Parameters of DW Ursae Majoris.

See MIRABAL, N., et al. GRB 021004: A Possible Shell Nebula around a Wolf-Rayet Star Gamma-Ray Burst Progenitor.

KEMPNER, JOSHUA C. *Chandra* Observation of the Merging Cluster A2034. *Joshua C. Kempner, Craig L. Sarazin, & Maxim Markevitch.* 593, 291 (2003)

KENDRICK, R. See COLAVITA, M., et al. Observations of DG Tauri with the Keck Interferometer.

KENDZIORRA, E. See MILLER, J. M., et al. *XMM-Newton* Spectroscopy of the Accretion-driven Millisecond X-Ray Pulsar XTE J1751−305 in Outburst.

KENNEA, J. A. Detection of Pulsed X-Ray Emission from *XMM-Newton* Observations of PSR J0538+2817. *K. E. McGowan, J. A. Kennea, S. Zane, F. A. Córdova, M. Cropper, C. Ho, T. Sasseen, & W. T. Vestrand.* 591, 380 (2003)

KENNICUTT, ROBERT C., JR. Editorial: Editorial Transitions. *Robert C. Kennicutt, Jr.* 582, 1 (2003)

The Composition Gradient in M101 Revisited. II. Electron Temperatures and Implications for the Nebular Abundance Scale. *Robert C. Kennicutt, Jr., Fabio Bresolin, & Donald R. Garnett.* 591, 801 (2003)

KENT, STEPHEN. See SZALAY, ALEXANDER S., et al. Karhunen-Loève Estimation of the Power Spectrum Parameters from the Angular Distribution of Galaxies in Early Sloan Digital Sky Survey Data.

See BUDAVÁRI, TAMÁS, et al. Angular Clustering with Photometric Redshifts in the Sloan Digital Sky Survey: Bimodality in the Clustering Properties of Galaxies.

KENTER, A. T. A New Technique for Determining the Number of X-Ray Sources per Flux Density Interval. *A. T. Kenter & S. S. Murray.* 584, 1016 (2003)

KENYON, S. J. CH Cygni. I. Observational Evidence for a Disk-Jet Connection. *J. L. Sokoloski & S. J. Kenyon.* 584, 1021 (2003)

CH Cygni. II. Optical Flickering from an Unstable Disk. *J. L. Sokoloski & S. J. Kenyon.* 584, 1027 (2003)

KENYON, SCOTT J. Tidally Triggered Star Formation in Close Pairs of Galaxies. II. Constraints on Burst Strengths and Ages. *Elizabeth Barton Gillespie, Margret J. Geller, & Scott J. Kenyon.* 582, 668 (2003)

A Spectroscopic Survey of Subarcsecond Binaries in the Taurus-Auriga Dark Cloud with the *Hubble Space Telescope*. *Patrick Hartigan & Scott J. Kenyon.* 583, 334 (2003)

KEOHANE, J. W. *Chandra* Detection of a Pulsar Wind Nebula Associated with Supernova Remnant 3C 396. *C. M. Olbert, J. W. Keohane, K. A. Arnaud, K. K. Dyer, S. P. Reynolds, & S. Safi-Harb.* 592, L45 (2003)

KEPLER, S. O. See MUKADEM, ANJUM S., et al. Constraining the Evolution of ZZ Ceti.

KERBER, F. CG J1720−67.8: A Detailed Analysis of Optical and Infrared Properties of a New Ultracompact Group of Galaxies. *S. Temporin, R. Weinberger, G. Galaz, & F. Kerber.* 584, 239 (2003)

Candidate Tidal Dwarf Galaxies in the Compact Group CG J1720−67.8. *S. Temporin, R. Weinberger, G. Galaz, & F. Kerber.* 587, 660 (2003)

KERES, DUSAN. CO Luminosity Functions for Far-Infrared– and *B*-Band–selected Galaxies and the First Estimate for $\Omega_{\rm H\,I+H_2}$. *Dusan Keres, Min S. Yun, & J. S. Young.* 582, 659 (2003)

KERINS, E. Theory of Pixel Lensing toward M31. II. The Velocity Anisotropy and Flattening of the MACHO Distribution. *E. Kerins, J. An, N. W. Evans, P. Baillon, B. J. Carr, Y. Giraud-Héraud, A. Gould, P. Hewett, J. Kaplan, S. Paulin-Henriksson, S. J. Smartt, Y. Tsarpras, & D. Valls-Gabaud.* 598, 993 (2003)

KERN, B. Optical Pulse-Phased Photopolarimetry of PSR B0656+14. *B. Kern, C. Martin, B. Mazin, & J. P. Halpern.* 597, 1049 (2003)

KERSCHBAUM, F. Infrared Properties of Solid Titanium Oxides: Exploring Potential Primary Dust Condensates. *T. Posch, F. Kerschbaum, D. Fabian, H. Mutschke, J. Dorschner, A. Tamanai, & T. Henning.* 149, 437 (2003)

KERSCHER, MARTIN. See SZALAY, ALEXANDER S., et al. Karhunen-Loève Estimation of the Power Spectrum Parameters from the Angular Distribution of Galaxies in Early Sloan Digital Sky Survey Data.

KERTON, C. R. An Outer Galaxy Molecular Cloud Catalog. *Christopher M. Brunt, C. R. Kerton, & Caroline Pomerleau.* 144, 47 (2003)

KERTZMAN, M. See HOLDER, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.

See HALL, T. A., et al. Search for TeV Emissions from Pulsars in Binary Systems.

See DE LA CALLE PÉREZ, I., et al. Search for High-Energy Gamma Rays from an X-Ray–Selected Blazar Sample.

KESHET, URI. Gamma Rays from Intergalactic Shocks. *Uri Keshet, Eli Waxman, Abraham Loeb, Volker Springel, & Lars Hernquist.* 585, 128 (2003)

KESSLER, JACQUELINE E. Continuum and CO/HCO^+ Emission from the Disk around the T Tauri Star LkCa 15. *Chunhua Qi, Jacqueline E. Kessler, David W. Koerner, Anneila I. Sargent, & Geoffrey A. Blake.* 597, 986 (2003)

KESTEVEN, M. J. Polarization Observations in a Low Synchrotron Emission Field at 1.4 GHz. *G. Bernardi, E. Carretti, S. Cortiglioni, R. J. Sault, M. J. Kesteven, & S. Poppi.* 594, L5 (2003)

KETO, ERIC. The Formation of Massive Stars by Accretion through Trapped Hypercompact H II Regions. *Eric Keto.* 599, 1196 (2003)

KEWLEY, L. See CORBETT, E. A., et al. COLA. II. Radio and Spectroscopic Diagnostics of Nuclear Activity in Galaxies.
See WANG, J., et al. A Puzzling X-Ray Source Found in the *Chandra* Deep Field–South.
See GILLI, R., et al. Tracing the Large-Scale Structure in the *Chandra* Deep Field South.
See GROGIN, N. A., et al. *Hubble Space Telescope* Imaging in the *Chandra* Deep Field–South. III. Quantitative Morphology of the 1 Million Second *Chandra* Counterparts and Comparison with the Field Population.
KEWLEY, L. J. Internal Dust Correction Factors for Star Formation Rates Derived for Dusty H II Regions and Starburst Galaxies. *M. A. Dopita, B. A. Groves, R. S. Sutherland, & L. J. Kewley.* 583, 727 (2003)
KEYES, E. A. Ballooning Modes in Thin Accretion Disks: Limits for Their Excitation. *B. Coppi & E. A. Keyes.* 595, 1000 (2003)
KHAMITOV, IREK. See COLLEY, WESLEY N., et al. Around-the-Clock Observations of the Q9057+561A,B Gravitationally Lensed Quasar. II. Results for the Second Observing Season.
KHARCHENKO, V. Charge Abundances of the Solar Wind Ions Inferred from Cometary X-Ray Spectra. *V. Kharchenko, Matt Rigazio, A. Dalgarno, & V. A. Krasnopolsky.* 585, L73 (2003)
KHEYFETS, ARKADY. Off-Axis Neutrino Scattering in Gamma-Ray Burst Central Engines. *Warner A. Miller, Nathan D. George, Arkady Kheyfets, & John M. McGhee.* 583, 833 (2003)
KHOCHFAR, S. The Importance of Spheroidal and Mixed Mergers for Early-Type Galaxy Formation. *S. Khochfar & A. Burkert.* 597, L117 (2003)
KHOKHLOV, ALEXEI. See WANG, LIFAN, et al. Spectropolarimetry of SN 2001el in NGC 1448: Asphericity of a Normal Type Ia Supernova.
KHOMENKO, E. V. Magnetoacoustic Waves in Sunspots. *E. V. Khomenko, M. Collados, & L. R. Bellot Rubio.* 588, 606 (2003)
KIEDA, D. See HOLDER, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.
See HALL, T. A., et al. Search for TeV Emissions from Pulsars in Binary Systems.
See DE LA CALLE PÉREZ, I., et al. Search for High-Energy Gamma Rays from an X-Ray–Selected Blazar Sample.
KIFUNE, T. See ENOMOTO, R., et al. Search for TeV Gamma Rays from SN 1987A in 2001.
KII, TSUNEO. See OHTA, KOUJI, et al. Optical Identification of the *ASCA* Lynx Deep Survey: An Association of Quasi-Stellar Objects and a Supercluster at $z = 1.3$?
KILDEA, J. See HOLDER, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.
See HALL, T. A., et al. Search for TeV Emissions from Pulsars in Binary Systems.
See DE LA CALLE PÉREZ, I., et al. Search for High-Energy Gamma Rays from an X-Ray–Selected Blazar Sample.
KILGARD, R. E. Classifying X-Ray Sources in External Galaxies from X-Ray Colors. *A. H. Prestwich, J. A. Irwin, R. E. Kilgard, M. I. Krauss, A. Zezas, F. Primini, P. Kaaret, & B. Boroson.* 595, 719 (2003)
KILIC, M. See MUKADEM, ANJUM S., et al. Constraining the Evolution of ZZ Ceti.
KILKENNY, D. See MUKADEM, ANJUM S., et al. Constraining the Evolution of ZZ Ceti.
KILMARTIN, P. M. See SUMI, T., et al. Microlensing Optical Depth toward the Galactic Bulge from Microlensing Observations during 2000 with Difference Image Analysis.
KIM, A. G. See KNOP, R. A., et al. New Constraints on Ω_M, Ω_Λ, and w from an Independent Set of 11 High-Redshift Supernovae Observed with the *Hubble Space Telescope*.
KIM, C. The Probability Distribution of Binary Pulsar Coalescence Rates. I. Double Neutron Star Systems in the Galactic Field. *C. Kim, V. Kalogera, & D. R. Lorimer.* 584, 985 (2003)
KIM, D. W. 1WGA J1216.9+3743: *Chandra* Finds an Extremely Steep Ultraluminous X-Ray Source. *I. Cagnoni, R. Turolla, A. Treaves, J.-S. Huang, D. W. Kim, M. Elvis, & A. Celotti.* 582, 654 (2003)
KIM, D.-C. Optical and Near-Infrared Imaging of the *IRAS* 1 Jy Sample of Ultraluminous Infrared Galaxies. I. The Atlas: Addendum (ApJS, 143, 277 [2002]). *D.-C. Kim, S. Veilleux, & D. B. Sanders.* 147, 221 (2003) (Orig. paper in 143, 277 (2002))
Optical and Near-Infrared Imaging of the *IRAS* 1 Jy Sample of Ultraluminous Infrared Galaxies. II. The Analysis: Addendum (ApJS, 143, 315 [2002]). *S. Veilleux, D.-C. Kim, & D. B. Sanders.* 147, 223 (2003) (Orig. paper in 143, 315 (2002))
KIM, D.-W. See MARKEVITCH, M., et al. *Chandra* Temperature Map of A754 and Constraints on Thermal Conduction.
ROSAT HRI Investigation of the NGC 507 X-Ray Halo. *M. Paolillo, G. Fabbiano, G. Peres, & D.-W. Kim.* 586, 850 (2003)
An *XMM-Newton* and *Chandra* Investigation of the Nuclear Accretion in the Sombrero Galaxy (NGC 4594). *S. Pellegrini, A. Baldi, G. Fabbiano, & D.-W. Kim.* 597, 175 (2003)
KIM, DONG-WOO. *Chandra* X-Ray Observations of NGC 1316 (Fornax A). *Dong-Woo Kim & G. Fabbiano.* 586, 826 (2003)
KIM, EUN-JIN. Gravity Wave–driven Flows in the Solar Tachocline. II. Stationary Flows. *Eun-jin Kim & K. B. MacGregor.* 588, 645 (2003)
Self-consistent Mean Field Theory in Weakly Ionized Media. *Nicolas Leprovost & Eun-jin Kim.* 598, L99 (2003)
KIM, HO-IL. Raman-scattered He II λ6545 Line in the Symbiotic Star V1016 Cygni. *Hee-Won Lee, Young-Jong Sohn, Young Woon Kang, & Ho-Il Kim.* 598, 553 (2003)
KIM, HYEKYUNG CLARISSE. CH, CO, and $E(B-V)$ as Molecular Gas Tracers in a Translucent Cloud. *Loris Magnani, Raymond J. Chastain, Hyekyung Clarisse Kim, Dap Hartmann, Anthony T. Truong, & Patrick Thaddeus.* 586, 1111 (2003)
KIM, J. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.
KIM, JONGSOO. The Effect of Cosmic-Ray Diffusion on the Parker Instability. *Dongsu Ryu, Jongsoo Kim, Seung Soo Hong, & T. W. Jones.* 589, 338 (2003)
Numerical Study of Compressible Magnetohydrodynamic Turbulence in Two Dimensions. *Hyesook Lee, Dongsu Ryu, Jongsoo Kim, T. W. Jones, & Dinshaw Balsara.* 594, 627 (2003)
KIM, KEE-TAE. Molecular Counterparts of Ultracompact H II Regions with Extended Envelopes. *Kee-Tae Kim & Bon-Chul Koo.* 596, 362 (2003)
KIM, RITA. See BAHCALL, NETA A., et al. The Cluster Mass Function from Early Sloan Digital Sky Survey Data: Cosmological Implications.
KIM, RITA S. J. See BAHCALL, NETA A., et al. A Merged Catalog of Clusters of Galaxies from Early Sloan Digital Sky Survey Data.
KIM, S. J. High-Resolution 3 Micron Spectroscopy of Molecules in the Mesosphere and Troposphere of Titan. *T. R. Geballe, S. J. Kim, K. S. Noll, & C. A. Griffith.* 583, L39 (2003)
KIM, SUNGEUN. A Neutral Hydrogen Survey of the Large Magellanic Cloud: Aperture Synthesis and Multibeam Data Combined. *Sungeun Kim, Lister Staveley-Smith, Michael A. Dopita, Robert J. Sault, Youngung Lee, & You-Hua Chu.* 148, 473 (2003)
KIM, SUNGSOO S. The NIRSPEC Brown Dwarf Spectroscopic Survey. I. Low-Resolution Near-Infrared Spectra. *Ian S. McLean, Mark R. McGovern, Adam J. Burgasser, J. Davy Kirkpatrick, L. Prato, & Sungsoo S. Kim.* 596, 561 (2003)
Dynamical Friction on Star Clusters near the Galactic Center. *Sungsoo S. Kim & Mark Morris.* 597, 312 (2003)
See FIGER, DONALD F., et al. High-Precision Stellar Radial Velocities in the Galactic Center.
KIM, TAE-SUN. Metallicity of the Intergalactic Medium Using Pixel Statistics. II. The Distribution of Metals as Traced by C IV. *Joop Schaye, Anthony Aguirre, Tae-Sun Kim, Tom Theuns, Michael Rauch, & Wallace L. W. Sargent.* 596, 768 (2003)
KIM, WOONG-TAE. Three-Dimensional Simulations of Parker, Magneto-Jeans, and Swing Instabilities in Shearing Galactic Gas Disks: Erratum (ApJ, 581, 1080 [2002]). *Woong-Tae Kim, Eve C. Ostriker, & James M. Stone.* 595, 574 (2003) (Orig. paper in 581, 1080 (2002))
Thermal Instability in Clusters of Galaxies with Conduction. *Woong-Tae Kim & Ramesh Narayan.* 596, 889 (2003)
Turbulent Mixing in Clusters of Galaxies. *Woong-Tae Kim & Ramesh Narayan.* 596, L139 (2003)
Magnetorotationally Driven Galactic Turbulence and the Formation of Giant Molecular Clouds. *Woong-Tae Kim, Eve C. Ostriker, & James M. Stone.* 599, 1157 (2003)
KIM, YONG-CHEOL. The Y^2 Stellar Evolutionary Tracks. *Sukyoung K. Yi, Yong-Cheol Kim, & Pierre Demarque.* 144, 259 (2003)
KIMBLE, R. See PRICE, P. A., et al. GRB 010921: Strong Limits on an Underlying Supernova from the *Hubble Space Telescope*.
KIMBLE, R. A. See TRAN, H. D., et al. Advanced Camera for Surveys Observations of Young Star Clusters in the Interacting Galaxy UGC 10214.

See GALAMA, T. J., et al. *Hubble Space Telescope* and Ground-based Optical and Ultraviolet Observations of GRB 010222.

See PRICE, P. A., et al. Discovery of GRB 020405 and Its Late Red Bump.

See BOUWENS, R. J., et al. Star Formation at $z \sim 6$: i-Dropouts in the Advanced Camera for Surveys Guaranteed Time Observation Fields.

See MEURER, GERHARDT R., et al. The Discovery of Globular Clusters in the Protospiral Galaxy NGC 2915: Implications for Hierarchical Galaxy Evolution.

KIMBLE, RANDY. See BLAKESLEE, JOHN P., et al. Discovery of Two Distant Type Ia Supernovae in the Hubble Deep Field–North with the Advanced Camera for Surveys.

KIMBLE, RANDY A. Far-Ultraviolet Emission from Elliptical Galaxies at $z = 0.33$. *Thomas M. Brown, Henry C. Ferguson, Ed Smith, Charles W. Bowers, Randy A. Kimble, Alvio Renzini, & R. Michael Rich.* 584, L69 (2003)

Evidence of a Significant Intermediate-Age Population in the M31 Halo from Main-Sequence Photometry. *Thomas M. Brown, Henry C. Ferguson, Ed Smith, Randy A. Kimble, Allen V. Sweigart, Alvio Renzini, R. Michael Rich, & Don A. VandenBerg.* 592, L17 (2003)

KIMURA, HIROSHI. Elemental Abundances and Mass Densities of Dust and Gas in the Local Interstellar Cloud. *Hiroshi Kimura, Ingrid Mann, & Elmar K. Jessberger.* 582, 846 (2003)

Composition, Structure, and Size Distribution in the Local Interstellar Cloud. *Hiroshi Kimura, Ingrid Mann, & Elmar K. Jessberger.* 583, 314 (2003)

KIMURA, M. See SHIMASAKU, K., et al. Subaru Deep Survey. IV. Discovery of a Large-Scale Structure at Redshift $\simeq$5.

KIMURA, MASAHIKO. See OUCHI, MASAMI, et al. Subaru Deep Survey. II. Luminosity Functions and Clustering Properties of Lyα Emitters at $z = 4.86$ in the Subaru Deep Field.

See KOMIYAMA, YUTAKA, et al. Discovery of Latent Star Formation in the Extended H I Gas around the Local Group Dwarf Irregular Galaxy NGC 6822.

See HAMANA, TAKASHI, et al. Cosmic Shear Statistics in the Suprime-Cam 2.1 Square Degree Field: Constraints on Ω_m and Σ_8.

See IWAMURO, FUMIHIDE, et al. Infrared Spectroscopy of 15 Radio Galaxies at $2 < z < 2.6$.

KIMURA, YUKI. Are TiC Grains a Carrier of the 21 Micron Emission Band Observed around Post–Asymptotic Giant Branch Objects? *Takeshi Chigai, Tetsuo Yamamoto, Chihiro Kaito, & Yuki Kimura.* 587, 771 (2003)

KING, A R. The Time-variable Ultraluminous X-Ray Sources of "The Antennae." *G. Fabbiano, A. Zezas, A. R. King, T. J. Ponman, A. Rots, & Francois Schweizer.* 584, L5 (2003)

Resolved Jets and Long-Period Black Hole X-Ray Novae. *M. R. Garcia, J. M. Miller, J. E. McClintock, A. R. King, & J. Orosz.* 591, 388 (2003)

A Variable Ultraluminous Supersoft X-Ray Source in "The Antennae": Stellar-Mass Black Hole or White Dwarf? *G. Fabbiano, A. R. King, A. Zezas, T. J. Ponman, A. Rots, & François Schweizer.* 591, 843 (2003)

The Disk-Jet Connection in Microquasars and Active Galactic Nuclei. *Mario Livio, J. E. Pringle, & A. R. King.* 593, 184 (2003)

KING, ANDREW. Black Holes, Galaxy Formation, and the $M_{\rm BH}$-σ Relation. *Andrew King.* 596, L27 (2003)

KING, IVAN R. A Probable Dwarf Nova Outburst in the Core of the Globular Cluster M22. *Jay Anderson, Adrienne M. Cool, & Ivan R. King.* 597, L137 (2003)

KING, JEREMY R. Beryllium Abundances in F and G Dwarfs in the Pleiades and α Persei Clusters from Keck High-Resolution Echelle Spectrometer Observations. *Ann Merchant Boesgaard, Eric Armengaud, & Jeremy R. King.* 582, 410 (2003)

Beryllium Abundances in F and G Dwarfs in the Coma Cluster and the Ursa Major Moving Group from Keck HIRES Observations. *Ann Merchant Boesgaard, Eric Armengaud, & Jeremy R. King.* 583, 955 (2003)

KINGSBURGH, ROBIN L. The Extinction and Distance of Maffei 1. *Robin L. Fingerhut, Marshall L. McCall, Michael De Robertis, Robin L. Kingsburgh, Michael Komljenovic, Henry Lee, & Ronald J. Buta.* 587, 672 (2003)

KINKHABWALA, A. Two Types of X-Ray Spectra in Cataclysmic Variables. *Koji Mukai, A. Kinkhabwala, J. R. Peterson, S. M. Kahn, & F. Paerels.* 586, L77 (2003)

KINKHABWALA, ALI. See SAKO, MASAO, et al. Can a Dusty Warm Absorber Model Reproduce the Soft X-Ray Spectra of MCG −6-30-15 and Markarian 766?

KINNEY, A. L. A *Hubble Space Telescope* Survey of Extended [O III] λ5007 Emission in a Far-Infrared Selected Sample of Seyfert Galaxies: Observations. *H. R. Schmitt, J. L. Donley, R. R. J. Antonucci, J. B. Hutchings, & A. L. Kinney.* 148, 327 (2003)

A *Hubble Space Telescope* Survey of Extended [O III] λ5007 Emission in a Far-Infrared Selected Sample of Seyfert Galaxies: Results. *H. R. Schmitt, J. L. Donley, R. R. J. Antonucci, J. B. Hutchings, A. L. Kinney, & J. E. Pringle.* 597, 768 (2003)

KINOSHITA, DAISUKE. Saturated Hydrocarbons in Comet 153P/Ikeya-Zhang: Ethane, Methane, and Monodeuterio-Methane. *Hideyo Kawakita, Jun-ichi Watanabe, Daisuke Kinoshita, Masateru Ishiguro, & Ryosuke Nakamura.* 590, 573 (2003)

KINOSHITA, HIROSHI. Could the 55 Cancri Planetary System Really Be in the 3:1 Mean Motion Resonance? *Jianghui Ji, Hiroshi Kinoshita, Lin Liu, & Guangyu Li.* 585, L139 (2003)

The Librating Companions in HD 37124, HD 12661, HD 82943, 47 Ursa Majoris, and GJ 876: Alignment or Antialignment? *Jianghui Ji, Lin Liu, Hiroshi Kinoshita, Jilin Zhou, Hiroshi Nakai, & Guangyu Li.* 591, L57 (2003)

KINUGASA, K. See TORII, K., et al. The Earliest Optical Observations of GRB 30329.

KIRBY, K. The Molecular Line Opacity of MgH in Cool Stellar Atmospheres. *P. F. Weck, A. Schweitzer, P. C. Stancil, P. H. Hauschildt, & K. Kirby.* 582, 1059 (2003)

$B' \leftarrow X$ Rovibrationally Resolved Photodissociation of ^{24}MgH. *P. F. Weck, P. C. Stancil, & K. Kirby.* 582, 1263 (2003)

The Molecular Continuum Opacity of ^{24}MgH in Cool Stellar Atmospheres. *P. F. Weck, A. Schweitzer, P. C. Stancil, P. H. Hauschildt, & K. Kirby.* 584, 459 (2003)

New Theoretical Line List for the $B'\ ^2\Sigma^+ \leftarrow X\ ^2\Sigma^+$ System of ^{24}MgH. *S. Skory, P. F. Weck, P. C. Stancil, & K. Kirby.* 148, 599 (2003)

KIRK, J. Modeling the TeV Gamma-Ray Spectra of Two Low-Redshift Active Galactic Nuclei: Markarian 501 and Markarian 421. *A. Konopelko, A. Mastichiadis, J. Kirk, O. C. de Jager, & F. W. Stecker.* 597, 851 (2003)

KIRK, J. G. Dissipation in Poynting-Flux–dominated Flows: The σ-Problem of the Crab Pulsar Wind. *J. G. Kirk & O. Skjaeraasen.* 591, 366 (2003)

KIRKMAN, DAVID. The Cosmological Baryon Density from the Deuterium-to-Hydrogen Ratio in QSO Absorption Systems: D/H toward Q1243+3047. *David Kirkman, David Tytler, Nao Suzuki, John M. O'Meara, & Dan Lubin.* 149, 1 (2003)

KIRKPATRICK, J. DAVY. The Discovery of Two Nearby Carbon Dwarfs. *Patrick J. Lowrance, J. Davy Kirkpatrick, I. Neill Reid, Kelle L. Cruz, & James Liebert.* 584, L95 (2003)

Binarity in Brown Dwarfs: T Dwarf Binaries Discovered with the *Hubble Space Telescope* Wide Field Planetary Camera 2. *Adam J. Burgasser, J. Davy Kirkpatrick, I. Neill Reid, Michael E. Brown, Cherie L. Miskey, & John E. Gizis.* 586, 512 (2003)

See BURGASSER, ADAM J., et al. The First Substellar Subdwarf? Discovery of a Metal-poor L Dwarf with Halo Kinematics.

The Spectra of T Dwarfs. II. Red Optical Data. *Adam J. Burgasser, J. Davy Kirkpatrick, James Liebert, & Adam Burrows.* 594, 510 (2003)

The NIRSPEC Brown Dwarf Spectroscopic Survey. I. Low-Resolution Near-Infrared Spectra. *Ian S. McLean, Mark R. McGovern, Adam J. Burgasser, J. Davy Kirkpatrick, L. Prato, & Sungsoo S. Kim.* 596, 561 (2003)

KIRSHNER, R. P. See GARNAVICH, P. M., et al. Discovery of the Low-Redshift Optical Afterglow of GRB 011121 and Its Progenitor Supernova SN 2001ke.

See MATHESON, T., et al. Photometry and Spectroscopy of GRB 03029 and Its Associated Supernova 2003dh: The First Two Months.

KIRSHNER, ROBERT. See MICHAEL, ELI, et al. *Hubble Space Telescope* Observations of High-Velocity Lyα and Hα Emission from Supernova Remnant 1987A: The Structure and Development of the Reverse Shock.

KIRSHNER, ROBERT P. See TONRY, JOHN L., et al. Cosmological Results from High-z Supernovae.

KISELEVA-EGGLETON, LUDMILA. Conditions of Dynamical Stability for the HD 160691 Planetary System. *Eric Bois, Ludmila Kiseleva-Eggleton, Nicolas Rambaux, & Elke Pilat-Lohinger.* 598, 1312 (2003)

KISH, J. C. Updated Formula for Calculating Partial Cross Sections for Nuclear Reactions of Nuclei with $Z \leq 28$ and $E > 150$ MeV per Nucleon in Hydrogen Targets. *W. R. Webber, A. Soutoul, J. C. Kish, & J. M. Rockstroh.* 144, 153 (2003)

KISIEL, ZBIGNIEW. Interstellar Glycine. *Yi-Jehng Kuan, Steven B. Charnley, Hui-Chun Huang, Wei-Ling Tseng, & Zbigniew Kisiel.* 593, 848 (2003)
See MEDVEDEV, IVAN, et al. The Millimeter- and Submillimeter-Wave Spectrum of the Trans-Trans Conformer of Diethyl Ether ($C_2H_5OC_2H_5$).
KISS, L. L. See GIES, D. R., et al. Wind Accretion and State Transitions in Cygnus X-1.
KISS, LÁSZLÓ L. Oscillations in Arcturus from *WIRE* Photometry. *Alon Retter, Timothy R. Bedding, Derek L. Buzasi, Hans Kjeldsen, & László L. Kiss.* 591, L151 (2003)
Oscillations in Arcturus from *WIRE* Photometry: Erratum (ApJ, 591, L151 [2003]). *Alon Retter, Timothy R. Bedding, Derek L. Buzasi, Hans Kjeldsen, & László L. Kiss.* 596, L125 (2003) (Orig. paper in 591, L151 (2003))
KISSLER-PATIG, MARKUS. Evidence for an Intermediate-Age, Metal-rich Population of Globular Clusters in NGC 4365. *Søren S. Larsen, Jean P. Brodie, Michael A. Beasley, Duncan A. Forbes, Markus Kissler-Patig, Harald Kuntschner, & Thomas H. Puzia.* 585, 767 (2003)
KITAMURA, YOSHIMI. Water Maser Survey toward Low-Mass Young Stellar Objects in the Northern Sky with the Nobeyama 45 Meter Telescope and the Very Large Array. *Ray S. Furuya, Yoshimi Kitamura, Alwyn Wooten, Mark J. Claussen, & Ryohei Kawabe.* 144, 71 (2003)
High Angular Resolution, Sensitive CS $J = 2$–1 and $J = 3$–2 Imaging of the Protostar L1551 NE: Evidence for Outflow-Triggered Star Formation? *Sozo Yokogawa, Yoshimi Kitamura, Munetake Momose, & Ryohei Kawabe.* 595, 266 (2003)
KITAYAMA, TETSU. Mass-Temperature Relation of Galaxy Clusters: Implication from the Observed Luminosity-Temperature Relation and X-Ray Temperature Function. *Mamoru Shimizu, Tetsu Kitayama, Shin Sasaki, & Tasushi Suto.* 590, 197 (2003)
Observing H_2 Emission in Forming Galaxies. *Kazuyuki Omukai & Tetsu Kitayama.* 599, 738 (2003)
KITZBICHLER, MANFRED. Detection of Nonrandom Galaxy Orientations in X-Ray Subclusters of the Coma Cluster. *Manfred Kitzbichler & W. Saurer.* 590, L9 (2003)
KJELDSEN, HANS. Oscillations in Arcturus from *WIRE* Photometry. *Alon Retter, Timothy R. Bedding, Derek L. Buzasi, Hans Kjeldsen, & László L. Kiss.* 591, L151 (2003)
Oscillations in Arcturus from *WIRE* Photometry: Erratum (ApJ, 591, L151 [2003]). *Alon Retter, Timothy R. Bedding, Derek L. Buzasi, Hans Kjeldsen, & László L. Kiss.* 596, L125 (2003) (Orig. paper in 591, L151 (2003))
KJERNSMO, KJETIL. See COLLEY, WESLEY N., et al. Around-the-Clock Observations of the Q9057+561A,B Gravitationally Lensed Quasar. II. Results for the Second Observing Season.
KLAHR, H. H. Turbulence in Accretion Disks: Vorticity Generation and Angular Momentum Transport via the Global Baroclinic Instability. *H. H. Klahr & P. Bodenheimer.* 582, 869 (2003)
KLAPPER, GABRIELLE. Laboratory Precision Measurements of the Rotational Spectrum of $^{12}C^{17}O$ and $^{13}C^{17}O$. *Gabriele Klapper, Leonid Surin, Frank Lewen, Holger S. P. Müller, Igor Pak, & Gisbert Winnewisser.* 582, 262 (2003)
KLEBE, D. I. Mid-Infrared Imaging Polarimetry of NGC 7027. *C. A. Jurgenson, R. E. Stencel, D. S. Theil, D. I. Klebe, & T. Ueta.* 582, L35 (2003)
KLEIN, R. First Detection of Millimeter Dust Emission from Brown Dwarf Disks. *R. Klein, D. Apai, I. Pascucci, Th. Henning, & L. B. F. M. Waters.* 593, L57 (2003)
New Laboratory Spectra of Isolated β-SiC Nanoparticles: Comparison with Spectra Taken by the *Infrared Space Observatory*. *D. Clément, H. Mutschke, R. Klein, & Th. Henning.* 594, 642 (2003)
KLEIN, RICHARD I. The Interaction of Supernova Remnants with Interstellar Clouds: Experiments on the Nova Laser. *Richard I. Klein, Kimberly S. Budil, Theordore S. Perry, & David R. Bach.* 583, 245 (2003)
KLEIN, S. See ATKINS, R., et al. The High-Energy Gamma-Ray Fluence and Energy Spectrum of GRB 970417A from Observations with Milagrito.
KLEINMAN, S. J. See MUKADEM, ANJUM S., et al. Constraining the Evolution of ZZ Ceti.
See SCHMIDT, GARY D., et al. Magnetic White Dwarfs from the Sloan Digital Sky Survey: The First Data Release.
KLEINWÄCHTER, A. Relativistic Dyson Rings and Their Black Hole Limit. *M. Ansorg, A. Kleinwächter, & R. Meinel.* 582, L87 (2003)
KLEIN-WOLT, MARC. High-Frequency Quasi-Periodic Oscillations in the Black Holes X-Ray Transient XTE J1650−500. *Jeroen Homan, Marc Klein-Wolt, Sabrina Rossi, Jon M. Miller, Rudy Wijnands, Tomaso Belloni, Michiel van der Klis, & Walter H. G. Lewin.* 586, 1262 (2003)
Hard X-Ray Flares Preceding Soft X-Ray Outbursts in Aquila X-1: A Link between Neutron Star and Black Hole Transitions. *Wenfei Yu, Marc Klein-Wolt, Rob Fender, & Michiel van der Klis.* 589, L33 (2003)
KLESSEN, R. S. A Holistic Scenario of Turbulent Molecular Cloud Evolution and Control of the Star Formation Efficiency: First Tests. *E. Vázquez-Semadeni, J. Ballesteros-Paredes, & R. S. Klessen.* 585, L131 (2003)
KLESSEN, RALF S. Draco: A Failure of the Tidal Model. *Ralf S. Klessen, Eva K. Grebel, & Daniel Harbeck.* 589, 798 (2003)
Dynamic Cores in Hydrostatic Disguise. *Javier Ballesteros-Paredes, Ralf S. Klessen, & Enrique Vázquez-Semadeni.* 592, 188 (2003)
The Formation of Stellar Clusters in Turbulent Molecular Clouds: Effects of the Equation of State. *Yuexing Li, Ralf S. Klessen, & Mordecai-Mark Mac Low.* 592, 975 (2003)
KLEY, WILLY. Orbital Migration and Mass Accretion of Protoplanets in Three-dimensional Global Computations with Nested Grids. *Gennaro D'Angelo, Willy Kley, & Thomas Henning.* 586, 540 (2003)
Thermohydrodynamics of Circumstellar Disks with High-Mass Planets. *Gennaro D'Angelo, Thomas Henning, & Willy Kley.* 599, 548 (2003)
KLEYNA, JAN T. A Dynamical Fossil in the Ursa Minor Dwarf Spheroidal Galaxy. *Jan T. Kleyna, Mark I. Wilkinson, Gerard Gilmore, & N. Wyn Evans.* 588, L21 (2003)
A Dynamical Fossil in the Ursa Minor Dwarf Spheroidal Galaxy: Erratum (ApJ, 588, L21 [2003]). *Jan T. Kleyna, Mark I. Wilkinson, Gerard Gilmore, & N. Wyn Evans.* 589, L59 (2003) (Orig. paper in 588, L21 (2003))
KLIMCHUK, J. A. A Transient Heating Model for Coronal Structure and Dynamics. *D. Spadaro, A. F. Lanza, A. C. Lanzafame, J. T. Karpen, S. K. Antiochos, J. A. Klimchuk, & P. J. MacNeice.* 582, 486 (2003)
The Long-Term Evolution of AR 7978: The Scalings of the Coronal Plasma Parameters with the Mean Photospheric Magnetic Field. *L. van Driel-Gesztelyi, P. Démoulin, C. H. Mandrini, L. Harra, & J. A. Klimchuk.* 586, 579 (2003)
The Long-Term Evolution of AR 7978: Testing Coronal Heating Models. *P. Démoulin, L. van Driel-Gesztelyi, C. H. Mandrini, J. A. Klimchuk, & L. Harra.* 586, 592 (2003)
Constraints on the Magnetic Field Geometry in Prominences. *J. T. Karpen, S. K. Antiochos, J. A. Klimchuk, & P. J. MacNeice.* 593, 1187 (2003)
KLOSE, S. See PRICE, P. A., et al. GRB 010921: Strong Limits on an Underlying Supernova from the *Hubble Space Telescope*.
The Very Faint *K*-Band Afterglow of GRB 020819 and the Dust Extinction Hypothesis of the Dark Bursts. *S. Klose, A. A. Henden, J. Greiner, D. H. Hartmann, N. Cardiel, A. J. Castro-Tirado, J. M. Castro Cerón, J. Gallego, J. Gorosabel, B. Stecklum, N. Tanvir, U. Thiele, F. J. Vrba, & A. Zeh.* 592, 1025 (2003)
See GREINER, J., et al. GRB 011121: A Collimated Outflow into Wind-blown Surroundings.
KLUMPE, E. W. See MUKADEM, ANJUM S., et al. Constraining the Evolution of ZZ Ceti.
KLYPIN, A. Modeling Dynamical Dark Energy. *R. Mainini, A. V. Macciò, S. A. Bonometto, & A. Klypin.* 599, 24 (2003)
Halo Properties in Models with Dynamical Dark Energy. *A. Klypin, A. V. Macciò, R. Mainini, & S. A. Bonometto.* 599, 31 (2003)
KLYPIN, ANATOLY. Constrained Simulations of the Real Universe: The Local Supercluster. *Anatoly Klypin, Yehuda Hoffman, Andrey V. Kravtsov, & Stefan Gottlöber.* 596, 19 (2003)
See PRADA, FRANCISCO, et al. Observing the Dark Matter Density Profile of Isolated Galaxies.
KNACKE, ROGER F. Mid-Infrared Imaging of the First-Ascent Giant HD 233517. *R. Scott Fisher, C. M. Telesco, Robert K. Piña, & Roger F. Knacke.* 586, L91 (2003)
KNAEPEN, BERNARD. Thermal Conduction in Magnetized Turbulent Gas. *Jungyeon Cho, A. Lazarian, Albert Honein, Bernard Knaepen, Stavros Kassinos, & Parviz Moin.* 589, L77 (2003)
KNAPP, GILLIAN R. See SZKODY, PAULA, et al. Two Rare Magnetic Cataclysmic Variables with Extreme Cyclotron Features Identified in the Sloan Digital Sky Survey.
See BAHCALL, NETA A., et al. The Cluster Mass Function from Early Sloan Digital Sky Survey Data: Cosmological Implications.
See HELMI, AMINA, et al. Selection of Metal-poor Giant Stars Using the Sloan Digital Sky Survey Photometric System.

See Szalay, Alexander S., et al. Karhunen-Loève Estimation of the Power Spectrum Parameters from the Angular Distribution of Galaxies in Early Sloan Digital Sky Survey Data.

See Schmidt, Gary D., et al. Magnetic White Dwarfs from the Sloan Digital Sky Survey: The First Data Release.

Knapp, J. See Holder, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.

See Hall, T. A., et al. Search for TeV Emissions from Pulsars in Binary Systems.

See de la Calle Pérez, I., et al. Search for High-Energy Gamma Rays from an X-Ray–Selected Blazar Sample.

Knauth, David C. An Ultrahigh-Resolution Survey of the Interstellar ^{7}Li/^{6}Li Isotope Ratio in the Solar Neighborhood. *David C. Knauth, S. R. Federman, & David L. Lambert.* 586, 268 (2003)

Deuterium toward Two Milky Way Disk Stars: Probing Extended Sight Lines with the *Far Ultraviolet Spectroscopic Explorer*. *Charles G. Hoopes, Kenneth R. Sembach, Guillaume Hébrard, H. Warren Moos, & David C. Knauth.* 586, 1094 (2003)

On the Origin of the High-Ionization Intermediate-Velocity Gas toward HD 14434. *David C. Knauth, J. Christopher Howk, Kenneth R. Sembach, James T. Lauroesch, & David M. Meyer.* 592, 964 (2003)

An Ultra–High-Resolution Survey of the Interstellar ^{7}Li/^{6}Li Isotope Ratio in the Solar Neighborhood: Erratum (ApJ, 586, 268 [2003]). *David C. Knauth, S. R. Federman, & David L. Lambert.* 594, 664 (2003) (Orig. paper in 586, 268 (2003))

Potential Variations in the Interstellar N I Abundance. *David C. Knauth, B-G Andersson, Stephan R. McCandliss, & H. Warren Moos.* 596, L51 (2003)

Kneer, F. Quiet-Sun Magnetic Fields at High Spatial Resolution. *I. Domínguez Cardena, F. Kneer, & J. Sanchez Almeida.* 582, L55 (2003)

Simultaneous Visible and Infrared Spectropolarimetry of a Solar Internetwork Region. *J. Sánchez Almeida, I. Domínguez Cerdeña, & F. Kneer.* 597, L177 (2003)

Kneib, J.-P. See Swinbank, A. M., et al. Galaxies under the Cosmic Microscope: A Gemini Multiobject Spectrograph Study of the Lensed Disk Galaxy 289 in A2218.

Kneib, Jean-Paul. Measuring σ_8 with Cluster Lensing: Biases from Unrelaxed Clusters. *Graham P. Smith, Alastair C. Edge, Vincent R. Eke, Robert C. Nichol, Ian Smail, & Jean-Paul Kneib.* 590, L79 (2003)

A Wide-Field *Hubble Space Telescope* Study of the Cluster Cl 0024+16 at $z = 0.4$. I. Morphological Distributions to 5 Mpc Radius. *Tommaso Treu, Richard S. Ellis, Jean-Paul Kneib, Alan Dressler, Ian Smail, Oliver Czoske, Augustus Oemler, & Priyamvada Natarajan.* 591, 53 (2003)

A Wide-Field *Hubble Space Telescope* Study of the Cluster Cl 0024+1654 at $z = 0.4$. II. The Cluster Mass Distribution. *Jean-Paul Kneib, Patrick Hudelot, Richard S. Ellis, Tommaso Treu, Graham Smith, Phil Marshall, Oliver Czoske, Ian Smail, & Priyamvada Natarajan.* 598, 804 (2003)

Kneller, J. P. Testing Two Nuclear Physics Approximations Used in the Standard Leaky-Box Model for the Spallogenic Production of LiBeB. *J. P. Kneller, J. R. Phillips, & T. P. Walker.* 589, 217 (2003)

Knez, Claudia. A CS $J = 5 \rightarrow 4$ Mapping Survey Toward High-Mass Star-Forming Cores Associated with Water Masers. *Yancy L. Shirley, Neal J. Evans II, Kaisa E. Young, Claudia Knez, & Daniel T. Jaffe.* 149, 375 (2003)

Knezek, Patricia M. See Pritzl, Barton J., et al. Anomalous Evolution of the Dwarf Galaxy HIPASS J1321−31.

Kniazev, Alexei Y. Discovery of Eight New Extremely Metal-poor Galaxies in the Sloan Digital Sky Survey. *Alexei Y. Kniazev, Eva K. Grebel, Lei Hao, Michael A. Strauss, Jonathan Brinkmann, & Masataka Fukugita.* 593, L73 (2003)

Knierman, Karen A. Stellar Hydrodynamics in Radiative Regions. *Patrick A. Young, Karen A. Knierman, Jane R. Rigby, & David Arnett.* 595, 1114 (2003)

Knigge, C. See Araujo-Betancor, S., et al. System Parameters of DW Ursae Majoris.

Knigge, Christian. Accretion and Outflow in Interacting Binary Systems: *Far Ultraviolet Spectropscopic Explorer* Observations of the Nova-like Cataclysmic Variable UX Ursae Majoris. *Cynthia S. Froning, Knox S. Long, & Christian Knigge.* 584, 433 (2003)

WZ Sagittae: *FUSE* Spectroscopy of the 2001 Outburst. *Knox S. Long, Cynthia S. Froning, Boris Gänsicke, Christian Knigge, Edward M. Sion, & Paula Szkody.* 591, 1172 (2003)

See Sion, Edward M., et al. *Hubble Space Telescope* Spectroscopy of the Unexpected 2001 July Outburst of the Dwarf Nova WZ Sagittae.

See Gänsicke, Boris T., et al. Anomalous Ultraviolet Line Flux Ratios in the Cataclysmic variables 1RXS J232953.9+062814, CE 315, BZ Ursae Majoris, and EY Cygni observed with the *Hubble Space Telescope* Space Telescope Imaging Spectrograph.

Hubble Space Telescope Observations of Ultraviolet Oscillations in WZ Sagittae during the Decline from Outburst. *William F. Welsh, Edward M. Sion, Patrick Godon, Boris T. Gänsicke, Christian Knigge, Knox S. Long, & Paula Szkody.* 599, 509 (2003)

A Far-Ultraviolet Survey of 47 Tucanae. II. The Long-Period Cataclysmic Variable AKO 9. *Christian Knigge, David R. Zurek, Michael M. Shara, Knox S. Long, & Ronald L. Gilliland.* 599, 1320 (2003)

Knight, H. S. Self-Consistency of Relativistic Observables with General Relativity in the White Dwarf–Neutron Star Binary PSR J1141−6545. *M. Bailes, S. M. Ord, H. S. Knight, & A. W. Hotan.* 595, L49 (2003)

Knop, R. A. New Constraints on Ω_M, Ω_Λ, and w from an Independent Set of 11 High-Redshift Supernovae Observed with the *Hubble Space Telescope*. *R. A. Knop, G. Aldering, R. Amanullah, P. Astier, G. Blanc, M. S. Burns, A. Conley, S. E. Deustua, M. Doi, R. Ellis, S. Fabbro, G. Folatelli, A. S. Fruchter, G. Garavini, S. Garmond, K. Garton, R. Gibbons, G. Goldhaber, A. Goobar, D. E. Groom, D. Hardin, I. Hook, D. A. Howell, A. G. Kim, B. C. Lee, C. Lidman, J. Mendez, S. Nobili, P. E. Nugent, R. Pain, N. Panagia, C. R. Pennypacker, S. Perlmutter, R. Quimby, J. Raux, N. Regnault, P. Ruiz-Lapuente, G. Sainton, B. Schaefer, K. Schahmaneche, E. Smith, A. L. Wood-Vasey, & N. Yasuda.* 598, 102 (2003)

Knox, L. Cosmic Microwave Background Anisotropy Measurement from Python V. *K. Coble, S. Dodelson, M. Dragovan, K. Ganga, L. Knox, J. Kovac, B. Ratra, & T. Souradeep.* 584, 585 (2003)

See Aguirre, J. E., et al. The Spectrum of Integrated Millimeter Flux of the Magellanic Clouds and 30 Doradus from TopHat and DIRBE Data.

Knox, Lloyd. The Effect of Bandpass Uncertainities on Component Separation. *Sarah Church, Lloyd Knox, & Martin White.* 582, L63 (2003)

Probing the Reionization History of the Universe using the Cosmic Microwave Background Polarization. *Manoj Kaplinghat, Mike Chu, Zoltan Haiman, Gilbert P. Holder, Lloyd Knox, & Constantinos Skordis.* 583, 24 (2003)

Gravitational Potential Reconstruction from Peculiar Velocity and Weak Lensing Measurements. *Olivier Doré, Lloyd Knox, & Alan Peel.* 585, L81 (2003)

The Far-Infrared Background Correlation with Cosmic Microwave Background Lensing. *Yong-Seon Song, Asantha Cooray, Lloyd Knox, & Matias Zaldarriaga.* 590, 664 (2003)

The Reionization History at High Redshifts. II. Estimating the Optical Depth to Thomson Scattering from Cosmic Microwave Background Polarization. *Gilbert P. Holder, Zoltán Haiman, Manoj Kaplinghat, & Lloyd Knox.* 595, 13 (2003)

Normal Parameters for an Analytic Description of the Cosmic Microwave Background Cosmological Parameter Likelihood. *Mike Chu, Manoj Kaplinghat, & Lloyd Knox.* 596, 725 (2003)

Small-Scale Cosmic Microwave Background Temperature and Polarization Anisotropies due to Patchy Reionization. *Mário G. Santos, Asantha Cooray, Zoltán Haiman, Lloyd Knox, & Chung-Pei Ma.* 598, 756 (2003)

Ko, C. M. Diffusive-Compression Acceleration and Turbulent Diffusion of Cosmic Rays in Quasi-periodic and Turbulent Flows. *G. M. Webb, C. M. Ko, G. P. Zank, & J. R. Jokipii.* 595, 195 (2003)

Ko, Y.-K. Elemental Abundances for the 1996 Streamer Belt. *M. Uzzo, Y.-K. Ko, J. C. Raymond, P. Wurz, & F. M. Ipavich.* 585, 1062 (2003)

Temporal Evolution of a Streamer Complex: Coronal and in Situ Plasma Parameters. *A. Bemporad, G. Poletto, S. T. Suess, Y.-K. Ko, S. Parenti, P. Riley, M. Romoli, & T. Z. Zurbuchen.* 593, 1146 (2003)

Far-Ultraviolet Spectra of Fast Coronal Mass Ejections Associated with X-Class Flares. *J. C. Raymond, A. Ciaravella, D. Dobrzycka, L. Strachan, Y.-K. Ko, & M. Uzzo.* 597, 1106 (2003)

Ko, Yuan-Kuen. Dynamical and Physical Properties of a Post–Coronal Mass Ejection Current Sheet. *Yuan-Kuen Ko, John C. Raymond, Jun Lin, Gareth Lawrence, Jing Li, & Andrzej Fludra.* 594, 1068 (2003)

Kobayashi, Ken. See Nagata, Shin'ichi, et al. Spatial and Temporal Properties of Hot and Cool Coronal Loops.

Kobayashi, N. See Kawabata, K. S., et al. On the Spectrum and Spectropolarimetry of Type Ic Hypernova SN 2003dh/GRB 030329.

Kobayashi, Naoto. X-Ray Properties of Young Stellar Objects in OMC-2 and OMC-3 from the *Chandra X-Ray Observatory*: Erratum (ApJ, 566, 974 [2002]). *Masahiro Tsujimoto, Katsuji Koyama, Yohko Tsuboi, Miwa*

Goto, & Naoto Kobayashi. 585, 602 (2003) (Orig. paper in 566, 974 (2002))
See Goto, Miwa, et al. Spatially Resolved 3 Micron Spectroscopy of IRAS 22272+5435: Formation and Evolution of Aliphatic Hydrocarbon Dust in Proto–Planetary Nebulae.
See Pyo, Tae-Soo, et al. Adaptive Optics Spectroscopy of the [Fe II] Outflow from DG Tauri.
See Iye, Masanori, et al. ERO R1 in the Field of Cl 0939+4713: Evidence for an S0-Like Galaxy at $z \sim 1.5$.
See Goto, Miwa, et al. Carbon Isotope Ratio in $^{12}CO/^{13}CO$ toward Local Molecular Clouds with Near-Infrared High-Resolution Spectroscopy of Vibrational Transition Bands.
Kobayashi, Shiho. GRB 021004: Reverse Shock Emission. *Shiho Kobayashi & Bing Zhang.* 582, L75 (2003)
Polarized Gravitational Waves from Gamma-Ray Bursts. *Shiho Kobayashi & Peter Mészáros.* 585, L89 (2003)
Gravitational Radiation from Gamma-Ray Burst Progenitors. *Shiho Kobayashi & Peter Mészáros.* 589, 861 (2003)
Gamma-Ray Burst Early Optical Afterglows: Implications for the Initial Lorentz Factor and the Central Engine. *Bing Zhang, Shiho Kobayashi, & Peter Mészáros.* 595, 950 (2003)
Early Optical Afterglows from Wind-Type Gamma-Ray Bursts. *Shiho Kobayashi & Bing Zhang.* 597, 455 (2003)
Kobayashi, Yukiyasu. See Yoshii, Yuzuru, et al. The Optical/Near-Infrared Light Curves of SN 2002ap for the First 140 Days after Discovery.
A Two-Component Model for the Light Curves of Hypernovae. *Keiichi Maeda, Paolo A. Mazzali, Jingsong Deng, Ken'ichi Nomoto, Yuzuru Yoshii, Hiroyuki Tomita, & Yukiyasu Kobayashi.* 593, 931 (2003)
Kobulnicky, Henry A. The Spectral Energy Distributions of Infant Super–Star Clusters in Henize 2-10 from 7 Millimeters to 6 Centimeters. *Kelsey E. Johnson & Henry A. Kobulnicky.* 597, 923 (2003)
The DEEP Groth Strip Survey. VII. The Metallicity of Field Galaxies at $0.26 < z < 0.82$ and the Evolution of the Luminosity-Metallicity Relation. *Henry A. Kobulnicky, Christopher N. A. Willmer, Andrew C. Phillips, David C. Koo, S. M. Faber, Benjamin J. Weiner, Vicki L. Sarajedini, Luc Simard, & Nicole P. Vogt.* 599, 1006 (2003)
Measuring Global Galaxy Metallicities Using Emission-Line Equivalent Widths. *Henry A. Kobulnicky & Andrew C. Phillips.* 599, 1031 (2003)
Kočer, Michal. Peculiar Pair of Distant Periodic Comets C/2002 A1 and C/2002 A2 (LINEAR). *Zdenek Sekanina, Paul W. Chodas, Miloš Tichý, Jana Tichá, & Michal Kočer.* 591, L67 (2003)
Kocevski, Dan. The Connection between Spectral Evolution and Gamma-Ray Burst Lag. *Dan Kocevski & Edison Liang.* 594, 385 (2003)
Search for Relativistic Curvature Effects in Gamma-Ray Burst Pulses. *Dan Kocevski, Felix Ryde, & Edison Liang.* 596, 389 (2003)
Kochanek, C. S. Gravitational Lens Time Delays in Cold Dark Matter. *C. S. Kochanek.* 583, 49 (2003)
Clusters of Galaxies in the Local Universe. *C. S. Kochanek, Martin White, J. Huchra, L. Macri, T. H. Jarrett, S. E. Schneider, & J. Mader.* 585, 161 (2003)
See Rusin, D., et al. The Evolution of a Mass-selected Sample of Early-Type Field Galaxies.
The Redshift Distribution of Flat-Spectrum Radio Sources. *J. A. Muñoz, E. E. Falco, C. S. Kochanek, J. Lehár, & E. Mediavilla.* 594, 684 (2003)
Self-similar Models for the Mass Profiles of Early-Type Lens Galaxies. *D. Rusin, C. S. Kochanek, & C. R. Keeton.* 595, 29 (2003)
Kochanek, Christopher S. Investigation of the Possible Third Image and Mass Models of the Gravitational Lens PMN J1632−0033. *Joshua N. Winn, David Rusin, & Christopher S. Kochanek.* 587, 80 (2003)
The Quintuple Quasar: Radio and Optical Observations. *Joshua N. Winn, Christopher S. Kochanek, Charles R. Keeton, & James E. J. Lovell.* 590, 26 (2003)
Kocharov, L. The Origin of High-Energy ^{3}He-rich Solar Particle Events. *L. Kocharov & J. Torsti.* 586, 1430 (2003)
Kodaira, K. See Shimasaku, K., et al. Subaru Deep Survey. IV. Discovery of a Large-Scale Structure at Redshift $\simeq$5.
Kodaira, Keiichi. See Ouchi, Masami, et al. Subaru Deep Survey. II. Luminosity Functions and Clustering Properties of Lyα Emitters at $z = 4.86$ in the Subaru Deep Field.
Kodama, T. The Transformation of Galaxies within the Large-Scale Structure around a $z = 0.41$ Cluster: Erratum (ApJ, 562, L9 [2001]). *T. Kodama, Ian Smail, F. Nakata, S. Okamura, & R. G. Bower.* 591, L169 (2003) (Orig. paper in 562, L9 (2001))
Kodama, Takayuki. See Iye, Masanori, et al. ERO R1 in the Field of Cl 0939+4713: Evidence for an S0-Like Galaxy at $z \sim 1.5$.
Kodituwakku, C. N. Assessment of the Fluorescence and Auger Database used in Plasma Modeling. *T. W. Gorczyca, C. N. Kodituwakku, K. T. Korista, O. Zatsarinny, N. R. Badnell, E. Behar, M. H. Chen, & D. W. Savin.* 592, 636 (2003)
Koechlin, L. See Prieur, J. L., et al. Speckle Observations of Composite Spectrum Stars. II. Differential Photometry of the Binary Components.
Koekemoer, A. M. See Grogin, N. A., et al. *Hubble Space Telescope* Imaging in the *Chandra* Deep Field–South. III. Quantitative Morphology of the 1 Million Second *Chandra* Counterparts and Comparison with the Field Population.
Königl, Arieh. Neutron-rich Hydromagnetic Outflows in Gamma-Ray Burst Sources. *Nektarios Vlahakis, Fang Peng, & Arieh Königl.* 594, L23 (2003)
Linear Polarization in Gamma-Ray Bursts: The Case for an Ordered Magnetic Field. *Jonathan Granot & Arieh Königl.* 594, L83 (2003)
Relativistic Magnetohydrodynamics with Application to Gamma-Ray Burst Outflows. I. Theory and Semianalytic Trans-Alfvénic Solutions. *Nektarios Vlahakis & Arieh Königl.* 596, 1080 (2003)
Relativistic Magnetohydrodynamics with Applications to Gamma-Ray Burst Outflows. II. Semianalytic Super-Alfvénic Solutions. *Nektarios Vlahakis & Arieh Königl.* 596, 1104 (2003)
Koenigsberger, Gloria. A Supernova Remnant Collision with a Stellar Wind. *Pablo F. Velázquez, Gloria Koenigsberger, & Alejandro C. Raga.* 584, 284 (2003)
Koerner, D. W. The Inner Rings of β Pictoris. *Z. Wahhaj, D. W. Koerner, M. E. Ressler, M. W. Werner, D. E. Backman, & A. I. Sargent.* 584, L27 (2003)
Koerner, David W. Luminosity Functions of Young Clusters: Modeling the Substellar Mass Regime. *Peter R. Allen, David E. Trilling, David W. Koerner, & I. Neill Reid.* 595, 1222 (2003)
Continuum and CO/HCO^+ Emission from the Disk around the T Tauri Star LkCa 15. *Chunhua Qi, Jacqueline E. Kessler, David W. Koerner, Anneila I. Sargent, & Geoffrey A. Blake.* 597, 986 (2003)
Koester, D. High-Resolution Spectroscopy of the Pulsating White Dwarf G29-38. *Susan E. Thompson, J. C. Clemens, M. H. van Kerkwijk, & D. Koester.* 589, 921 (2003)
Metal Lines in DA White Dwarfs. *B. Zuckerman, D. Koester, I. N. Reid, & M. Huensch.* 596, 477 (2003)
Kogut, A. See Bennett, C. L., et al. The *Microwave Anisotropy Probe* Mission.
See Page, L., et al. The Optical Design and Characterization of the *Microwave Anisotropy Probe*.
See Jarosik, N., et al. Design, Implementation, and Testing of the *Microwave Anisotropy Probe* Radiometers.
See Bennett, C. L., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Preliminary Maps and Basic Results.
See Jarosik, N., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: On-Orbit Radiometer Characterization.
See Page, L., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Beam Profiles and Window Functions.
See Barnes, C., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Galactic Signal Contamination from Sidelobe Pickup.
See Hinshaw, G., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Data Processing Methods and Systematic Errors Limits.
See Bennett, C. L., et al. First-Year *Wilkinson Microwave Anisotrophy Probe* (*WMAP*) Observations: Foreground Emission.
See Komatsu, E., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Tests of Gaussianity.
See Hinshaw, G., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: The Angular Power Spectrum.
First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Temperature-Polarization Correlation. *A. Kogut, D. N. Spergel, C. Barnes, C. L. Bennett, M. Halpern, G. Hinshaw, N. Jarosik, M. Limon, S. S. Meyer, L. Page, G. S. Tucker, E. Wollack, & E. L. Wright.* 148, 161 (2003)
See Spergel, D. N., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Determination of Cosmological Parameters.
See Verde, L., et al. First-Year *Wilkinson Microwave Anisotrophy Probe* (*WMAP*) Observations: Parameter Estimation Methodology.

See Peiris, H. V., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Implications for Inflation.

See Page, L., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Interpretation of the TT and TE Angular Power Spectrum Peaks.

Kohama, M. See Torii, K., et al. The Earliest Optical Observations of GRB 30329.

Kohl, J. L. Empirically Determined Anisotropic Velocity Distributions and Outflows of O^{5+} Ions in a Coronal Streamer at Solar Minimum. *R. A. Frazin, S. R. Cranmer, & J. L. Kohl.* 597, 1145 (2003)

Kohmura, T. See Torii, K., et al. The Earliest Optical Observations of GRB 30329.

Kohmura, Takayoshi. See Watanabe, Shin, et al. Detection of a Fully Resolved Compton Shoulder of the Iron Kα Line in the *Chandra* X-Ray Spectrum of GX 301-2.

Koike, Osamu. *p*-Process Nucleosynthesis inside Supernova-driven Supercritical Accretion Disks. *Shin-ichirou Fujimoto, Masa-aki Hashimoto, Osamu Koike, Kenzo Arai, & Ryuichi Matsuba.* 585, 418 (2003)

Kolb, Edward W. Stellar-Mass Black Holes in the Solar Neighborhood. *James R. Chisholm, Scott Dodelson, & Edward W. Kolb.* 596, 437 (2003)

Koldoba, A. V. Three-Dimensional Simulations of Disk Accretion to an Inclined Dipole. I. Magnetospheric Flows at Different Θ. *M. M. Romanova, G. V. Ustyugova, A. V. Koldoba, J. V. Wick, & R. V. E. Lovelace.* 595, 1009 (2003)

Koller, Josef. Vortices in the Co-orbital Region of an Embedded Protoplanet. *Hui Li, Josef Koller, & Douglas N. C. Lin.* 596, L91 (2003)

Kollmeier, Juna A. Lyman Break Galaxies and the Lyα Forest. *Juna A. Kollmeier, David H. Weinberg, Romeel Davé, & Neal Katz.* 594, 75 (2003)

Kolpak, Michal A. Resolving the Kinematic Distance Ambiguity toward Galactic H II Regions. *Michal A. Kolpak, James M. Jackson, T. M. Bania, D. P. Clemens, & John M. Dickey.* 582, 756 (2003)

Komatsu, E. See Bennett, C. L., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Preliminary Maps and Basic Results.

First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Tests of Gaussianity. *E. Komatsu, A. Kogut, M. R. Nolta, C. L. Bennett, M. Halpern, G. Hinshaw, N. Jarosik, M. Limon, S. S. Meyer, L. Page, D. N. Spergel, G. S. Tucker, L. Verde, E. Wollack, & E. L. Wright.* 148, 119 (2003)

See Hinshaw, G., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: The Angular Power Spectrum.

See Spergel, D. N., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Determination of Cosmological Parameters.

See Peiris, H. V., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Implications for Inflation.

Komiyama, Y. See Shimasaku, K., et al. Subaru Deep Survey. IV. Discovery of a Large-Scale Structure at Redshift $\simeq$5.

See Mobasher, Bahram, et al. A Photometric and Spectroscopic Study of Dwarf and Giant Galaxies in the Coma Cluster. IV. The Luminosity Function.

See Kawabata, K. S., et al. On the Spectrum and Spectropolarimetry of Type Ic Hypernova SN 2003dh/GRB 030329.

Komiyama, Yutaka. See Ouchi, Masami, et al. Subaru Deep Survey. II. Luminosity Functions and Clustering Properties of Lyα Emitters at $z = 4.86$ in the Subaru Deep Field.

See Taniguchi, Yoshiaki, et al. The Discovery of a Very Narrow Line Star-forming Object at a Redshift of 5.66.

See Fujita, Shinobu S., et al. The Hα Luminosity Function and Star Formation Rate at $z \approx 0.24$ Based on Subaru Deep Imaging Data.

Discovery of Latent Star Formation in the Extended H I Gas around the Local Group Dwarf Irregular Galaxy NGC 6822. *Yutaka Komiyama, Sadanori Okamura, Masafumi Yagi, Hisanori Furusawa, Mamoru Doi, Masaru Hamabe, Katsumi Imi, Masahiko Kimura, Satoshi Miyazaki, Fumiaki Nakata, Norio Okada, Masami Ouchi, Maki Sekiguchi, Kazuhiro Shimasaku, Naoki Yasuda, Nobuo Arimoto, & Chisato Ikuta.* 590, L17 (2003)

See Hamana, Takashi, et al. Cosmic Shear Statistics in the Suprime-Cam 2.1 Square Degree Field: Constraints on Ω_m and Σ_8.

Komljenovic, Michael. The Extinction and Distance of Maffei 1. *Robin L. Fingerhut, Marshall L. McCall, Michael De Robertis, Robin L. Kingsburgh, Michael Komljenovic, Henry Lee, & Ronald J. Buta.* 587, 672 (2003)

Komm, R. Temporal Variation of Angular Momentum in the Solar Convection Zone. *R. Komm, R. Howe, B. R. Durney, & F. Hill.* 586, 650 (2003)

A Comparison of Low-Degree Solar *p*-Mode Parameters from BiSON and GONG: Underlying Values and Temporal Variations. *R. Howe, W. J. Chaplin, Y. P. Elsworth, F. Hill, R. Komm, G. R. Isaak, & R. New.* 588, 1204 (2003)

A Comparison of Solar *p*-Mode Parameters from MDI and GONG: Mode Frequencies and Structure Inversion. *S. Basu, J. Christensen-Dalsgaard, R. Howe, J. Schou, M. J. Thompson, F. Hill, & R. Komm.* 591, 432 (2003)

Komossa, S. Discovery of a Binary Active Galaxy Nucleus in the Ultraluminous Infrared Galaxy NGC 6240 Using *CHANDRA*. *S. Komossa, V. Burwitz, G. Hasinger, P. Predehl, J. S. Kaastra, & Y. Ikebe.* 582, L15 (2003)

Follow-Up *Hubble Space Telescope*/Space Telescope Imaging Spectroscopy of Three Candidate Tidal Disruption Events. *S. Gezari, J. P. Halpern, S. Komossa, D. Grupe, & K. M. Leighly.* 592, 42 (2003)

Komossa, Stefanie. An Active Galactic Nucleus Sample with High X-Ray–to–Optical Flux Ratio from RASS. II. Optical Emission Line Properties of Seyfert 1 Type Active Galactic Nuclei. *D. W. Xu, Stefanie Komossa, J. Y. Wei, Y. Qian, & X. Z. Zheng.* 590, 73 (2003)

Komp, William. Cosmological Acceleration through Transition to Constant Scalar Curvature. *Leonard Parker, William Komp, & Daniel A. T. Vanzella.* 588, 663 (2003)

Konacki, Maciej. Geodetic Precession and Timing of the Relativistic Binary Pulsars PSR B1534+12 and PSR 1913+16. *Maciej Konacki, Alex Wolszczan, & Ingrid H. Stairs.* 589, 495 (2003)

Masses and Orbital Inclinations of Planets in the PSR B1257+12 System. *Maciej Konacki & Alex Wolszczan.* 591, L147 (2003)

Where Is the Second Planet in the HD 160691 Planetary System? *Krzysztof Gozdziewski, Maciej Konacki, & Andrzej J. Maciejewski.* 594, 1019 (2003)

High-Resolution Spectroscopic Follow-up of OGLE Planetary Transit Candidates in the Galactic Bulge: Two Possible Jupiter-Mass Planets and Two Blends. *Maciej Konacki, Guillermo Torres, Dimitar D. Sasselov, & Saurabh Jha.* 597, 1076 (2003)

Kondou, K. Spatial Distributions of A3558 in the Core Region of the Shapley Supercluster. *F. Akimoto, K. Kondou, A. Furuzawa, Y. Tawara, & K. Yamashita.* 596, 170 (2003)

Kondrakto, P. T. The Discovery of H_2O Maser Emission in Seven Active Galactic Nuclei and at High Velocities in the Circinus Galaxy. *L. J. Greenhill, P. T. Kondrakto, J. E. J. Lovell, T. B. H. Kuiper, J. M. Moran, D. L. Jauncey, & G. P. Baines.* 582, L11 (2003)

Kong, A. K. H. A Luminous Recurrent Supersoft X-Ray Source in NGC 300. *A. K. H. Kong & R. Di Stefano.* 590, L13 (2003)

Discovery of Radio/X-Ray/Optical–resolved Supernova Remnants in the Center of the Andromeda Galaxy. *A. K. H. Kong, L. O. Sjouwerman, B. F. Williams, M. R. Garcia, & J. R. Dickel.* 590, L21 (2003)

Luminous Supersoft X-Ray Sources in External Galaxies. *R. Di Stefano & A. K. H. Kong.* 592, 884 (2003)

X-Ray Point Sources in the Sombrero Galaxy: Supersoft Sources, the Globular Cluster/Low-Mass X-Ray Binary Connection, and an Overview. *R. DiStefano, A. K. H. Kong, M. L. VanDalfsen, W. E. Harris, S. S. Murray, & K. M. Delain.* 599, 1067 (2003)

Kong, Albert K. H. *Chandra* Studies of the X-Ray Point Source Luminosity Functions of M31. *Albert K. H. Kong, Rosanne DiStefano, Michael R. Garcia, & Jochen Greiner.* 585, 298 (2003)

Konopacky, Quinn. Deep Keck Adaptive Optics Searches for Extrasolar Planets in the Dust of ϵ Eridani and Vega. *Bruce A. Macintosh, E. E. Becklin, Denise Kaisler, Quinn Konopacky, & B. Zuckerman.* 594, 538 (2003)

A *Hubble Space Telescope* Search for Lyman Continuum Emission from Galaxies at $1.1 < z < 1.4$. *Matthew Malkan, Wayne Webb, & Quinn Konopacky.* 598, 878 (2003)

Konopelko, A. Modeling the TeV Gamma-Ray Spectra of Two Low-Redshift Active Galactic Nuclei: Markarian 501 and Markarian 421. *A. Konopelko, A. Mastichiadis, J. Kirk, O. C. de Jager, & F. W. Stecker.* 597, 851 (2003)

Kontar, Eduard P. *RHESSI* Hard X-Ray Imaging Spectroscopy of the Large Gamma-Ray Flare of 2002 July 23. *A. Gordon Emslie, Eduard P. Kontar, Säm Krucker, & Robert P. Lin.* 595, L107 (2003)

The Determination and Use of Mean Electron Flux Spectra in Solar Flares. *John C. Brown, A. Gordon Emslie, & Eduard P. Kontar.* 595, L115 (2003)

An Explanation for Non–Power-Law Behavior in the Hard X-Ray Spectrum of the 2002 July 23 Solar Flare. *Eduard P. Kontar, John C. Brown,*

A. Gordon Emslie, Richard A. Schwartz, David M. Smith, & R. Calum Alexander. 595, L123 (2003)

Regularized Electron Flux Spectra in the 2002 July 23 Solar Flare. *Michele Piana, Anna Maria Massone, Eduard P. Kontar, A. Gordon Emslie, John C. Brown, & Richard A. Schwartz.* 595, L127 (2003)

KOO, BON-CHUL. Molecular Counterparts of Ultracompact H II Regions with Extended Envelopes. *Kee-Tae Kim & Bon-Chul Koo.* 596, 362 (2003)

KOO, D. C. A Multiwavelength Approach to the Star Formation Rate Estimation in Galaxies at Intermediate Redshifts. *N. Cardiel, D. Elbaz, R. P. Schiavon, C. N. A. Willmer, D. C. Koo, A. C. Phillips, & J. Gallego.* 584, 76 (2003)

Stellar Masses of Luminous Compact Blue Galaxies at Redshifts $z = 0.4$–1.2. *R. Guzmán, G. Östlin, D. Kunth, M. A. Bershady, D. C. Koo, & M. A. Pahre.* 586, L45 (2003)

KOO, DAVID C. See GEBHARDT, KARL, et al. The DEEP Groth Strip Survery. IX. Evolution of the Fundamental Plane of Field Galaxies.

See MADGWICK, DARREN S., et al. The DEEP2 Galaxy Redshift Survey: Spectral Classification of Galaxies at $z \sim 1$.

See KOBULNICKY, HENRY A., et al. The DEEP Groth Strip Survey. VII. The Metallicity of Field Galaxies at $0.26 < z < 0.82$ and the Evolution of the Luminosity-Metallicity Relation.

KOOPMANS, L. V. E. Extrinsic Radio Variability of JVAS/CLASS Gravitational Lenses. *L. V. E. Koopmans, A. Biggs, R. D. Blandford, I. W. A. Browne, N. J. Jackson, S. Mao, P. N. Wilkinson, A. G. de Bruyn, & J. Wambsganss.* 595, 712 (2003)

The Hubble Constant from the Gravitational Lens B1608+656. *L. V. E. Koopmans, T. Treu, C. D. Fassnacht, R. D. Blandford, & G. Surpi.* 599, 70 (2003)

KOOPMANS, LÉON V. E. The Structure and Dynamics of Luminous and Dark Matter in the Early-Type Lens Galaxy of 0047−281 at $z = 0.485$. *Léon V. E. Koopmans & Tommaso Treu.* 583, 606 (2003)

KOPEIKIN, S. M. The Measurement of the Light Deflection from Jupiter: Experimental Results. *E. B. Fomalont & S. M. Kopeikin.* 598, 704 (2003)

KÖPKE, L. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

KORCHAGIN, VLADIMIR I. A Capture Scenario for Globular Cluster ω Centauri. *Toshio Tsuchiya, Dana I. Dinescu, & Vladimir I. Korchagin.* 589, L29 (2003)

KORESKO, C. A Search for Close Binaries in the ρ Ophiuchi Star-forming Region. *M. Barsony, C. Koresko, & K. Matthews.* 591, 1064 (2003)

See COLAVITA, M., et al. Observations of DG Tauri with the Keck Interferometer.

See SWAIN, MARK, et al. Interferometer Observations of Subparsec-Scale Infrared Emission in the Nucleus of NGC 4151.

KORISTA, K. T. The Mass of Quasar Broad Emission Line Regions. *J. A. Baldwin, G. J. Ferland, K. T. Korista, F. Hamann, & M. Dietrich.* 582, 590 (2003)

Chemical Abundances in Broad Emission Line Regions: The "Nitrogen-loud" Quasi-Stellar Object Q0353−383. *J. A. Baldwin, F. Hamann, K. T. Korista, G. J. Ferland, M. Dietrich, & C. Warner.* 583, 649 (2003)

Assessment of the Fluorescence and Auger Database used in Plasma Modeling. *T. W. Gorczyca, C. N. Kodituwakku, K. T. Korista, O. Zatsarinny, N. R. Badnell, E. Behar, M. H. Chen, & D. W. Savin.* 592, 636 (2003)

KORISTA, KIRK T. Iron Emission in $z \approx 6$ QSOs. *Wolfram Freudling, Michael R. Corbin, & Kirk T. Korista.* 587, L67 (2003)

Contrasting the Ultraviolet and X-Ray O VI Column Density Inferred for the Outflow in NGC 5548. *Nahum Arav, Jelle Kaastra, Katrien Steenbrugge, Bert Brinkman, Rick Edelson, Kirk T. Korista, & Martijn de Kool.* 590, 174 (2003)

KORMENDY, JOHN. See GEBHARDT, KARL, et al. Axisymmetric Dynamical Models of the Central Regions of Galaxies.

KOSACK, K. See HOLDER, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.

See DE LA CALLE PÉREZ, I., et al. Search for High-Energy Gamma Rays from an X-Ray–Selected Blazar Sample.

KOSOVICHEV, A. G. Optimal Masks for Solar g-Mode Detection. *R. Wachter, J. Schou, A. G. Kosovichev, & P. H. Scherrer.* 588, 1199 (2003)

Solar Seismic Models and the Neutrino Predictions. *S. Couvidat, S. Turck-Chièze, & A. G. Kosovichev.* 599, 1434 (2003)

KOSOVICHEV, ALEXANDER G. Helioseismic Observation of the Structure and Dynamics of a Rotating Sunspot beneath the Solar Surface. *Junwei Zhao & Alexander G. Kosovichev.* 591, 446 (2003)

KOSOWSKY, ARTHUR. Effect of Internal Flows on Sunyaev-Zeldovich Measurements of Cluster Peculiar Velocities. *Daisuke Nagai, Andrey V. Kravtsov, & Arthur Kosowsky.* 587, 524 (2003)

KOSUGI, G. See KAWABATA, K. S., et al. On the Spectrum and Spectropolarimetry of Type Ic Hypernova SN 2003dh/GRB 030329.

KOTAKE, KEI. Anisotropic Neutrino Radiation in Rotational Core Collapse. *Kei Kotake, Shoichi Yamada, & Katsuhiko Sato.* 595, 304 (2003)

Decaying Cold Dark Matter and the Evolution of the Cluster Abundance. *Masamune Oguri, Keitaro Takahashi, Hiroshi Ohno, & Kei Kotake.* 597, 645 (2003)

KOTHES, R. Radio Polarization from the Galactic Plane in Cygnus. *B. Uyaniker, T. L. Landecker, A. D. Gray, & R. Kothes.* 585, 785 (2003)

KOTHES, ROLAND. The Distance to the Supernova Remnant CTB 87 and the Radial Velocity of the Perseus Arm toward $l = 75°$. Derived from H I and CO Observations. *Roland Kothes, Wolfgang Reich, Tyler Foster, & Do-Young Byun.* 588, 852 (2003)

KOTILAINEN, J. K. Black Hole Masses and the Fundamental Plane of BL Lacertae Objects. *R. Falomo, J. K. Kotilainen, N. Carangelo, & A. Treves.* 595, 624 (2003)

KOUCHI, AKIRA. Dependence of H_2CO and CH_3OH Formation on Temperature and Thickness of H_2O-CO Ice during the Successive Hydrogenation of CO. *Naoki Watanabe, Takahiro Shiraki, & Akira Kouchi.* 588, L121 (2003)

Evaporation of Interstellar Organic Materials in the Solar Nebula. *Hideyuki Nakano, Akira Kouchi, Shogo Tachibana, & Akira Tsuchiyama.* 592, 1252 (2003)

KOUTCHMY, S. Wavelet Analysis of Umbral Oscillations. *E. B. Christopoulou, A. Skodras, A. A. Georgakilas, & S. Koutchmy.* 591, 416 (2003)

KOUVELIOTOU, C. See WOODS, P. M., et al. The 2001 April Burst Activation of SGR 1900+14: Pulse Properties and Torque.

See FEROCI, M., et al. The 2001 April Burst Activation of SGR 1900+14: X-Ray Afterglow Emission.

Unraveling the Cooling Trend of the Soft Gamma Repeater SGR 1627−41. *C. Kouveliotou, D. Eichler, P. M. Woods, Y. Lyubarsky, S. K. Patel, E. Göğüş, M. van der Klis, A. Tennant, S. Wachter, & K. Hurley.* 596, L79 (2003)

See HJORTH, J., et al. Very High Column Density and Small Reddening toward GRB 020124 at $z = 3.20$.

See GREINER, J., et al. GRB 011121: A Collimated Outflow into Wind-blown Surroundings.

KOUVELIOTOU, CHRYSSA. See PATEL, SANDEEP K., et al. *Chandra* Observations of the Anomalous X-Ray Pulsar 4U 0142+61.

See LENTERS, GEOFFREY T., et al. An Extended Burst Tail from SGR 1900+14 with a Thermal X-Ray Spectrum.

Chandra Observations of the Faintest Low-Mass X-Ray Binaries. *Colleen A. Wilson, Sandeep K. Patel, Chryssa Kouveliotou, Peter G. Jonker, Michiel van der Klis, Walter H. G. Lewin, Tomaso Belloni, & Mariano Méndez.* 596, 1220 (2003)

KOVAC, J. Cosmic Microwave Background Anisotropy Measurement from Python V. *K. Coble, S. Dodelson, M. Dragovan, K. Ganga, L. Knox, J. Kovac, B. Ratra, & T. Souradeep.* 584, 585 (2003)

See MASON, B. S., et al. The Anisotropy of the Microwave Background to $l = 3500$: Deep Field Observatons with the Cosmic Background Imager.

See PEARSON, T. J., et al. The Anisotropy of the Microwave Background to $l = 3500$: Mosaic Observations with the Cosmic Background Imager.

KOVAC, JOHN. Galactic Foreground Constraints from the Python V Cosmic Microwave Background Anisotropy Data. *Pia Mukherjee, Kim Coble, Mark Dragovan, Ken Ganga, John Kovac, Bharat Ratra, & Tarun Souradeep.* 592, 692 (2003)

KOVÁCS, G. See ALCOCK, C., et al. The MACHO Project Large Magellanic Cloud Variable Star Inventory. XI. Frequency Analysis of the Fundamental Mode RR Lyrae Stars.

KOWALSKI, M. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

KOYAMA, KATSUJI. X-Ray Properties of Young Stellar Objects in OMC-2 and OMC-3 from the *Chandra X-Ray Observatory*: Erratum (ApJ, 566, 974 [2002]). *Masahiro Tsujimoto, Katsuji Koyama, Yohko Tsuboi, Miwa Goto, & Naoto Kobayashi.* 585, 602 (2003) (Orig. paper in 566, 974 (2002))

Chandra Observations of a Nonthermal Supernova Remnant Candidate AX J1843.8−0352 and Its Surroundings. *Masaru Ueno, Aya Bamba, Katsuji Koyama, & Ken Ebisawa.* 588, 338 (2003)

Diffuse Hard X-Ray Sources Discovered with the *ASCA* Galactic Plane Survey. *Aya Bamba, Masaru Ueno, Katsuji Koyama, & Shigeo Yamauchi.* 589, 253 (2003)

Small-Scale Structure of the SN 1006 Shock with *Chandra* Observations. *Aya Bamba, Ryo Yamazaki, Masaru Ueno, & Katsuji Koyama.* 589, 827 (2003)

KOYANO, HISASHI. See SATO, BUN'EI, et al. A Planetary Companion to the G-Type Giant Star HD 104985.

KOZASA, TAKASHI. Dust in the Early Universe: Dust Formation in the Ejecta of Population III Supernovae. *Takaya Nozawa, Takashi Kozasa, Hideyuki Umeda, Keiichi Maeda, & Ken'ichi Nomoto.* 598, 785 (2003)

KOZLOVSKY, BENZION. See SHARE, GERALD H., et al. High-Resolution Observation of the Solar Positron-Electron Annihilation Line.

KOZYREV, A. See PRICE, P. A., et al. Discovery of GRB 020405 and Its Late Red Bump.

KRAEMER, KATHLEEN E. Five Star-forming Cores in the Galactic Ring Survey: A Mid-Infrared Study. *Kathleen E. Kraemer, James M. Jackson, Marc Kassis, Lynne K. Deutsch, Joseph L. Hora, Robert Simon, William F. Hoffmann, G. G. Fazio, Aditya Dayal, T. M. Bania, Dan P. Clemens, & Mark H. Heyer.* 588, 918 (2003)

A Uniform Database of 2.4–45.4 Micron Spectra from the *Infrared Space Observatory* Short Wavelength Spectrometer. *G. C. Sloan, Kathleen E. Kraemer, Stephan D. Price, & Russell F. Shipman.* 147, 379 (2003)

Guilt by Association: The 13 Micron Dust Emission Feature and Its Correlation to Other Gas and Dust Features. *G. C. Sloan, Kathleen E. Kraemer, J. H. Goebel, & Stephan D. Price.* 594, 482 (2003)

KRAEMER, S. B. The Kinematics and Physical Conditions of the Ionized Gas in Markarian 509. II. STIS Echelle Observations. *S. B. Kraemer, D. M. Crenshaw, T. Yaqoob, B. McKernan, J. R. Gabel, I. M. George, T. J. Turner, & J. P. Dunn.* 582, 125 (2003)

See CRENSHAW, D. M., et al. Simultaneous Ultraviolet and X-Ray Spectroscopy of the Seyfert 1 Galaxy NGC 5548. I. Physical Conditions in the Ultraviolet Absorbers.

Elemental Abundances in NGC 3516. *T. J. Turner, S. B. Kraemer, R. F. Mushotzky, I. M. George, & J. R. Gabel.* 594, 128 (2003)

XMM-Newton Observation of Fe Kα Emission from a Broad Absorption Line Quasar: Markarian 231. *T. J. Turner & S. B. Kraemer.* 598, 916 (2003)

KRAEMER, STEVEN B. The Kinematics and Physical Conditions of the Ionized Gas in Markarian 509. I. *Chandra* High Energy Grating Spectroscopy. *Tahir Yaqoob, Barry McKernan, Steven B. Kraemer, D. Michael Crenshaw, Jack R. Gabel, Ian M. George, & T. Jane Turner.* 582, 105 (2003)

See GABEL, JACK R., et al. The Ionized Gas and Nuclear Environment in NGC 3783. II. Averaged *Hubble Space Telescope*/STIS and *Far Ultraviolet Spectroscopic Explorer* Spectra.

See GABEL, JACK R., et al. The Ionized Gas and Nuclear Environment in NGC 3783. III. Detection of a Decreasing Radial Velocity in an Intrinsic Ultraviolet Absorber.

See NETZER, HAGAI, et al. The Ionized Gas and Nuclear Environment in NGC 3783. IV. Variability and Modeling of the 900 Kilosecond *Chandra* Spectrum.

KRAFT, R. P. X-Ray Emission from the Hot Interstellar Medium and Southwest Radio Lobe of the Nearby Radio Galaxy Centaurus A. *R. P. Kraft, S. E. Vázquez, W. R. Forman, C. Jones, S. S. Murray, M. J. Hardcastle, D. M. Worrall, & E. Churazov.* 592, 129 (2003)

Radio and X-Ray Observations of the Jet in Centaurus A. *M. J. Hardcastle, D. M. Worrall, R. P. Kraft, W. R. Forman, C. Jones, & S. S. Murray.* 593, 169 (2003)

KRAMER, M. See MCLAUGHLIN, M. A., et al. PSR J1847−0130: A Radio Pulsar with Magnetar Spin Characteristics.

The Proper Motion, Age, and Initial Spin Period of PSR J0538+2817 in S147. *M. Kramer, A. G. Lyne, G. Hobbs, O. Löhmer, P. Carr, C. Jordan, & A. Wolszczan.* 593, L31 (2003)

KRAMER, ROBAN H. X-Ray Emission-Line Profile Modeling of O Stars: Fitting a Spherically Symmetric Analytic Wind-Shock Model to the *Chandra* Spectrum of ζ Puppis. *Roban H. Kramer, David H. Cohen, & Stanley P. Owocki.* 592, 532 (2003)

KRANZ, KELLY. See MOBASHER, BAHRAM, et al. A Photometric and Spectroscopic Study of Dwarf and Giant Galaxies in the Coma Cluster. IV. The Luminosity Function.

KRANZ, THILO. Dark Matter within High Surface Brightness Spiral Galaxies. *Thilo Kranz, Adrianne Slyz, & Hans-Walter Rix.* 586, 143 (2003)

KRASNOPOLSKY, RUBEN. Locating the Launching Region of T Tauri Winds: The Case of DG Tauri. *Jeffrey M. Anderson, Zhi-Yun Li, Ruben Krasnopolsky, & Roger D. Blandford.* 590, L107 (2003)

Magnetocentrifugal Launching of Jets from Accretion Disks. II. Inner Disk-driven Winds. *Ruben Krasnopolsky, Zhi-Yun Li, & Roger D. Blandford.* 595, 631 (2003)

KRASNOPOLSKY, V. A. Charge Abundances of the Solar Wind Ions Inferred from Cometary X-Ray Spectra. *V. Kharchenko, Matt Rigazio, A. Dalgarno, & V. A. Krasnopolsky.* 585, L73 (2003)

KRATZ, K.-L. Actinides in the Source of Cosmic Rays and the Present Interstellar Medium. *R. E. Lingenfelter, J. C. Higdon, K.-L. Kratz, & B. Pfeiffer.* 591, 228 (2003)

KRATZ, KARL-LUDWIG. See SNEDEN, CHRISTOPHER, et al. The Extremely Metal-poor, Neutron Capture–rich Star CS 22892−052: A Comprehensive Abundance Analysis.

KRAUS, U. X-Ray Pulses from Accretion Columns: Contributions to the Energy Dependence of the Pulse Shape. *U. Kraus, C. Zahn, C. Weth, & H. Ruder.* 590, 424 (2003)

KRAUSS, LAWRENCE M. Implications of the *Wilkinson Microwave Anisotropy Probe* Age Measurement for Stellar Evolution and Dark Energy. *Lawrence M. Krauss.* 596, L1 (2003)

KRAUSS, M. The Multicolored Hot Interstellar Medium of the "Antennae" Galaxies (NGC 4038/4039). *G. Fabbiano, M. Krauss, A. Zezas, A. Rots, & S. Neff.* 598, 272 (2003)

KRAUSS, M. I. Classifying X-Ray Sources in External Galaxies from X-Ray Colors. *A. H. Prestwich, J. A. Irwin, R. E. Kilgard, M. I. Krauss, A. Zezas, F. Primini, P. Kaaret, & B. Boroson.* 595, 719 (2003)

KRAUSS, MIRIAM I. *Chandra* Observations of Associates of η Carinae. I. Luminosities. *Nancy Remage Evans, Frederick D. Seward, Miriam I. Krauss, Takashi Isobe, Joy Nichols, Eric M. Schlegel, & Scott J. Wolk.* 589, 509 (2003)

KRAUTTER, J. See NESS, J.-U., et al. A *Chandra* Low Energy Transmission Grating Spectrometer Observation of V4743 Sagittarii: A Supersoft X-Ray Source and a Violently Variable Light Curve.

KRAUTTER, JOACHIM. See DRAKE, JEREMY J., et al. The Extraordinary X-Ray Light Curve of the Classical Nova V1494 Aquilae (1999 No. 2) in Outburst: The Discovery of Pulsations and a "Burst."

KRAVTSOV, ANDREY V. Sample Variance Considerations for Cluster Surveys. *Wayne Hu & Andrey V. Kravtsov.* 584, 702 (2003)

Cold Fronts in Cold Dark Matter Clusters. *Daisuke Nagai & Andrey V. Kravtsov.* 587, 514 (2003)

Effect of Internal Flows on Sunyaev-Zeldovich Measurements of Cluster Peculiar Velocities. *Daisuke Nagai, Andrey V. Kravtsov, & Arthur Kosowsky.* 587, 524 (2003)

On the Origin of the Global Schmidt Law of Star Formation. *Andrey V. Kravtsov.* 590, L1 (2003)

Lensing Optical Depths for Substructure and Isolated Dark Matter Halos. *Jacqueline Chen, Andrey V. Kravtsov, & Charles R. Keeton.* 592, 24 (2003)

Constrained Simulations of the Real Universe: The Local Supercluster. *Anatoly Klypin, Yehuda Hoffman, Andrey V. Kravtsov, & Stefan Gottlöber.* 596, 19 (2003)

KRAWCZYNSKI, H. See HOLDER, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.

See BÖTTCHER, M., et al. Coordinated Multiwavelength Observations of BL Lacertae in 2000.

See DE LA CALLE PÉREZ, I., et al. Search for High-Energy Gamma Rays from an X-Ray–Selected Blazar Sample.

KREMENEK, T. See GHEZ, A. M., et al. The First Measurement of Spectral Lines in a Short-Period Star Bound to the Galaxy's Central Black Hole: A Paradox of Youth.

KRENNRICH, F. See HOLDER, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.

See HALL, T. A., et al. Search for TeV Emissions from Pulsars in Binary Systems.

See AKERLOF, C. W., et al. A Search for Correlations of TeV Gamma Rays with Ultra–High-Energy Cosmic Rays.

See DE LA CALLE PÉREZ, I., et al. Search for High-Energy Gamma Rays from an X-Ray–Selected Blazar Sample.

KRICK, JESSICA E. Small-Scale Structure in the Galactic Interstellar Medium: Implications for Galaxy Cluster Studies. *Joel N. Bregman, Megan C. Novicki, Jessica E. Krick, & John S. Arabadjis.* 597, 399 (2003)

KRIMIGIS, S. M. Evidence for a Suprathermal Seed Population of Heavy Ions Accelerated by Interplanetary Shocks near 1 AU. *M. I. Desai, G. M. Mason, J. R. Dwyer, J. E. Mazur, R. E. Gold, S. M. Krimigis, C. W. Smith, & R. M. Skoug.* 588, 1149 (2003)

KRISCIUNAS, K. See GARNAVICH, P. M., et al. Discovery of the Low-Redshift Optical Afterglow of GRB 011121 and Its Progenitor Supernova SN 2001ke.

See ARAUJO-BETANCOR, S., et al. System Parameters of DW Ursae Majoris.

See STANEK, K. Z., et al. Spectroscopic Discovery of the Supernova 2003dh Associated with GRB 030329.

See MATHESON, T., et al. Photometry and Spectroscopy of GRB 03029 and Its Associated Supernova 2003dh: The First Two Months.

KRISCIUNAS, KEVIN. See TONRY, JOHN L., et al. Cosmological Results from High-z Supernovae.

KRISHNAMURTHI, ANITA. *Chandra, Extreme Ultraviolet Explorer,* and Very Large Array Observations of the Active Binary System σ^2 Coronae Borealis. *Rachel A. Osten, Thomas R. Ayres, Alexander Brown, Jeffrey L. Linsky, & Anita Krishnamurthi.* 582, 1073 (2003)

KRISS, GERARD A. See GABEL, JACK R., et al. The Ionized Gas and Nuclear Environment in NGC 3783. II. Averaged *Hubble Space Telescope*/STIS and *Far Ultraviolet Spectroscopic Explorer* Spectra.

See GABEL, JACK R., et al. The Ionized Gas and Nuclear Environment in NGC 3783. III. Detection of a Decreasing Radial Velocity in an Intrinsic Ultraviolet Absorber.

See NETZER, HAGAI, et al. The Ionized Gas and Nuclear Environment in NGC 3783. IV. Variability and Modeling of the 900 Kilosecond *Chandra* Spectrum.

KRIST, J. See TRAN, H. D., et al. Advanced Camera for Surveys Observations of Young Star Clusters in the Interacting Galaxy UGC 10214.

KRIST, J. E. See BOUWENS, R. J., et al. Star Formation at $z \sim 6$: i-Dropouts in the Advanced Camera for Surveys Guaranteed Time Observation Fields.

See MEURER, GERHARDT R., et al. The Discovery of Globular Clusters in the Protospiral Galaxy NGC 2915: Implications for Hierarchical Galaxy Evolution.

KRIST, JOHN. See BLAKESLEE, JOHN P., et al. Discovery of Two Distant Type Ia Supernovae in the Hubble Deep Field–North with the Advanced Camera for Surveys.

KRIST, JOHN E. *Hubble Space Telescope* WFPC2 Imaging of the Disk and Jet of HV Tauri C. *Karl R. Stapelfeldt, François Ménard, Alan M. Watson, John E. Krist, Catherine Dougados, Deborah L. Padgett, & Wolfgang Brandner.* 589, 410 (2003)

KROLIK, J. H. Local Three-dimensional Simulations of Magnetorotational Instability in Radiation-dominated Accretion Disks. *N. J. Turner, J. M. Stone, J. H. Krolik, & T. Sano.* 593, 992 (2003)

KROLIK, JULIAN H. Magnetically Driven Accretion Flows in the Kerr Metric. I. Models and Overall Structure. *Jean-Pierre De Villiers, John F. Hawley, & Julian H. Krolik.* 599, 1238 (2003)

KRONGOLD, Y. See STEPANIAN, J. A., et al. A Multiwavelength Study of Narrow-Line Seyfert 1 Galaxies from the Second Byurakan Survey.

Toward a Self-Consistent Model of the Ionized Absorber in NGC 3783. *Y. Krongold, F. Nicastro, N. S. Brickhouse, M. Elvis, D. A. Liedahl, & S. Mathur.* 597, 832 (2003)

KROUPA, PAVEL. Galactic-Field Initial Mass Functions of Massive Stars. *Pavel Kroupa & Carsten Weidner.* 598, 1076 (2003)

KRUCKER, S. See LIN, R. P., et al. *RHESSI* Observations of Particle Acceleration and Energy Release in an Intense Solar Gamma-Ray Line Flare.

First Gamma-Ray Images of a Solar Flare. *G. J. Hurford, R. A. Schwartz, S. Krucker, R. P. Lin, D. M. Smith, & N. Vilmer.* 595, L77 (2003)

Radio and Hard X-Ray Images of High-Energy Electrons in an X-Class Solar Flare. *S. M. White, S. Krucker, K. Shibasaki, T. Yokoyama, M. Shimojo, & M. R. Kundu.* 595, L111 (2003)

KRUCKER, SÄM. Hard X-Ray Source Motions in the 2002 July 23 Gamma-Ray Flare. *Säm Krucker, G. J. Hurford, & R. P. Lin.* 595, L103 (2003)

RHESSI Hard X-Ray Imaging Spectroscopy of the Large Gamma-Ray Flare of 2002 July 23. *A. Gordon Emslie, Eduard P. Kontar, Säm Krucker, & Robert P. Lin.* 595, L107 (2003)

KRUK, J. W. See WAKKER, B. P., et al. The *Far Ultraviolet Spectroscopic Explorer* Survey of O VI Absorption in and near the Galaxy.

KRUK, JEFFREY W. Interstellar Deuterium, Nitrogen, and Oxygen Abundances toward GD 246, WD 2331−475, HZ 21, and Lanning 23: Results from the *FUSE* Mission. *Cristina M. Oliveira, Guillaume Hébrard, J. Christopher Howk, Jeffrey W. Kruk, Pierre Chayer, & H. Warren Moos.* 587, 235 (2003)

KRZESIŃSKI, J. See MUKADEM, ANJUM S., et al. Constraining the Evolution of ZZ Ceti.

KRZESINSKI, JUREK. See SCHMIDT, GARY D., et al. Magnetic White Dwarfs from the Sloan Digital Sky Survey: The First Data Release.

KSENOFONTOV, L. T. See ENOMOTO, R., et al. Search for TeV Gamma Rays from SN 1987A in 2001.

KUAN, YI-JEHNG. Interstellar Glycine. *Yi-Jehng Kuan, Steven B. Charnley, Hui-Chun Huang, Wei-Ling Tseng, & Zbigniew Kisiel.* 593, 848 (2003)

KUBIAK, M. See SCHECHTER, PAUL L., et al. Microlensing of Relativistic Knots in the Quasar HE 1104−1805 AB.

KUBIČELA, A. The Line Emission Region in III Zw 2: Kinematics and Variability. *L. Č. Popović, E. G. Mediavilla, E. Bon, N. Stanić, & A. Kubičela.* 599, 185 (2003)

KUBO, H. See ENOMOTO, R., et al. Search for TeV Gamma Rays from SN 1987A in 2001.

KUBO, M. The Evolution of Vector Magnetic Fields in an Emerging Flux Region. *M. Kubo, T. Shimizu, & B. W. Lites.* 595, 465 (2003)

KUBOTA, AYA. Accretion Disk Spectra of Ultraluminous X-Ray Sources in Nearby Spiral Galaxies and Galactic Superluminal Jet Sources. *Ken Ebisawa, Piotr Zycki, Aya Kubota, Tsunefumi Mizuno, & Ken-ya Watarai.* 597, 780 (2003)

KUCHNER, MARC J. The Geometry of Resonant Signatures in Debris Disks with Planets. *Marc J. Kuchner & Matthew J. Holman.* 588, 1110 (2003)

Notch Filter Masks: Practical Image Masks for Planet-finding Coronagraphs. *Marc J. Kuchner & David N. Spergel.* 594, 617 (2003)

Volatile-rich Earth-Mass Planets in the Habitable Zone. *Marc J. Kuchner.* 596, L105 (2003)

Detection of Close-In Extrasolar Giant Planets Using the Fourier-Kelvin Stellar Interferometer. *William C. Danchi, Drake Deming, Marc J. Kuchner, & Sara Seager.* 597, L57 (2003)

KUDOH, TAKAHIRO. Magnetic Reconnection Triggered by the Parker Instability in the Galaxy: Two-Dimensional Numerical Magnetohydrodynamic Simulations and Application to the Origin of X-Ray Gas in the Galactic Halo. *Syuniti Tanuma, Takaaki Yokoyama, Takahiro Kudoh, & Kazunari Shibata.* 582, 215 (2003)

Nonlinear Hydromagnetic Wave Support of a Stratified Molecular Cloud. *Takahiro Kudoh & Shantanu Basu.* 595, 842 (2003)

KUDRITZKI, ROLF P. A New Extragalactic Distance Determination Method Using Flux-weighted Gravity of Late B and Early A Supergiants. *Rolf P. Kudritzki, Fabio Bresolin, & Nobert Przybilla.* 582, L83 (2003)

KUDRITZKI, ROLF-PETER. Quantitative Spectral Analysis of Early B-Type Supergiants in the Sculptor Galaxy NGC 300. *Miguel Alejandro Urbaneja, Aremio Herrero, Fabio Bresolin, Rolf-Peter Kudritzki, Wolfgang Gieren, & Joachim Puls.* 584, L73 (2003)

KUDRYAVTSEVA, N. A. See BÖTTCHER, M., et al. Coordinated Multiwavelength Observations of BL Lacertae in 2000.

KUEHN, K. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

KÜKER, MANFRED. Magnetic Star-Disk Coupling in Classical T Tauri Systems. *Manfred Küker, Thomas Henning, & Günther Rüdiger.* 589, 397 (2003)

KUHN, J. R. Parametric Dwarf Spheroidal Tidal Interaction. *Jean-Julien Fleck & J. R. Kuhn.* 592, 147 (2003)

KUIJKEN, KONRAD. See LABBÉ, IVO, et al. Large Disklike Galaxies at High Redshift.

KUIPER, T. B. H. The Discovery of H_2O Maser Emission in Seven Active Galactic Nuclei and at High Velocities in the Circinus Galaxy. *L. J. Greenhill, P. T. Kondrakto, J. E. J. Lovell, T. B. H. Kuiper, J. M. Moran, D. L. Jauncey, & G. P. Baines.* 582, L11 (2003)

KULESA, CRAIG. CO Emission from Disks around AB Aurigae and HD 141569: Implications for Disk Structure and Planet Formation Timescales. *Sean D. Brittain, Terrence W. Rettig, Theodore Simon, Craig Kulesa, Michael A. DiSanti, & Neil Dello Russo.* 588, 535 (2003)

KULKARNI, S. R. See PRICE, P. A., et al. GRB 010921: Strong Limits on an Underlying Supernova from the *Hubble Space Telescope*.

See BARTH, AARON J., et al. Optical Spectropolarimetry of the GRB 020813 Afterglow.

Continued Radio Monitoring of the Gamma-Ray Burst 991208. *T. J. Galama, D. A. Frail, R. Sari, E. Berger, G. B. Taylor, & S. R. Kulkarni.* 585, 899 (2003)

The Quiescent Counterpart of the Soft Gamma-Ray Repeater SGR 0526−66. *S. R. Kulkarni, D. L. Kaplan, H. L. Marshall, D. A. Frail, T. Murakami, & D. Yonetoku.* 585, 948 (2003)

Keck Spectroscopy and *Hubble Space Telescope* Imaging of GRB 000926: Probing a Host Galaxy at $z = 2.038$. *S. Castro, T. J. Galama, F. A. Harrison, J. A. Holtzman, J. S. Bloom, S. G. Djorgovski, & S. R. Kulkarni.* 586, 128 (2003)

See Fox, D. W., et al. Discovery of Early Optical Emission from GRB 021211.

See Galama, T. J., et al. *Hubble Space Telescope* and Ground-based Optical and Ultraviolet Observations of GRB 010222.

A Radio Flare from GRB 020405: Evidence for a Uniform Medium around a Massive Stellar Progenitor. *E. Berger, A. M. Soderberg, D. A. Frail, & S. R. Kulkarni.* 587, L5 (2003)

A Submillimeter and Radio Survey of Gamma-Ray Burst Host Galaxies: A Glimpse into the Future of Star Formation Studies. *E. Berger, L. L. Cowie, S. R. Kulkarni, D. A. Frail, H. Aussel, & A. J. Barger.* 588, 99 (2003)

The Optical Counterpart of the Isolated Neutron Star RX J1605.3+3249. *D. L. Kaplan, S. R. Kulkarni, & M. H. van Kerkwijk.* 588, L33 (2003)

See Price, P. A., et al. Discovery of GRB 020405 and Its Late Red Bump.

A Standard Kinetic Energy Reservoir in Gamma-Ray Burst Afterglows. *E. Berger, S. R. Kulkarni, & D. A. Frail.* 590, 379 (2003)

See Frail, D. A., et al. The Broadband Afterglow of GRB 980703.

The Nearby Neutron Star RX J0720.4−3125 from Radio to X-Rays. *D. L. Kaplan, M. H. van Kerkwijk, H. L. Marshall, B. A. Jacoby, S. R. Kulkarni, & D. A. Frail.* 590, 1008 (2003)

The Redshift and the Host Galaxy of GRB 980613: A Gammay-Ray Burst from a Merger-induced Starburst? *S. G. Djorgovski, J. S. Bloom, & S. R. Kulkarni.* 591, L13 (2003)

Gamma-Ray Burst Energetics and the Gamma-Ray Burst Hubble Diagram: Promises and Limitations. *J. S. Bloom, D. A. Frail, & S. R. Kulkarni.* 594, 674 (2003)

A Radio Survey of Type Ib and Ic Supernovae: Searching for Engine-driven Supernovae. *E. Berger, S. R. Kulkarni, D. A. Frail, & A. M. Soderberg.* 599, 408 (2003)

The First Two Host Galaxies of X-Ray Flashes: XRF 011030 and XRF 020427. *J. S. Bloom, D. Fox, P. G. van Dokkum, S. R. Kulkarni, E. Berger, S. G. Djorgovski, & D. A. Frail.* 599, 957 (2003)

PSR J1909−3744: A Binary Millisecond Pulsar with a Very Small Duty Cycle. *B. A. Jacoby, M. Bailes, M. H. van Kerkwijk, S. Ord, A. Hotan, S. R. Kulkarni, & S. B. Anderson.* 599, L99 (2003)

Kulkarni, Shri R. Millimeter Observations of GRB 030329: Continued Evidence for a Two-Component Jet. *Kartik Sheth, Dale A. Frail, Stephen White, Mousumi Das, Frank Bertoldi, Fabian Walter, Shri R. Kulkarni, & Edo Berger.* 595, L33 (2003)

Kumar, M. S. Nanda. A Ring-Shaped Embedded Young Stellar (Proto)Cluster. *M. S. Nanda Kumar, D. K. Ojha, & C. J. Davis.* 598, 1107 (2003)

Kumar, P. See Schaefer, Bradley E., et al. GRB 021004: A Massive Progenitor Star Surrounded by Shells.

The Effect of Angular Structure of Gamma-Ray Burst Outflows on the Afterglow Emission. *A. Panaitescu & P. Kumar.* 592, 390 (2003)

Kumar, Pawan. X-Ray Lines from Gamma-Ray Bursts. *Pawan Kumar & Ramesh Narayan.* 584, 895 (2003)

The Evolution of a Structured Relativistic Jet and Gamma-Ray Burst Afterglow Light Curves. *Pawan Kumar & Jonathan Granot.* 591, 1075 (2003)

Constraining the Structure of Gamma-Ray Burst Jets through the Afterglow Light Curves. *Jonathan Granot & Pawan Kumar.* 591, 1086 (2003)

Kuncic, Zdenka. Submillimeter Observations of a Sample of Broad Absorption Line Quasars. *Geraint F. Lewis, S. C. Chapman, & Zdenka Kuncic.* 596, L35 (2003)

Kundić, Tomislav. Rapid Brightness Fluctuations in Q0957+561A,B: Microlensing or Seeing? *Wesley N. Colley, Irwin I. Shapiro, Jennifer Pegg, Edwin L. Turner, Tomislav Kundić, Karen Loomis, N. C. Hastings, & Russet McMillan.* 588, 711 (2003)

Kundu, A. Modeling the Dynamical Evolution of the M87 Globular Cluster System. *E. Vesperini, S. E. Zepf, A. Kundu, & K. M. Ashman.* 593, 760 (2003)

Kundu, Arunav. The Low Mass X-Ray Binary–Globular Cluster Connection. II. NGC 4472 X-Ray Source Properties and Source Catalogs. *Thomas J. Maccarone, Arunav Kundu, & Stephen E. Zepf.* 586, 814 (2003)

Some Constraints on the Effects of Age and Metallicity on the Low-Mass X-Ray Binary Formation Rate. *Arunav Kundu, Thomas J. Maccarone, Stephen E. Zepf, & Thomas H. Puzia.* 589, L81 (2003)

Low-Mass X-Ray Binaries and Globular Clusters in Early-Type Galaxies. *Craig L. Sarazin, Arunav Kundu, Jimmy A. Irwin, Gregory R. Sivakoff, Elizabeth L. Blanton, & Scott W. Randall.* 595, 743 (2003)

Kundu, M. R. Quasi-periodic Pulsations in a Solar Microwave Burst. *V. V. Grechnev, S. M. White, & M. R. Kundu.* 588, 1163 (2003)

Coronal Structure of a Flaring Region and Associated Coronal Mass Ejection. *P. K. Manoharan & M. R. Kundu.* 592, 597 (2003)

Radio and Hard X-Ray Images of High-Energy Electrons in an X-Class Solar Flare. *S. M. White, S. Krucker, K. Shibasaki, T. Yokoyama, M. Shimojo, & M. R. Kundu.* 595, L111 (2003)

Kunieda, H. X-Ray–Extreme Ultraviolet Simultaneous Observations of NGC 5548: Fast Extreme Ultraviolet Dip without X-Ray Variation. *Y. Haba, H. Kunieda, K. Misaki, Y. Terashima, J. S. Kaastra, R. Mewe, A. C. Fabian, & K. Iwasawa.* 599, 949 (2003)

Kunkel, William E. See Dinescu, Dana I., et al. Absolute Proper Motions to $B \sim 22.5$. V. Detection of Sagittarius Dwarf Spheroidal Debris in the Direction of the Galactic Anticenter: Erratum (ApJ, 575, L67 [2002]).

Kuno, Nario. A Multitransition CO Study of the Antennae Galaxies NGC 4038/9. *Ming Zhu, E. R. Seaquist, & Nario Kuno.* 588, 243 (2003)

CO Molecular Gas in Infrared-luminous Galaxies. *Lihong Yao, E. R. Seaquist, Nario Kuno, & Loretta Dunne.* 588, 771 (2003)

CO Molecular Gas in Infrared Luminous Galaxies: Erratum (ApJ, 588, 771 [2003]). *Lihong Yao, E. R. Seaquist, Nario Kuno, & Loretta Dunne.* 597, 1271 (2003) (Orig. paper in 588, 771 (2003))

Kunszt, Peter A. See Szalay, Alexander S., et al. Karhunen-Loève Estimation of the Power Spectrum Parameters from the Angular Distribution of Galaxies in Early Sloan Digital Sky Survey Data.

Kunth, D. Stellar Masses of Luminous Compact Blue Galaxies at Redshifts $z = 0.4$–1.2. *R. Guzmán, G. Östlin, D. Kunth, M. A. Bershady, D. C. Koo, & M. A. Pahre.* 586, L45 (2003)

Lyα Emission in Starbursts: Implications for Galaxies at High Redshift. *J. M. Mas-Hesse, D. Kunth, G. Tenorio-Tagle, C. Leitherer, R. J. Terlevich, & E. Terlevich.* 598, 858 (2003)

Kunth, Daniel. The First Deep Advanced Camera for Surveys Lyα Images of Local Starburst Galaxies. *Daniel Kunth, Claus Leitherer, J. Miguel Mas-Hesse, Göran Östlin, & Artashes Petrosian.* 597, 263 (2003)

Kuntschner, Harald. Evidence for an Intermediate-Age, Metal-rich Population of Globular Clusters in NGC 4365. *Søren S. Larsen, Jean P. Brodie, Michael A. Beasley, Duncan A. Forbes, Markus Kissler-Patig, Harald Kuntschner, & Thomas H. Puzia.* 585, 767 (2003)

Kuntz, K. D. *Chandra* Observation of Luminous and Ultraluminous X-Ray Binaries in M101. *K. Mukai, W. D. Pence, S. L. Snowden, & K. D. Kuntz.* 582, 184 (2003)

Diffuse X-Ray Emission from M101. *K. D. Kuntz, S. L. Snowden, W. D. Pence, & K. Mukai.* 588, 264 (2003)

Kuo, C. See Goldstein, J. H., et al. Estimates of Cosmological Parameters Using the Cosmic Microwave Background Angular Power Spectrum of ACBAR.

Kuo, C. L. See Runyan, M. C., et al. ACBAR: The Arcminute Cosmology Bolometer Array Receiver.

Kuo, Ping-Hung. Diagnostic Signatures of Radio and Hard X-Ray Emission on Particle Acceleration Processes in the Coma Cluster. *Ping-Hung Kuo, Chorng-Yuan Hwang, & Wing-Huen Ip.* 594, 732 (2003)

Kuraszkiewicz, Joanna K. The Far-Infrared Spectral Energy Distributions of X-Ray–selected Active Galaxies. *Joanna K. Kuraszkiewicz, Belinda J. Wilkes, Eric J. Hooper, Kim K. McLeod, Kenneth Wood, Jon Bjorkman, Kisha M. Delain, David H. Hughes, Martin S. Elvis, Chris D. Impey, Carol J. Lonsdale, Matt A. Malkan, Jonathan C. McDowell, & Barbara Whitney.* 590, 128 (2003)

Kurita, Mikio. See Jiang, Zhibo, et al. A Near-Infrared Study of the Star-Forming Region S269.

Kurokawa, Hiroki. Evolution of Conjugate Footpoints inside Flare Ribbons during a Great Two-Ribbon Flare on 2001 April 10. *Ayumi Asai, Takako T. Ishii, Hiroki Kurokawa, Takaaki Yokoyama, & Masumi Shimojo.* 586, 624 (2003)

Kurpis, P. See Colavita, M., et al. Observations of DG Tauri with the Keck Interferometer.

Kurtanidze, O. M. See Böttcher, M., et al. Coordinated Multiwavelength Observations of BL Lacertae in 2000.

KURTZ, D. W. See MUKADEM, ANJUM S., et al. Constraining the Evolution of ZZ Ceti.

KURTZ, S. Resolution of Distance Ambiguities of Inner Galaxy Massive Star Formation Regions. I. *C. Watson, E. Araya, M. Sewilo, E. Churchwell, P. Hofner, & S. Kurtz.* 587, 714 (2003)

KUSCHNIG, RAINER. Scattered Light from Close-in Extrasolar Planets: Prospects of Detection with the *MOST* Satellite. *Daniel Green, Jaymie Matthews, Sara Seager, & Rainer Kuschnig.* 597, 590 (2003)

KUSHIDA, J. See ENOMOTO, R., et al. Search for TeV Gamma Rays from SN 1987A in 2001.

KUSUNOSE, MASAAKI. The Electron Spectrum in 3C 279 and the Observed Emission Spectrum. *Masaaki Kusunose, Fumio Takahara, & Tomohiro Kato.* 592, L5 (2003)

KUULKERS, E. The Complete Z-Diagram of LMC X-2. *A. P. Smale, J. Homan, & E. Kuulkers.* 590, 1035 (2003)

KWAN, JOHN. He I λ10830 as a Probe of Winds in Accreting Young Stars. *Suzan Edwards, William Fischer, John Kwan, Lynne Hillenbrand, & A. K. Dupree.* 599, L41 (2003)

KWOK, SUN. Neutral Carbon in Post–Asymptotic Giant Branch Stars and Planetary Nebulae. *Tatsuhiko I. Hasegawa & Sun Kwok.* 585, 475 (2003)

KWON, S. M. Discovery of Dust Trail of *STARDUST* Comet Sample Return Mission Target: 81P/Wild 2. *M. Ishiguro, S. M. Kwon, Y. Sarugaku, S. Hasegawa, F. Usui, S. Nishiura, Y. Nakada, & H. Yano.* 589, L101 (2003)

LABACIREN. See AMENOMORI, M., et al. Multi-TeV Gamma-Ray Flares from Markarian 421 in 2000 and 2001 Observed with the Tibet Air Shower Array.

LA BARBERA, F. Age, Metallicity, and Star Formation History of Cluster Galaxies at $z \sim 0.3$. *P. Merluzzi, F. La Barbera, M. Massarotti, G. Busarello, & M. Capaccioli.* 589, 147 (2003)

On the Invariant Distribution of Galaxies in the r_e-$\langle\mu\rangle_e$ Plane out to $z = 0.64$. *F. La Barbera, G. Busarello, P. Merluzzi, M. Massarotti, & M. Capaccioli.* 595, 127 (2003)

LABBÉ, I. See DADDI, E., et al. Detection of Strong Clustering of Red K-selected Galaxies at $2 < z_{\rm phot} < 4$ in the Hubble Deep Field–South.

LABBÉ, IVO. See FRANX, MARIJN, et al. A Significant Population of Red, Near-Infrared–selected High-Redshift Galaxies.

See VAN DOKKUM, PIETER G., et al. Spectroscopic Confirmation of a Substantial Population of Luminous Red Galaxies at Redshifts $z \gtrsim 2$.

Large Disklike Galaxies at High Redshift. *Ivo Labbé, Gregory Rudnick, Marijn Franx, Emanuele Daddi, Pieter G. van Dokkum, Natascha M. Förster Schreiber, Konrad Kuijken, Alan Moorwood, Hans-Walter Rix, Huub Röttgering, Ignacio Trujillo, Arjen van der Wel, Paul van der Werf, & Lottie van Starkenburg.* 591, L95 (2003)

See RUDNICK, GREGORY, et al. The Rest-Frame Optical Luminosity Density, Color, and Stellar Mass Density of the Universe from $z = 0$ to $z = 3$.

LABELLE, J. A Model of Zebra Emission in Solar Type IV Radio Bursts. *J. LaBelle, R. A. Treumann, P. H. Yoon, & M. Karlicky.* 593, 1195 (2003)

LABHARDT, LUKAS. The Cepheid Distance to NGC 5236 (M83) with the ESO Very Large Telescope. *Frank Thim, G. A. Tammann, A. Saha, A. Dolphin, Allan Sandage, E. Tolstoy, & Lukas Labhardt.* 590, 256 (2003)

LACEY, C. G. What Shapes the Luminosity Function of Galaxies? *A. J. Benson, R. G. Bower, C. S. Frenk, C. G. Lacey, C. M. Baugh, & S. Cole.* 599, 38 (2003)

LACEY, CEDRIC G. See BERLIND, ANDREAS A., et al. The Halo Occupation Distribution and the Physics of Galaxy Formation.

On the Origin of Intracluster Entropy. *G. Mark Voit, Michael L. Balogh, Richard G. Bower, Cedric G. Lacey, & Greg L. Bryan.* 593, 272 (2003)

LACOMBE, C. Electron Properties and Coulomb Collisions in the Solar Wind at 1 AU: *WIND* Observations. *C. Salem, D. Hubert, C. Lacombe, S. D. Bale, A. Mangeney, D. E. Larson, & R. P. Lin.* 585, 1147 (2003)

LACOMBE, F. See GENZEL, R., et al. The Stellar Cusp around the Supermassive Black Hole in the Galactic Center.

LACOUR, S. See ANDRÉ, M. K., et al. Oxygen Gas-Phase Abundance Revisited.

Far Ultraviolet Spectroscopic Explorer Survey of the Local Interstellar Medium within 200 Parsecs. *N. Lehner, E. B. Jenkins, C. Gry, H. W. Moos, P. Chayer, & S. Lacour.* 595, 858 (2003)

LACY, J. H. Kinematics of Ultracompact H II Regions Revealed: High Spatial and Spectral Resolution Mapping of the 12.8 Micron [Ne II] Line in Monoceros R2. *D. T. Jaffe, Q. Zhu, J. H. Lacy, & M. Richter.* 596, 1053 (2003)

Propane on Titan. *H. G. Roe, T. K. Greathouse, M. J. Richter, & J. H. Lacy.* 597, L65 (2003)

LACY, MARK. See REULAND, MICHIEL, et al. Giant Lyα Nebulae Associated with High-Redshift Radio Galaxies.

LADA, C. J. A Census of the Young Cluster IC 348. *K. L. Luhman, John R. Stauffer, A. A. Muench, G. H. Rieke, E. A. Lada, J. Bouvier, & C. J. Lada.* 593, 1093 (2003)

LADA, CHARLES J. The Dynamical State of Barnard 68: A Thermally Supported, Pulsating Dark Cloud. *Charles J. Lada, Edwin A. Bergin, João F. Alves, & Tracy L. Huard.* 586, 286 (2003)

Envelope Structure of Starless Core L694-2 Derived from a Near-Infrared Extinction Map. *Daniel W. A. Harvey, David J. Wilner, Charles J. Lada, Philip C. Myers, & Joao F. Alves.* 598, 1112 (2003)

LADA, E. A. A Census of the Young Cluster IC 348. *K. L. Luhman, John R. Stauffer, A. A. Muench, G. H. Rieke, E. A. Lada, J. Bouvier, & C. J. Lada.* 593, 1093 (2003)

LÄHTEENMÄKI, A. Testing of Inverse Compton Models for Active Galactic Nuclei with Gamma-Ray and Radio Observations. *A. Lähteenmäki & E. Valtaoja.* 590, 95 (2003)

LAGACHE, G. Predictions for Cosmological Infrared Surveys from Space with the Multiband Imaging Photometer for *SIRTF*. *H. Dole, G. Lagache, & J.-L. Puget.* 585, 617 (2003)

LAGANI, P. The Puzzling Dynamical Status of the Core of the Globular Cluster NGC 6752. *F. R. Ferraro, A. Possenti, E. Sabbi, P. Lagani, R. T. Rood, N. D'Amico, & L. Origlia.* 595, 179 (2003)

LAGRANGE, A.-M. See FELDT, M., et al. Discovery of a Candidate for the Central Star of the Ultracompact H II Region G5.89−0.39.

LAI, DONG. Transfer of Polarized Radiation in Strongly Magnetized Plasmas and Thermal Emission from Magnetars: Effect of Vacuum Polarization. *Dong Lai & Wynn C. G. Ho.* 588, 962 (2003)

Warping of Accretion Disks with Magnetically Driven Outflows: A Possible Origin for Jet Precession. *Dong Lai.* 591, L119 (2003)

Atmospheres and Spectra of Strongly Magnetized Neutron Stars. III. Partially Ionized Hydrogen Models. *Wynn C. G. Ho, Dong Lai, Alexander Y. Potekhin, & Gilles Chabrier.* 599, 1293 (2003)

LAI, SHIH-PING. The High Angular Resolution Measurement of Ion and Neutral Spectra as a Probe of the Magnetic Field Structure in DR 21 (OH). *Shih-Ping Lai, T. Velusamy, & W. D. Langer.* 596, L239 (2003)

Interferometric Mapping of Magnetic Fields in Star-Forming Regions. III. Dust and CO Polarization in DR 21(OH). *Shih-Ping Lai, José M. Girart, & Richard M. Crutcher.* 598, 392 (2003)

LAINELA, M. See BÖTTCHER, M., et al. Coordinated Multiwavelength Observations of BL Lacertae in 2000.

LAIRD, CLAUDE M. Ozone Depletion from Nearby Supernovae. *Neil Gehrels, Claude M. Laird, Charles H. Jackman, John K. Cannizzo, Barbara J. Mattson, & Wan Chen.* 585, 1169 (2003)

LAIRD, R. W. See ATKINS, R., et al. Observation of TeV Gamma Rays from the Crab Nebula with Milagro Using a New Background Rejection Technique.

LAMAGNA, L. See BATTISTELLI, E. S., et al. Triple Experiment Spectrum of the Sunyaev-Zel'dovich Effect in the Coma Cluster: H_0.

LAMB, D. Q. See BLANTON, MICHAEL R., et al. The Broadband Optical Properties of Galaxies with Redshifts $0.02 < z < 0.22$.

See DURSI, L. J., et al. The Response of Model and Astrophysical Thermonuclear Flames to Curvature and Stretch.

See CREW, G. B., et al. *HETE-2* Localization and Observation of the Bright, X-Ray–rich Gamma-Ray Burst GRB 021211.

See HOPKINS, A. M., et al. Star Formation Rate Indicators in the Sloan Digital Sky Survey.

LAMB, DON Q. See GOMEZ, PERCY L., et al. Galaxy Star Formation as a Function of Environment in the Early Data Release of the Sloan Digital Sky Survey.

See BAHCALL, NETA A., et al. The Cluster Mass Function from Early Sloan Digital Sky Survey Data: Cosmological Implications.

See EISENSTEIN, DANIEL J., et al. Average Spectra of Massive Galaxies in the Sloan Digital Sky Survey.

Sloan Digital Sky Survey Catalog of Stars in the Draco Dwarf Spheroidal Galaxy. *Heather A. Rave, Chongshan Zhao, Heidi Jo Newberg, Brian Yanny, Donald P. Schneider, J. Brinkman, & Don Q. Lamb.* 145, 245 (2003)

See SZALAY, ALEXANDER S., et al. Karhunen-Loève Estimation of the Power Spectrum Parameters from the Angular Distribution of Galaxies in Early Sloan Digital Sky Survey Data.

See SCHMIDT, GARY D., et al. Magnetic White Dwarfs from the Sloan Digital Sky Survey: The First Data Release.

See NEWBERG, HEIDI JO, et al. Sagittarius Tidal Debris 90 kiloparsecs from the Galactic Center.

LAMB, DONALD Q. The X-Ray Afterglows of GRB 020813 and GRB 021004 with *Chandra* HETGS: Possible Evidence for a Supernova prior to GRB 020813. *Nathanial R. Butler, Herman L. Marshall, George R. Ricker, Roland K. Vanderspek, Peter G. Ford, Geoffrey B. Crew, Donald Q. Lamb, & J. Garrett Jernigan.* 597, 1010 (2003)

LAMB, R. C. Three New Long-Period X-Ray Pulsars Discovered in the Small Magellanic Cloud. *D. J. Macomb, D. W. Fox, R. C. Lamb, & T. A. Prince.* 584, L79 (2003)

See AKERLOF, C. W., et al. A Search for Correlations of TeV Gamma Rays with Ultra–High-Energy Cosmic Rays.

Discovery of a Possible Anomalous X-Ray Pulsar in the Small Magellanic Cloud: Addenudum (ApJ, 574, L29 [2002]). *R. C. Lamb, D. W. Fox, D. J. Macomb, & T. A. Prince.* 599, L115 (2003) (Orig. paper in 574, L29 (2002))

LAMB, S. A. See MCDOWELL, J. C., et al. *Chandra* Observations of Extended X-Ray Emission in Arp 220.

LAMBERT, DAVID L. An Ultrahigh-Resolution Survey of the Interstellar ^{7}Li/^{6}Li Isotope Ratio in the Solar Neighborhood. *David C. Knauth, S. R. Federman, & David L. Lambert.* 586, 268 (2003)

Further Evidence for Chemical Fractionation from Ultraviolet Observations of Carbon Monoxide. *S. R. Federman, David L. Lambert, Yaron Sheffer, Jason A. Cardelli, B.-G. Andersson, Ewine F. van Dishoeck, & J. Zsargó.* 591, 986 (2003)

Non-LTE Model Atmospheres for Late-Type Stars. II. Restricted Non-LTE Calculations for a Solar-like Atmosphere. *Carlos Allende Prieto, Ivan Hubeny, & David L. Lambert.* 591, 1192 (2003)

Non-LTE Model Atmospheres for Late-Type Stars. I. A Collection of Data for Light Neutral and Singly Ionized Atoms. *Carlos Allende Prieto, David L. Lambert, Ivan Hubeny, & Thierry Lanz.* 147, 363 (2003)

An Ultra–High-Resolution Survey of the Interstellar ^{7}Li/^{6}Li Isotope Ratio in the Solar Neighborhood: Erratum (ApJ, 586, 268 [2003]). *David C. Knauth, S. R. Federman, & David L. Lambert.* 594, 664 (2003) (Orig. paper in 586, 268 (2003))

Magnesium Isotopic Abundance Ratios in Cool Stars. *David Yong, David L. Lambert, & Inese I. Ivans.* 599, 1357 (2003)

LAMER, G. See GREINER, J., et al. GRB 011121: A Collimated Outflow into Wind-blown Surroundings.

LAMER, GEORG. Catching NGC 4051 in the Low State with *Chandra*. *Philip Uttley, Antonella Fruscione, Ian M. Hardy, & Georg Lamer.* 595, 656 (2003)

LAMERS, HENNEY J. G. L. M. The Missing Link in Star Cluster Evolution. *Richard de Grijs, Nate Bastian, & Henney J. G. L. M. Lamers.* 583, L17 (2003)

LAMING, J. M. Temperature Measurements in the Solar Transition Region Using N III Line Intensity Ratios. *R. Doron, G. A. Doschek, J. M. Laming, U. Feldman, & A. K. Bhatia.* 590, 1121 (2003)

LAMING, J. MARTIN. On the Magnetic Fields and Particle Acceleration in Cassiopeia A. *Jacco Vink & J. Martin Laming.* 584, 758 (2003)

Slow Temperature Equilibration behind the Shock Front of SN 1006. *Jacco Vink, J. Martin Laming, Ming Feng Gu, Andrew Rasmussen, & Jelle S. Kaastra.* 587, L31 (2003)

The Variability of the Solar Coronal Helium Abundance: Polar Coronal Holes Compared to the Quiet Sun. *J. Martin Laming & Uri Feldman.* 591, 1257 (2003)

On the Determination of Ejecta Structure and Explosion Asymmetry from the X-Ray Knots of Cassiopeia A. *J. Martin Laming & Una Hwang.* 597, 347 (2003)

Where Was the Iron Synthesized in Cassiopeia A? *Una Hwang & J. Martin Laming.* 597, 362 (2003)

LAMMER, H. Atmospheric Loss of Exoplanets Resulting from Stellar X-Ray and Extreme-Ultraviolet Heating. *H. Lammer, F. Selsis, I. Ribas, E. F. Guinan, S. J. Bauer, & W. W. Weiss.* 598, L121 (2003)

LAMOUREUX, J. I. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

LANDECKER, T. L. Radio Polarization from the Galactic Plane in Cygnus. *B. Uyaniker, T. L. Landecker, A. D. Gray, & R. Kothes.* 585, 785 (2003)

LANDI, E. Mass Motions and Plasma Properties in the 10^7 K Flare Solar Corona. *E. Landi, U. Feldman, D. E. Innes, & W. Curdt.* 582, 506 (2003)

CHIANTI—An Atomic Database for Emission Lines. IV. Proton Rates and Other Improvements. *P. R. Young, G. del Zanna, E. Landi, K. P. Dere, H. E. Mason, & M. Landini.* 144, 135 (2003)

On the Extreme-Ultraviolet/Ultraviolet Plasma Diagnostics for Nitrogen-like Ions from Spectra Obtained by *SOHO*/SUMER. *A. Mohan, E. Landi, & B. N. Dwivedi.* 582, 1162 (2003)

Atomic Data and Spectral Line Intensities for Si VII. *A. K. Bhatia & E. Landi.* 585, 587 (2003)

Nonthermal Mass Motions within the High-Temperature Plasmas above a Complex Solar Active Region. *U. Feldman, E. Landi, & W. Curdt.* 585, 1087 (2003)

Solving the Descrepancy between the Extreme-Ultraviolet and Microwave Observations of the Quiet Sun. *E. Landi & F. Chiuderi Drago.* 589, 1054 (2003)

Atomic Data and Emission-Line Intensities for Ca VII. *E. Landi & A. K. Bhatia.* 589, 1075 (2003)

Solar Flare Abundances of Potassium, Argon, and Sulphur. *K. J. H. Phillips, J. Sylwester, B. Sylwester, & E. Landi.* 589, L113 (2003)

SOHO-Ulysses Spring 2000 Quadrature: Coronal Diagnostic Spectrometer and SUMER Results. *S. Parenti, E. Landi, & B. J. I. Bromage.* 590, 519 (2003)

Properties of Solar Plasmas near Solar Maximum above Two Quiet Regions at Distances of 1.02–1.34 $R_\odot$. *E. Landi & U. Feldman.* 592, 607 (2003)

Atomic Data and Spectral Line Intensities for S X. *A. K. Bhatia & E. Landi.* 147, 409 (2003)

Free-Free Emission in the Far-Ultraviolet Spectral Range: A Resource for Diagnosing Solar and Stellar Flare Plasmas. *U. Feldman, E. Landi, G. A. Doschek, I. Dammasch, & W. Curdt.* 593, 1226 (2003)

Atomic Data and Spectral Line Intensities for S XI. *E. Landi & A. K. Bhatia.* 149, 249 (2003)

LANDINI, M. CHIANTI—An Atomic Database for Emission Lines. IV. Proton Rates and Other Improvements. *P. R. Young, G. del Zanna, E. Landi, K. P. Dere, H. E. Mason, & M. Landini.* 144, 135 (2003)

LANDOLT, ARLO U. A Quantitative Comparison of Small Magellanic Cloud, Large Magellanic Cloud, and Milky Way Ultraviolet to Near-Infrared Extinction Curves. *Karl D. Gordon, Geoffrey C. Clayton, K. A. Misselt, Arlo U. Landolt, & Michael J. Wolff.* 594, 279 (2003)

LANDSMAN, WAYNE. Blue Horizontal-Branch Stars in Old, Metal-rich Stellar Systems. *Ruth C. Peterson, Bruce W. Carney, Ben Dorman, Elizabeth M. Green, Wayne Landsman, James Liebert, Robert W. O'Connell, & Robert T. Rood.* 588, 299 (2003)

LANDT, HERMINE. What Types of Jets Does Nature Make? A New Population of Radio Quasars. *Paolo Padovani, Eric S. Perlman, Hermine Landt, Paolo Giommi, & Matteo Perri.* 588, 128 (2003)

LANE, B. F. Near-Infrared Interferometric Measurements of Herbig Ae/Be Stars. *J. A. Eisner, B. F. Lane, R. L. Akeson, L. A. Hillenbrand, & A. I. Sargent.* 588, 360 (2003)

LANE, BENJAMIN F. Bringing Closure to Microlensing Mass Measurement. *Neal Dalal & Benjamin F. Lane.* 589, 199 (2003)

LANE, WENDY M. Low-Redshift Damped Lyα Galaxies toward the Quasars B2 0827+243, PKS 0952+179, PKS 1127−145, and PKS 1629+120. *Sandhya M. Rao, Daniel B. Nestor, David A. Turnshek, Wendy M. Lane, Eric M. Monier, & Jacqueline Bergeron.* 595, 94 (2003)

LANG, C. Nonthermal Emission from the Arches Cluster (G0.121+0.017) and the Origin of γ-Ray Emission from 3EG J1746−2851. *F. Yusef-Zadeh, M. Nord, M. Wardle, C. Law, C. Lang, & T. J. W. Lazio.* 590, L103 (2003)

LANG, M. J. See HALL, T. A., et al. Search for TeV Emissions from Pulsars in Binary Systems.

LANGE, A. E. See CRILL, B. P., et al. BOOMERANG: A Balloon-Borne Millimeter-Wave Telescope and Total Power Receiver for Mapping Anisotropy in the Cosmic Microwave Background.

See RUNYAN, M. C., et al. ACBAR: The Arcminute Cosmology Bolometer Array Receiver.

See GOLDSTEIN, J. H., et al. Estimates of Cosmological Parameters Using the Cosmic Microwave Background Angular Power Spectrum of ACBAR.

See RUHL, J. E., et al. Improved Measurement of the Angular Power Spectrum of Temperature Anisotropy in the Cosmic Microwave Background from Two New Analyses of BOOMERANG Observations.

LANGER, N. How Massive Single Stars End Their Life. *A. Heger, C. L. Fryer, S. E. Woosley, N. Langer, & D. H. Hartmann.* 591, 288 (2003)

LANGER, NORBERT. The s-Process in Rotating Asymptotic Giant Branch Stars. *Falk Herwig, Norbert Langer, & Maria Lugaro.* 593, 1056 (2003)

LANGER, W. D. The High Angular Resolution Measurement of Ion and Neutral Spectra as a Probe of the Magnetic Field Structure in DR 21 (OH). *Shih-Ping Lai, T. Velusamy, & W. D. Langer.* 596, L239 (2003)

LANGER, WILLIAM. Structure Function Scaling in the Taurus and Perseus Molecular Cloud Complexes. *Paolo Padoan, Stanislav Boldyrev, William Langer, & Ake Nordlund.* 583, 308 (2003)

LANNES, A. See PRIEUR, J. L., et al. Speckle Observations of Composite Spectrum Stars. II. Differential Photometry of the Binary Components.

LANTERI, L. See BÖTTCHER, M., et al. Coordinated Multiwavelength Observations of BL Lacertae in 2000.

LANZ, T. A Tale of Two Stars: The Extreme O7 Iaf+ Supergiant AV 83 and the OC7.5 III((f)) Star AV 69. *D. John Hillier, T. Lanz, S. R. Heap, I. Hubeny, L. J. Smith, C. J. Evans, D. J. Lennon, & J. C. Bouret.* 588, 1039 (2003)

Quantitative Spectroscopy of O Stars at Low Metallicity: O Dwarfs in NGC 346. *J.-C. Bouret, T. Lanz, D. J. Hillier, S. R. Heap, I. Hubeny, D. J. Lennon, L. J. Smith, & C. J. Evans.* 595, 1182 (2003)

LANZ, THIERRY. A Grid of Non-LTE Line-Blanketed Model Atmospheres of O-Type Stars. *Thierry Lanz & Ivan Hubeny.* 146, 417 (2003)

A Grid of Non-LTE Line-blanketed Model Atmospheres of O-Type Stars: Erratum (ApJS, 146, 417 [2003]). *Thierry Lanz & Ivan Hubeny.* 147, 225 (2003) (Orig. paper in 146, 417 (2003))

Non-LTE Model Atmospheres for Late-Type Stars. I. A Collection of Data for Light Neutral and Singly Ionized Atoms. *Carlos Allende Prieto, David L. Lambert, Ivan Hubeny, & Thierry Lanz.* 147, 363 (2003)

LANZA, A. F. A Transient Heating Model for Coronal Structure and Dynamics. *D. Spadaro, A. F. Lanza, A. C. Lanzafame, J. T. Karpen, S. K. Antiochos, J. A. Klimchuk, & P. J. MacNeice.* 582, 486 (2003)

LANZAFAME, A. C. A Transient Heating Model for Coronal Structure and Dynamics. *D. Spadaro, A. F. Lanza, A. C. Lanzafame, J. T. Karpen, S. K. Antiochos, J. A. Klimchuk, & P. J. MacNeice.* 582, 486 (2003)

LANZETTA, KENNETH M. The Nature of Damped Lyα Absorbing Galaxies at $z \leq 1$: A Photometric Redshift Survey of Damped Lyα Absorbers. *Hsiao-Wen Chen & Kenneth M. Lanzetta.* 597, 706 (2003)

LAOR, ARI. The Baldwin Effect and Black Hole Accretion: A Spectral Principal Component Analysis of a Complete Quasar Sample. *Zhaohui Shang, Beverley J. Wills, Edward L. Robinson, D. Wills, Ari Laor, Bingrong Xie, & Juntao Yuan.* 586, 52 (2003)

On the Nature of Low-Luminosity Narrow-Line Active Galactic Nuclei. *Ari Laor.* 590, 86 (2003)

LA PAROLA, V. Spectral Visibility of the Nucleus of M33 in a *Chandra*/ACIS Observation. *V. La Parola, F. Damiani, G. Fabbiano, & G. Peres.* 583, 758 (2003)

LAPI, A. Sunyaev-Zel'dovich Effects from Quasars in Galaxies and Groups. *A. Lapi, A. Cavaliere, & G. De Zotti.* 597, L93 (2003)

LAPINOV, A. V. Precise Laboratory Frequencies of the $J = 1$–0 and $J = 2$–1 Rotational Transitions of $C^{18}O$. *G. Cazzoli, C. Puzzarini, & A. V. Lapinov.* 592, L95 (2003)

LARA, A. Coronal Mass Ejections and Solar Polarity Reversal. *N. Gopalswamy, A. Lara, S. Yashiro, & R. A. Howard.* 598, L63 (2003)

LARA, L. See TORRELLES, J. M., et al. Evidence for Evolution of the Outflow Collimation in Very Young Stellar Objects.

LARIONOV, V. M. See VALENTINI, G., et al. Optical and Near-Infrared Photometry of the Type Ia Supernova 2000E in NGC 6951.

See BÖTTCHER, M., et al. Coordinated Multiwavelength Observations of BL Lacertae in 2000.

LARIONOVA, E. G. See BÖTTCHER, M., et al. Coordinated Multiwavelength Observations of BL Lacertae in 2000.

LARKIN, J. See GHEZ, A. M., et al. The First Measurement of Spectral Lines in a Short-Period Star Bound to the Galaxy's Central Black Hole: A Paradox of Youth.

LARKIN, JAMES E. See FIGER, DONALD F., et al. High-Precision Stellar Radial Velocities in the Galactic Center.

LAROQUE, SAMUEL J. Sunyaev-Zeldovich Effect Imaging of MACS Galaxy Clusters at $z > 0.5$. *Samuel J. LaRoque, Marshall Joy, John E. Carlstrom, Harald Ebeling, Massimiliano Bonamente, Kyle S. Dawson, Alastair Edge, William L. Holzapfel, Amber D. Miller, Daisuke Nagai, Sandeep K. Patel, & Erik D. Reese.* 583, 559 (2003)

LAROSA, T. N. Mechanisms for the Origin of Turbulence in Non–Star-forming Clouds: The Translucent Cloud MBM 40. *Steven N. Shore, Loris Magnani, T. N. LaRosa, & Meredith N. McCarthy.* 593, 413 (2003)

LARRABEE, D. A. Lepton Acceleration by Relativistic Collisionless Magnetic Reconnection. *D. A. Larrabee, R. V. E. Lovelace, & M. M. Romanova.* 586, 72 (2003)

LARSEN, SØREN S. Evidence for an Intermediate-Age, Metal-rich Population of Globular Clusters in NGC 4365. *Søren S. Larsen, Jean P. Brodie, Michael A. Beasley, Duncan A. Forbes, Markus Kissler-Patig, Harald Kuntschner, & Thomas H. Puzia.* 585, 767 (2003)

On the Size Difference between Red and Blue Globular Clusters. *Soren S. Larsen & Jean P. Brodie.* 593, 340 (2003)

LARSON, D. E. Electron Properties and Coulomb Collisions in the Solar Wind at 1 AU: *WIND* Observations. *C. Salem, D. Hubert, C. Lacombe, S. D. Bale, A. Mangeney, D. E. Larson, & R. P. Lin.* 585, 1147 (2003)

LATHAM, D. W. See MATHESON, T., et al. Photometry and Spectroscopy of GRB 03029 and Its Associated Supernova 2003dh: The First Two Months.

LATHAM, DAVID W. On the Mass-Ratio Distribution of Spectroscopic Binaries. *Dorit Goldberg, Tsevi Mazeh, & David W. Latham.* 591, 397 (2003)

LATTANZIO, JOHN C. *s*-Process Nucleosynthesis in Asymptotic Giant Branch Stars: A Test for Stellar Evolution. *Maria Lugaro, Falk Herwig, John C. Lattanzio, Roberto Gallino, & Oscar Straniero.* 586, 1305 (2003)

LATTER, W. B. *Hubble Space Telescope*/NICMOS Near-Infrared Imaging of the Proto–Planetary Nebula OH 231.8+4.2. *C. A. Meakin, J. H. Bieging, W. B. Latter, J. L. Hora, & A. G. G. M. Tielens.* 585, 482 (2003)

LAUER, TOD R. See GEBHARDT, KARL, et al. Axisymmetric Dynamical Models of the Central Regions of Galaxies.

Red Galaxy Clustering in the NOAO Deep Wide-Field Survey. *Michael J. I. Brown, Arjun Dey, Buell T. Jannuzi, Tod R. Lauer, Glenn P. Tiede, & Valerie J. Mikles.* 597, 225 (2003)

LAUGHLIN, G. Branch, Spur, and Feather Formation in Spiral Galaxies. *S. Chakrabarti, G. Laughlin, & F. H. Shu.* 596, 220 (2003)

LAUGHLIN, GREGORY. Seven New Keck Planets Orbiting G and K Dwarfs. *R. Paul Butler, Geoffrey W. Marcy, Steven S. Vogt, Debra A. Fischer, Gregory W. Henry, Gregory Laughlin, & Jason T. Wright.* 582, 455 (2003)

On the Radii of Extrsolar Giant Planets. *Peter Bodenheimer, Gregory Laughlin, & Douglas N. C. Lin.* 592, 555 (2003)

LAUNHARDT, R. Magnetic Field Evolution in Bok Globules. *Sebastian Wolf, R. Launhardt, & T. Henning.* 592, 233 (2003)

LAUNILA, OLLI. Remarkable Changes in the Near-Infrared Spectrum of the Nova-like Variable V4332 Sagittarii. *Dipankar P. K. Banerjee, Watson P. Varricatt, Nagarhalli M. Ashok, & Olli Launila.* 598, L31 (2003)

LAUROESCH, J. T. Variable Na I Absorption toward ρ Leonis: Biased Neutral Formation in the Diffuse Interstellar Medium? *J. T. Lauroesch & David M. Meyer.* 591, L123 (2003)

The Homogeneity of Interstellar Krypton in the Galactic Disk. *Stefan I. B. Cartledge, David M. Meyer, & J. T. Lauroesch.* 597, 408 (2003)

LAUROESCH, JAMES. Origins of the Highly Ionized Gas along the Line of Sight toward HD 116852. *Andrew J. Fox, Blair D. Savage, Kenneth R. Sembach, Dirk Fabian, Philipp Richter, David M. Meyer, James Lauroesch, & J. Christopher Howk.* 582, 793 (2003)

LAUROESCH, JAMES T. On the Origin of the High-Ionization Intermediate-Velocity Gas toward HD 14434. *David C. Knauth, J. Christopher Howk, Kenneth R. Sembach, James T. Lauroesch, & David M. Meyer.* 592, 964 (2003)

LAURSEN, L. T. High-Precision Photometry of the Gamma-Ray Burst GRB 020813: The Smoothest Afterglow Yet. *L. T. Laursen & K. Z. Stanek.* 597, L107 (2003)

LAVAGETTO, G. *BeppoSAX* Serendipitous Discovery of the X-Ray Pulsar SAX J1802.7−2017. *G. Augello, R. Iaria, N. R. Robba, T. Di Salvo, L. Burderi, G. Lavagetto, & L. Stella.* 596, L63 (2003)

LAVAGNO, A. Gamma-Ray Bursts from Delayed Collapse of Neutron Stars to Quark Matter Stars. *Z. Berezhiani, I. Bombaci, A. Drago, F. Frontera, & A. Lavagno.* 586, 1250 (2003)

LAVILLONIÈRE, N. A Search for Small Kuiper Belt Objects by Stellar Occultations. *F. Roques, M. Moncuquet, N. Lavillonière, M. Auvergne, M. Chevreton, F. Colas, & J. Lecacheux.* 594, L63 (2003)

LAW, C. Nonthermal Emission from the Arches Cluster (G0.121+0.017) and the Origin of γ-Ray Emission from 3EG J1746−2851. *F. Yusef-Zadeh, M. Nord, M. Wardle, C. Law, C. Lang, & T. J. W. Lazio.* 590, L103 (2003)

LAW, DAVID R. Exploring Halo Substructure with Giant Stars: Spectroscopy of Stars in the Galactic Anticenter Stellar Structure. *Jeffrey D. Crane, Steven R. Majewski, Helio J. Rocha-Pinto, Peter M. Frinchaboy, Michael F. Skrutskie, & David R. Law.* 594, L119 (2003)

LAWLER, J. E. Improved Laboratory Transition Probabilities for Nd II and Application to the Neodymium Abundances of the Sun and Three Metal-Poor Stars. *E. A. Den Hartog, J. E. Lawler, C. Sneden, & J. J. Cowan.* 148, 543 (2003)

LAWLER, JAMES E. See SNEDEN, CHRISTOPHER, et al. The Extremely Metal-poor, Neutron Capture–rich Star CS 22892−052: A Comprehensive Abundance Analysis.

LAWRENCE, A. See MARKOWITZ, A., et al. X-Ray Fluctuation Power Spectral Densities of Seyfert 1 Galaxies.

LAWRENCE, CHARLES R. The Redshift of the Lensed Object in the Einstein Ring B0218+357. *Judith G. Cohen, Charles R. Lawrence, & Roger D. Blandford.* 583, 67 (2003)

LAWRENCE, GARETH. Dynamical and Physical Properties of a Post–Coronal Mass Ejection Current Sheet. *Yuan-Kuen Ko, John C. Raymond, Jun Lin, Gareth Lawrence, Jing Li, & Andrzej Fludra.* 594, 1068 (2003)

LAWRENCE, GARETH R. Rapid Acceleration of a Coronal Mass Ejection in the Low Corona and Implications for Propagation. *Peter T. Gallagher, Gareth R. Lawrence, & Brian R. Dennis.* 588, L53 (2003)

LAWRENCE, J. K. Photospheric Sources and Brightening of the Internetwork Chromosphere. *A. C. Cadavid, J. K. Lawrence, T. E. Berger, & A. Ruzmaikin.* 586, 1409 (2003)

Influence of Photospheric Magnetic Fields and Dynamics on Chromospheric K-Line Emission. *J. K. Lawrence, A. C. Cadavid, D. Miccolis, T. E. Berger, & A. Ruzmaikin.* 597, 1178 (2003)

LAWRENCE, K. See TEEGARDEN, B. J., et al. Discovery of a New Nearby Star.

LAWRENCE, STEPHEN. See MICHAEL, ELI, et al. *Hubble Space Telescope* Observations of High-Velocity Lyα and Hα Emission from Supernova Remnant 1987A: The Structure and Development of the Reverse Shock.

LAWS, CHRIS. A Reevaluation of the Super–Lithium-rich Star in NGC 6633. *Chris Laws & Guillermo Gonzalez.* 595, 1148 (2003)

LAWSON, WARRICK A. The ϵ Chamaeleontis Young Stellar Group and the Characterization of Sparse Stellar Clusters. *Eric D. Feigelson, Warrick A. Lawson, & Gordon P. Garmire.* 599, 1207 (2003)

LAWTON, BRANDON. See SZKODY, PAULA, et al. Two Rare Magnetic Cataclysmic Variables with Extreme Cyclotron Features Identified in the Sloan Digital Sky Survey.

LAZARIAN, A. Thermal Conduction in Magnetized Turbulent Gas. *Jungyeon Cho, A. Lazarian, Albert Honein, Bernard Knaepen, Stavros Kassinos, & Parviz Moin.* 589, L77 (2003)

Grain Acceleration by Magnetohydrodynamic Turbulence: Gyroresonance Mechanism. *Huirong Yan & A. Lazarian.* 592, L33 (2003)

Statistics of Velocity from Spectral Data: Modified Velocity Centroids. *A. Lazarian & A. Esquivel.* 592, L37 (2003)

Ordinary and Viscosity-damped Magnetohydrodynamic Turbulence. *Jungyeon Cho, A. Lazarian, & Ethan T. Vishniac.* 595, 812 (2003)

LAZENDIC, J. S. X-Ray Observations of the Compact Central Object in Supernova Remnant G347.3−0.5. *J. S. Lazendic, P. O. Slane, B. M. Gaensler, P. P. Plucinsky, J. P. Hughes, D. K. Galloway, & F. Crawford.* 593, L27 (2003)

Supernova Remnant Candidates in the 30 Doradus Nebula. *J. S. Lazendic, J. R. Dickel, & P. A. Jones.* 596, 287 (2003)

LAZIO, T. J. W. Nonthermal Emission from the Arches Cluster (G0.121+0.017) and the Origin of γ-Ray Emission from 3EG J1746−2851. *F. Yusef-Zadeh, M. Nord, M. Wardle, C. Law, C. Lang, & T. J. W. Lazio.* 590, L103 (2003)

LAZZATI, D. The Resolved Fraction of the Cosmic X-Ray Background. *A. Moretti, S. Campana, D. Lazzati, & G. Tagliaferri.* 588, 696 (2003)

LAZZATI, DAVIDE. Time-dependent Photoionization in a Dusty Medium. II. Evolution of Dust Distributions and Optical Opacities. *Rosalba Perna, Davide Lazzati, & Fabrizio Fiore.* 585, 775 (2003)

LE, G. M. See AMENOMORI, M., et al. Multi-TeV Gamma-Ray Flares from Markarian 421 in 2000 and 2001 Observed with the Tibet Air Shower Array.

LE, TRUONG. Inner Boundary Conditions for Advection-dominated Accretion onto Black Holes. *Peter A. Becker & Truong Le.* 588, 408 (2003)

LEAHY, D. A. Structure of the H I Near the Northeast Limb of the Cygnus Loop. *D. A. Leahy.* 586, 224 (2003)

Hollow Cone Accretion Columns and Light-Bending Effects. *D. A. Leahy.* 596, 1131 (2003)

LEAMON, ROBERT J. What Is the Role of the Kink Instability in Solar Coronal Eruptions? *Robert J. Leamon, Richard C. Canfield, Zachary Blehm, & Alexei A. Pevtsov.* 596, L255 (2003)

LEBACH, D. E. Very Long Baseline Interferometry Imaging of the RS Canum Venaticorum Binary Star System HR 5110. *R. R. Ransom, N. Bartel, M. F. Bietenholz, M. I. Ratner, D. E. Lebach, I. I. Shapiro, & J.-F. Lestrade.* 587, 390 (2003)

LEBOHEC, S. See HOLDER, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.

See HALL, T. A., et al. Search for TeV Emissions from Pulsars in Binary Systems.

See DE LA CALLE PÉREZ, I., et al. Search for High-Energy Gamma Rays from an X-Ray–Selected Blazar Sample.

LEBRUN, F. See MEREGHETTI, S., et al. *Integral* and *XMM-Newton* Observations of the Weak Gamma-Ray Burst GRB 030227.

LECACHEUX, J. A Search for Small Kuiper Belt Objects by Stellar Occultations. *F. Roques, M. Moncuquet, N. Lavillonière, M. Auvergne, M. Chevreton, F. Colas, & J. Lecacheux.* 594, L63 (2003)

LECAR, M. Dispersing the Gaseous Protoplanetary Disk and Halting Type II Migration. *M. Lecar & D. D. Sasselov.* 596, L99 (2003)

LECAVELIER DES ÉTANGS, A. See ANDRÉ, M. K., et al. Oxygen Gas-Phase Abundance Revisited.

LEDLOW, M. J. Radio-selected Galaxis in Very Rich Clusters at $z \leq 0.25$. I. Multiwavelength Observations and Data Reduction Techniques. *G. E. Morrison, F. N. Owen, M. J. Ledlow, W. C. Keel, J. M. Hill, W. Voges, & T. Herter.* 146, 267 (2003)

Gemini-South + FLAMINGOS Demonstration Science: Near-IR Spectroscopy of the $z = 5.77$ Quasar SDSS J083643.85+005453.3. *Daniel Stern, Pat Hall, L. Felipe Barrientos, Andrew J. Bunker, Richard Elston, M. J. Ledlow, S. Nicholas Raines, & Jon Willis.* 596, L39 (2003)

LEE, ANTHONY Y. T. Source of Atomic Hydrogen in the Atmosphere of HD 209458b. *Mao-Chang Liang, Christopher D. Parkinson, Anthony Y. T. Lee, Yuk L. Yung, & Sara Seager.* 596, L247 (2003)

LEE, B. C. See KNOP, R. A., et al. New Constraints on Ω_M, Ω_Λ, and w from an Independent Set of 11 High-Redshift Supernovae Observed with the *Hubble Space Telescope*.

LEE, BRIAN C. See SZALAY, ALEXANDER S., et al. Karhunen-Loève Estimation of the Power Spectrum Parameters from the Angular Distribution of Galaxies in Early Sloan Digital Sky Survey Data.

LEE, CHIN-FEI. Shaping Proto–Planetary and Young Planetary Nebulae with Collimated Fast Winds. *Chin-Fei Lee & Raghvendra Sahai.* 586, 319 (2003)

LEE, HEE-WON. Asymmetric Deviation of the Scattering Cross Section around Lyα Atomic Hydrogen. *Hee-Won Lee.* 594, 637 (2003)

Raman-scattered He II λ6545 Line in the Symbiotic Star V1016 Cygni. *Hee-Won Lee, Young-Jong Sohn, Young Woon Kang, & Ho-Il Kim.* 598, 553 (2003)

LEE, HENRY. The Extinction and Distance of Maffei 1. *Robin L. Fingerhut, Marshall L. McCall, Michael De Robertis, Robin L. Kingsburgh, Michael Komljenovic, Henry Lee, & Ronald J. Buta.* 587, 672 (2003)

LEE, HYESOOK. Numerical Study of Compressible Magnetohydrodynamic Turbulence in Two Dimensions. *Hyesook Lee, Dongsu Ryu, Jongsoo Kim, T. W. Jones, & Dinshaw Balsara.* 594, 627 (2003)

LEE, HYUN JU. See COLLEY, WESLEY N., et al. Around-the-Clock Observations of the Q9057+561A,B Gravitationally Lensed Quasar. II. Results for the Second Observing Season.

LEE, J. C. See STANEK, K. Z., et al. Spectroscopic Discovery of the Supernova 2003dh Associated with GRB 030329.

See MATHESON, T., et al. Photometry and Spectroscopy of GRB 03029 and Its Associated Supernova 2003dh: The First Two Months.

LEE, JEONG-EUN. Chemistry and Dynamics in Pre-protostellar Cores. *Jeong-Eun Lee, Neal J. Evans II, Yancy L. Shirley, & Ken'ichi Tatematsu.* 583, 789 (2003)

LEE, JEONGWOO. Periodic Motion along a Solar Filament Initiated by a Subflare. *Ju Jing, Jeongwoo Lee, Thomas J. Spirock, Yan Xu, Haimin Wang, & G. S. Choe.* 584, L103 (2003)

Hα, Extreme-Ultraviolet, and Microwave Observations of the 2000 March 22 Solar Flare and Spontaneous Magnetic Reconnection. *Jeongwoo Lee, Peter T. Gallagher, Dale E. Gary, Gelu M. Nita, G. S. Choe, Su-Chan Bong, & Hong Sik Yun.* 585, 524 (2003)

LEE, JONGHWAN. See COLLEY, WESLEY N., et al. Around-the-Clock Observations of the Q9057+561A,B Gravitationally Lensed Quasar. II. Results for the Second Observing Season.

LEE, JOUNGHUN. Modeling Intracluster Gas in Triaxial Dark Halos: An Analytic Approach. *Jounghun Lee & Yasushi Suto.* 585, 151 (2003)

Arc Statistics in Triaxial Dark Matter Halos: Testing the Collisionless Cold Dark Matter Paradigm. *Masamune Oguri, Jounghun Lee, & Yasasushi Suto.* 599, 7 (2003)

LEE, KI WON. See COLLEY, WESLEY N., et al. Around-the-Clock Observations of the Q9057+561A,B Gravitationally Lensed Quasar. II. Results for the Second Observing Season.

LEE, MAN HOI. Secular Evolution of Hierarchical Planetary Systems. *Man Hoi Lee & S. J. Peale.* 592, 1201 (2003)

Secular Evolution of Hierarchical Planetary Systems: Erratum (ApJ, 592, 1201 [2003]). *Man Hoi Lee & S. J. Peale.* 597, 644 (2003) (Orig. paper in 592, 1201 (2003))

LEE, MYUNG GYOON. Radio/X-Ray Offsets of Large-Scale Jets Caused by Synchrotron Time Lags. *J. M. Bai & Myung Gyoon Lee.* 585, L113 (2003)

See COLLEY, WESLEY N., et al. Around-the-Clock Observations of the Q9057+561A,B Gravitationally Lensed Quasar. II. Results for the Second Observing Season.

LEE, TIMOTHY J. Time-dependent Density Functional Theory Calculations of Large Compact Polycyclic Aromatic Hydrocarbon Cations: Implications for the Diffuse Interstellar Bands. *Jennifer L. Weisman, Timothy J. Lee, Farid Salama, & Martin Head-Gordon.* 587, 256 (2003)

LEE, TYPHOON. ^{138}L Anomaly in the Early Solar System. *Jason Jiun-San Shen & Typhoon Lee.* 596, L109 (2003)

LEE, UMIN. r-Modes of Neutron Stars with Superfluid Cores. *Umin Lee & Shijun Yoshida.* 586, 403 (2003)

LEE, YOUNGUNG. A Neutral Hydrogen Survey of the Large Magellanic Cloud: Aperture Synthesis and Multibeam Data Combined. *Sungeun Kim, Lister Staveley-Smith, Michael A. Dopita, Robert J. Sault, Youngung Lee, & You-Hua Chu.* 148, 473 (2003)

LEE, YOUNG-WOOK. ω Centauri: Not a Recent Merger but Self-enriched? *Imants Platais, Rosemary F. G. Wyse, Leslie Hebb, Young-Wook Lee, & Soo-Chang Rey.* 591, L127 (2003)

LEER, EGIL. Two-dimensional Magnetohydrodynamic Models of the Solar Corona: Mass Loss from the Streamer Belt. *Eirik Endeve, Egil Leer, & Thomas E. Holzer.* 589, 1040 (2003)

Helium Abundance in the Corona and Solar Wind: Gyrotropic Modeling from the Chromosphere to 1 AU. *Øystein Lie-Svendsen, Viggo H. Hansteen, & Egil Leer.* 596, 621 (2003)

LEERUNGNAVARAT, K. Loss Cone Precursors to Forbush Decreases and Advance Warning of Space Weather Effects. *K. Leerungnavarat, D. Ruffolo, & J. W. Bieber.* 593, 587 (2003)

LE FÈVRE, O. See WEBB, T. M., et al. The Canada–United Kingdom Deep Submillimeter Survey. V. The Submillimeter Properties of Lyman Break Galaxies.

LEFLOCH, B. CO Depletion and Deuterium Fractionation in Prestellar Cores. *A. Bacmann, B. Lefloch, C. Ceccarelli, J. Steinacker, A. Castets, & L. Loinard.* 585, L55 (2003)

LEFLOCH, B. Warm Molecular Hydrogen and Ionized Neon in the HH 2 Outflow. *B. LeFloch, J. Cernicharo, S. Cabrit, A. Noriega-Crespo, A. Moro-Martín, & D. Cesarsky.* 590, L41 (2003)

LEGGE, D. The Vela Pulsar's Proper Motion and Parallax Derived from VLBI Observations. *R. Dodson, D. Legge, J. E. Reynolds, & P. M. McCulloch.* 596, 1137 (2003)

LEHÁR, J. See RUSIN, D., et al. The Evolution of a Mass-selected Sample of Early-Type Field Galaxies.

The Redshift Distribution of Flat-Spectrum Radio Sources. *J. A. Muñoz, E. E. Falco, C. S. Kochanek, J. Lehár, & E. Mediavilla.* 594, 684 (2003)

LEHNER, M. See ALCOCK, C., et al. The MACHO Project Large Magellanic Cloud Variable Star Inventory. XI. Frequency Analysis of the Fundamental Mode RR Lyrae Stars.

LEHNER, N. *Far Ultraviolet Spectroscopic Explorer* Snapshot Survey of O VI Variability in the Winds of 66 OB-Type Stars. *N. Lehner, A. W. Fullerton, D. Massa, K. R. Sembach, & J. Zsargó.* 589, 526 (2003)

Far Ultraviolet Spectroscopic Explorer Survey of the Local Interstellar Medium within 200 Parsecs. *N. Lehner, E. B. Jenkins, C. Gry, H. W. Moos, P. Chayer, & S. Lacour.* 595, 858 (2003)

LEHNERT, M. See GENZEL, R., et al. The Stellar Cusp around the Supermassive Black Hole in the Galactic Center.

Molecular Hydrogen Excitation in Ultraluminous Infrared Galaxies. *R. I. Davies, A. Sternberg, M. Lehnert, & L. E. Tacconi-Garman.* 597, 907 (2003)

LEHNERT, MATTHEW D. Luminous Lyman Break Galaxies at $z > 5$ and the Source of Reionization. *Matthew D. Lehnert & Malcolm Bremer.* 593, 630 (2003)

LEI, WEI-HUA. Magnetic Coupling of a Rotating Black Hole with Its Surrounding Accretion Disk. *Ding-Xiong Wang, Ren-Yi Ma, Wei-Hua Lei, & Guo-Zheng Yao.* 595, 109 (2003)

LEIBOWITZ, E. See MUKADEM, ANJUM S., et al. Constraining the Evolution of ZZ Ceti.

LEIBUNDGUT, BRUNO. See TONRY, JOHN L., et al. Cosmological Results from High-z Supernovae.

LEICH, H. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

LEIGHLY, K. M. An *Extreme Ultraviolet Explorer* Atlas of Seyfert Galaxy Light Curves: Search for Periodicity. *J. P. Halpern, K. M. Leighly, & H. L. Marshall.* 585, 665 (2003)

Follow-Up *Hubble Space Telescope*/Space Telescope Imaging Spectroscopy of Three Candidate Tidal Disruption Events. *S. Gezari, J. P. Halpern, S. Komossa, D. Grupe, & K. M. Leighly.* 592, 42 (2003)

LEITCH, E. M. See MASON, B. S., et al. The Anisotropy of the Microwave Background to $l = 3500$: Deep Field Observatons with the Cosmic Background Imager.

See PEARSON, T. J., et al. The Anisotropy of the Microwave Background to $l = 3500$: Mosaic Observations with the Cosmic Background Imager.

LEITER, DARRYL J. On Intrinsic Magnetic Moments in Black Hole Candidates. *Stanley L. Robertson & Darryl J. Leiter.* 596, L203 (2003)

LEITHERER, C. Abundances in the Neutral Interstellar Medium of I Zw 18 from *Far Ultrviolet Spectroscopic Explorer* Observations. *A. Aloisi, S. Savaglio, T. M. Heckman, C. G. Hoopes, C. Leitherer, & K. R. Sembach.* 595, 760 (2003)

Lyα Emission in Starbursts: Implications for Galaxies at High Redshift. *J. M. Mas-Hesse, D. Kunth, G. Tenorio-Tagle, C. Leitherer, R. J. Terlevich, & E. Terlevich.* 598, 858 (2003)

LEITHERER, CLAUS. Synthetic High-Resolution Line Spectra of Star-forming Galaxies below 1200 Å. *Carmelle Robert, Anne Pellerin, Alessandra Aloisi, Claus Leitherer, Charles Hoopes, & Timothy M. Heckman.* 144, 21 (2003)

Detection of a Super–Star Cluster as the Ionizing Source in the Low-Luminosity Active Galactic Nucleus NGC 4303: Erratum (ApJ, 579, 545 [2002]). *Luis Colina, Rosa Gonzalez Delgado, J. Miguel Mas-Hesse, Claus Leitherer, & Elena Jiménez Bailón.* 582, 1269 (2003) (Orig. paper in 579, 545 (2002))

Detection of a Super–Star Cluster as the Ionizing Source in the Low-Luminosity Active Galactic Nucleus NGC 4303: Erratum (ApJ, 582, 1269 [2003]). *Luis Colina, Rosa Gonzalez-Delgado, J. Miguel Mas-Hesse, Claus Leitherer, & Elena Jiménez-Bailón.* 586, 692 (2003) (Orig. paper in 582, 1269 (2003))

The Stellar Content of Henize 2-10 from Space Telescope Imaging Spectrograph Ultraviolet Spectroscopy. *Rupali Chandar, Claus Leitherer, Christy Tremonti, & Daniela Calzetti.* 586, 939 (2003)

The First Deep Advanced Camera for Surveys Lyα Images of Local Starburst Galaxies. *Daniel Kunth, Claus Leitherer, J. Miguel Mas-Hesse, Göran Östlin, & Artashes Petrosian.* 597, 263 (2003)

LEITNER, SAMUEL N. A Turbulent Origin for Flocculent Spiral Structure in Galaxies. *Bruce G. Elmegreen, Debra Meloy Elmegreen, & Samuel N. Leitner.* 590, 271 (2003)

A Turbulent Origin for Flocculent Spiral Structure in Galaxies. II. Observations and Models of M33. *Bruce G. Elmegreen, Samuel N. Leitner, Debra Meloy Elmegreen, & Jean-Charles Cuillandre.* 593, 333 (2003)

LEKA, K. D. Photospheric Magnetic Field Properties of Flaring versus Flare-quiet Active Regions. I. Data, General Approach, and Sample Results. *K. D. Leka & G. Barnes.* 595, 1277 (2003)

Photospheric Magnetic Field Properties of Flaring versus Flare-Quiet Active Regions. III. Discriminant Analysis. *K. D. Leka & G. Barnes.* 595, 1296 (2003)

LEMAIRE, P. The Contribution of Polar Plumes to the Fast Solar Wind. *A. H. Gabriel, F. Bely-Dubau, & P. Lemaire.* 589, 623 (2003)

LE MIGNANT, D. See COLAVITA, M., et al. Observations of DG Tauri with the Keck Interferometer.

See SWAIN, MARK, et al. Interferometer Observations of Subparsec-Scale Infrared Emission in the Nucleus of NGC 4151.

LEMOINE, MARTIN. Particle Transport in Tangled Magnetic Fields and Fermi Acceleration at Relativistic Shocks. *Martin Lemoine & Guy Pelletier.* 589, L73 (2003)

LENNON, D. J. A Tale of Two Stars: The Extreme O7 Iaf+ Supergiant AV 83 and the OC7.5 III((f)) Star AV 69. *D. John Hillier, T. Lanz, S. R. Heap,*

I. Hubeny, L. J. Smith, C. J. Evans, D. J. Lennon, & J. C. Bouret. 588, 1039 (2003)

Quantitative Spectroscopy of O Stars at Low Metallicity: O Dwarfs in NGC 346. *J.-C. Bouret, T. Lanz, D. J. Hillier, S. R. Heap, I. Hubeny, D. J. Lennon, L. J. Smith, & C. J. Evans.* 595, 1182 (2003)

LENNON, DANIEL J. The Remarkable Alternating Spectra of the Of?p Star HD 191612. *Nolan R. Walborn, Ian D. Howarth, Artemio Herrero, & Daniel J. Lennon.* 588, 1025 (2003)

LENTERS, GEOFFREY T. An Extended Burst Tail from SGR 1900+14 with a Thermal X-Ray Spectrum. *Geoffrey T. Lenters, Peter M. Woods, Johnathan E. Goupell, Chryssa Kouveliotou, Ersin Göğüş, Kevin Hurley, Dmitry Frederiks, Sergey Golenetskii, & Jean Swank.* 587, 761 (2003)

LENTZ, ERIC J. Detectibility of Mixed Unburnt C+O in Type Ia Supernova Spectra. *E. Baron, Eric J. Lentz, & Peter H. Hauschildt.* 588, L29 (2003)

LENZEN, R. See GENZEL, R., et al. The Stellar Cusp around the Supermassive Black Hole in the Galactic Center.

See FELDT, M., et al. Discovery of a Candidate for the Central Star of the Ultracompact H II Region G5.89−0.39.

LEONARD, D. C. See MATHESON, T., et al. Photometry and Spectroscopy of GRB 03029 and Its Associated Supernova 2003dh: The First Two Months.

LEONARD, DOUGLAS C. The Cepheid Distance to NGC 1637: A Direct Test of the Expanding Photosphere Method Distance to SN 1999em. *Douglas C. Leonard, Shashi M. Kanbur, Choong C. Ngeow, & Nial R. Tanvir.* 594, 247 (2003)

A Deep *Chandra* X-Ray Observation of NGC 1637. *Stefan Immler, Q. Daniel Wang, Douglas C. Leonard, & Eric M. Schlegel.* 595, 727 (2003)

LEONG, J. See RUNYAN, M. C., et al. ACBAR: The Arcminute Cosmology Bolometer Array Receiver.

LEONG, LAI PENG. See MEDVEDEV, IVAN, et al. The Millimeter- and Submillimeter-Wave Spectrum of the Trans-Trans Conformer of Diethyl Ether ($C_2H_5OC_2H_5$).

LEONOR, I. See ATKINS, R., et al. The High-Energy Gamma-Ray Fluence and Energy Spectrum of GRB 970417A from Observations with Milagrito.

See FALCONE, A., et al. Observation of GeV Solar Energetic Particles from the 1997 November 6 Event Using Milagrito.

LE PAGE, VALERY. Hydrogenation and Charge States of the Polycyclic Aromatic Hydrocarbons in Diffuse Clouds. II. Results. *Valery Le Page, Theodore P. Snow, & Veronica M. Bierbaum.* 584, 316 (2003)

LÉPINE, J. R. D. Corotation, Stellar Wandering, and Fine Structure of the Galactic Abundance Pattern. *J. R. D. Lépine, I. A. Acharova, & Yu. N. Mishurov.* 589, 210 (2003)

LÉPINE, SÉBASTIEN. Discovery of an Ultracool Subdwarf: LSR 1425+7102, the First Star with Spectral Type sdM8.0. *Sébastien Lépine, Michael M. Shara, & R. Michael Rich.* 585, L69 (2003)

LSR 0602+3910: Discovery of a Bright Nearby L-Type Brown Dwarf. *Samir Salim, Sébastien Lépine, R. Michael Rich, & Michael M. Shara.* 586, L149 (2003)

LSR 1610−0040: The First Early-Type L Subdwarf. *Sébastien Lépine, R. Michael Rich, & Michael M. Shara.* 591, L49 (2003)

LEPROVOST, NICOLAS. Self-consistent Mean Field Theory in Weakly Ionized Media. *Nicolas Leprovost & Eun-jin Kim.* 598, L99 (2003)

LEPSON, J. K. Emission-Line Spectra of Ar IX–Ar XVI in the Soft X-Ray Region 20–50 Å. *J. K. Lepson, P. Beiersdorfer, E. Behar, & S. M. Kahn.* 590, 604 (2003)

LEROY, ADAM. Unusual CO Line Ratios and Kinematics in the N83/N84 Region of the Small Magellanic Cloud. *Alberto D. Bolatto, Adam Leroy, Frank P. Israel, & James M. Jackson.* 595, 167 (2003)

High-Resolution Measurements of the Dark Matter Halo of NGC 2976: Evidence for a Shallow Density Profile. *Joshua D. Simon, Alberto D. Bolatto, Adam Leroy, & Leo Blitz.* 596, 957 (2003)

LESKE, R. A. See SLOCUM, P. L., et al. Elemental Fractionation in Small Solar Energetic Particle Events.

LESSARD, R. See HALL, T. A., et al. Search for TeV Emissions from Pulsars in Binary Systems.

See AKERLOF, C. W., et al. A Search for Correlations of TeV Gamma Rays with Ultra–High-Energy Cosmic Rays.

LESSER, M. See TRAN, H. D., et al. Advanced Camera for Surveys Observations of Young Star Clusters in the Interacting Galaxy UGC 10214.

LESSER, M. P. See BOUWENS, R. J., et al. Star Formation at $z \sim 6$: *i*-Dropouts in the Advanced Camera for Surveys Guaranteed Time Observation Fields.

See MEURER, GERHARDT R., et al. The Discovery of Globular Clusters in the Protospiral Galaxy NGC 2915: Implications for Hierarchical Galaxy Evolution.

LESTRADE, J.-F. A 3 Year Long Extreme Scattering Event in the Direction of the Millisecond Pulsar J1643−1224. *V. Maitia, J.-F. Lestrade, & I. Cognard.* 582, 972 (2003)

Very Long Baseline Interferometry Imaging of the RS Canum Venaticorum Binary Star System HR 5110. *R. R. Ransom, N. Bartel, M. F. Bietenholz, M. I. Ratner, D. E. Lebach, I. I. Shapiro, & J.-F. Lestrade.* 587, 390 (2003)

LEUENHAGEN, U. [C I] 492 GHz Mapping Observations of the High-Latitude Translucent Cloud MCLD 123.5+24.9. *F. Bensch, U. Leuenhagen, J. Stutzki, & R. Schieder.* 591, 1013 (2003)

LEUNG, CHUN MING. Modeling the Transport of Polarized Radiation Due to Scattering in Spherical Dust Shells. *David A. Joiner & Chun Ming Leung.* 593, 402 (2003)

LEUTENEGGER, MAURICE A. X-Ray Spectroscopy of η Carinae with *XMM-Newton*. *Maurice A. Leutenegger, Steven M. Kahn, & Gavin Ramsay.* 585, 1015 (2003)

LEUTHOLD, M. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

LEVATO, HUGO. Properties of Fast Submillimeter Time Structures during a Large Solar Flare. *Jean-Pierre Raulin, Pierre Kaufmann, Carlos G. Giménez de Castro, Alessandra A. Pacini, Vladimir S. Makhmutov, Hugo Levato, & Marta Rovira.* 592, 580 (2003)

LEVENSON, N. A. A *Chandra* Survey of the Nearest Ultraluminous Infrared Galaxies: Obscured Active Galactic Nuclei or Superstarbursts? *A. Ptak, T. Heckman, N. A. Levenson, K. Weaver, & D. Strickland.* 592, 782 (2003)

See FIGER, DONALD F., et al. High-Precision Stellar Radial Velocities in the Galactic Center.

LEVIN, YURI. Stellar Disk in the Galactic Center: A Remnant of a Dense Accretion Disk? *Yuri Levin & Andrei M. Beloborodov.* 590, L33 (2003)

LEVINE, A. See CREW, G. B., et al. *HETE-2* Localization and Observation of the Bright, X-Ray–rich Gamma-Ray Burst GRB 021211.

LEVINSON, AMIR. Theory and Astrophysical Consequences of a Magnetized Torus around a Rapidly Rotating Black Hole. *Maurice H. P. M. van Putten & Amir Levinson.* 584, 937 (2003)

Baryon Loading of Gamma-Ray Burst by Neutron Pickup. *Amir Levinson & David Eichler.* 594, L19 (2003)

Polarization of Gamma-Ray Bursts via Scattering off a Relativistic Sheath. *David Eichler & Amir Levinson.* 596, L147 (2003)

LEVISON, HAROLD F. Recent Origin of the Solar System Dust Bands. *David Nesvorný, William F. Bottke, Harold F. Levison, & Luke Dones.* 591, 486 (2003)

LEVRIER, F. On the Use of Fractional Brownian Motion Simulations to Determine the Three-dimensional Statistical Properties of Interstellar Gas. *M.-A. Miville-Deschênes, F. Levrier, & E. Falgarone.* 593, 831 (2003)

LEVSHAKOV, S. A. Metal Abundances and Kinematics of Quasar Absorbers. II. Absorption Systems toward Q0347−3819 and APM BR J0307−4945. *S. A. Levshakov, I. I. Agafonova, S. D'Odorico, A. M. Wolfe, & M. Dessauges-Zavadsky.* 582, 596 (2003)

LEWEN, F. A Concise New Look at the *l*-Type Spectrum of $H^{12}C^{14}N$. *S. Thorwirth, H. S. P. Müller, F. Lewen, S. Brünken, V. Ahrens, & G. Winnewisser.* 585, L163 (2003)

LEWEN, FRANK. Laboratory Precision Measurements of the Rotational Spectrum of $^{12}C^{17}O$ and $^{13}C^{17}O$. *Gabriele Klapper, Leonid Surin, Frank Lewen, Holger S. P. Müller, Igor Pak, & Gisbert Winnewisser.* 582, 262 (2003)

Laboratory Spectrum of the $1_{11}-2_{02}$ Rotational Transition of CH_2. *Ernest A. Michael, Frank Lewen, Gisbert Winnewisser, Hiroyuki Ozeki, Hideta Habara, & Eric Herbst.* 596, 1356 (2003)

LEWIN, W. H. G. See MILLER, J. M., et al. *XMM-Newton* Spectroscopy of the Accretion-driven Millisecond X-Ray Pulsar XTE J1751−305 in Outburst.

Untwisting the Tornado: X-Ray Imaging and Spectroscopy of G357.7−0.1. *B. M. Gaensler, J. K. J. Fogel, P. O. Slane, J. M. Miller, R. Wijnands, S. S. Eikenberry, & W. H. G. Lewin.* 594, L35 (2003)

LEWIN, WALTER H. G. High-Frequency Quasi-Periodic Oscillations in the Black Holes X-Ray Transient XTE J1650−500. *Jeroen Homan, Marc Klein-Wolt, Sabrina Rossi, Jon M. Miller, Rudy Wijnands, Tomaso Belloni, Michiel van der Klis, & Walter H. G. Lewin.* 586, 1262 (2003)

See Pooley, David, et al. Dynamical Formation of Close Binary Systems in Globular Clusters.

Chandra Observations of the Faintest Low-Mass X-Ray Binaries. *Colleen A. Wilson, Sandeep K. Patel, Chryssa Kouveliotou, Peter G. Jonker, Michiel van der Klis, Walter H. G. Lewin, Tomaso Belloni, & Mariano Méndez.* 596, 1220 (2003)

Lewin, Walter H. H. A *Chandra* Observation of the Neutron Star X-Ray Transient and Eclipsing Binary MXB 1659−29 in Quiescence. *Rudy Wijnands, Mike Nowak, Jon M. Miller, Jeroen Homan, Stefanie Wachter, & Walter H. H. Lewin.* 594, 952 (2003)

Lewis, Aaron D. *Chandra* Observations of A2029: The Dark Matter Profile Down to below $0.01r_{\rm vir}$ in an Unusually Relaxed Cluster. *Aaron D. Lewis, David A. Buote, & John T. Stocke.* 586, 135 (2003)

XMM-Newton and *Chandra* Observations of the Galaxy Group NGC 5044. I. Evidence for Limited Multiphase Hot Gas. *David A. Buote, Aaron D. Lewis, Fabrizio Brighenti, & William G. Mathews.* 594, 741 (2003)

XMM-Newton and *Chandra* Observations of the Galaxy Group NGC 5044. II. Metal Abundances and Supernova Fraction. *David A. Buote, Aaron D. Lewis, Fabrizio Brighenti, & William G. Mathews.* 595, 151 (2003)

Circulation Flows: Cooling Flows with Bubble Return. *William G. Mathews, Fabrizio Brighenti, David A. Boute, & Aaron D. Lewis.* 596, 159 (2003)

Lewis, G. F. See Chapman, S. C., et al. The Properties of Microjansky Radio Sources in the Hubble Deep Field–North, SSA 13, and SSA 22 Fields.

The Bivariate Luminosity-Color Distribution of *IRAS* Galaxies and Implications for the High-Redshift Universe. *S. C. Chapman, G. Helou, G. F. Lewis, & D. A. Dale.* 588, 186 (2003)

Lewis, Geraint F. Nanolensing of Gamma-Ray Bursts. *Mark A. Walker & Geraint F. Lewis.* 589, 844 (2003)

Submillimeter Observations of a Sample of Broad Absorption Line Quasars. *Geraint F. Lewis, S. C. Chapman, & Zdenka Kuncic.* 596, L35 (2003)

Lewis, H. See Colavita, M., et al. Observations of DG Tauri with the Keck Interferometer.

Lewis, Karen T. The Radial Structure of Supernova Remnant N103B. *Karen T. Lewis, David N. Burrows, John P. Hughes, Patrick O. Slane, Gordon P. Garmire, & John A. Nousek.* 582, 770 (2003)

Emission-Line Diagnostics of the Central Engines of Weak-Line Radio Galaxies. *Karen T. Lewis, Michael Eracleous, & Rita M. Sambruna.* 593, 115 (2003)

Lewis, Matthew. Future Type Ia Supernova Data as Tests of Dark Energy from Modified Friedmann Equations. *Yun Wang, Katherine Freese, Paolo Gondolo, & Matthew Lewis.* 594, 25 (2003)

Leya, I. The Predictable Collateral Consequences of Nucleosynthesis by Spallation Reactions in the Early Solar System. *I. Leya, A. N. Halliday, & R. Wieler.* 594, 605 (2003)

Li, Aigen. Cosmic Needles versus Cosmic Microwave Background Radiation. *Aigen Li.* 584, 593 (2003)

Modeling the Infrared Emission from the HR 4796A Disk. *Aigen Li & J. I. Lunine.* 590, 368 (2003)

Modeling the Infrared Emission from the HD 141569A Disk. *Aigen Li & J. I. Lunine.* 594, 987 (2003)

Modeling the Infrared Emission from the ϵ Eridani Disk. *Aigen Li, J. I. Lunine, & G. J. Bendo.* 598, L51 (2003)

On Titanium Carbide Nanoparticles as the Origin of the 21 Micron Emission Feature in Post–Asymptotic Giant Branch Stars. *Aigen Li.* 599, L45 (2003)

Li, Cheng. SDSS J094857.3+002225: A Very Radio Loud, Narrow-Line Quasar with Relativistic Jets? *Hong-Yan Zhou, Ting-Gui Wang, Xiao-Bo Dong, You-Yuan Zhou, & Cheng Li.* 584, 147 (2003)

Li, D. H I Narrow Self-Absorption in Dark Clouds. *D. Li & P. F. Goldsmith.* 585, 823 (2003)

Massive Quiescent Cores in Orion. I. Temperature Structure. *D. Li, P. F. Goldsmith, & K. Menten.* 587, 262 (2003)

Li, Guangyu. The Dynamical Simulations of the Planets Orbiting GJ 876: Erratum (ApJ, 572, 1041 [2002]). *Jianghui Ji, Guangyu Li, & Lin Liu.* 582, 558 (2003) (Orig. paper in 572, 1041 (2002))

Could the 55 Cancri Planetary System Really Be in the 3:1 Mean Motion Resonance? *Jianghui Ji, Hiroshi Kinoshita, Lin Liu, & Guangyu Li.* 585, L139 (2003)

The Librating Companions in HD 37124, HD 12661, HD 82943, 47 Ursa Majoris, and GJ 876: Alignment or Antialignment? *Jianghui Ji, Lin Liu, Hiroshi Kinoshita, Jilin Zhou, Hiroshi Nakai, & Guangyu Li.* 591, L57 (2003)

Li, Hui. Vortices in the Co-orbital Region of an Embedded Protoplanet. *Hui Li, Josef Koller, & Douglas N. C. Lin.* 596, L91 (2003)

Cosmological Mestel Disks and the Rossby Vortex Instability: The Origin of Supermassive Black Holes. *Stirling A. Colgate, Renyue Cen, Hui Li, Nathan Currier, & Michael S. Warren.* 598, L7 (2003)

Li, J. Ultraviolet Spectroscopy of Narrow Coronal Mass Ejections. *D. Dobrzycka, J. C. Raymond, D. A. Biesecker, J. Li, & A. Ciaravella.* 588, 586 (2003)

Physical Parameters of the 2000 February 11 Coronal Mass Ejection: Ultraviolet Spectra versus White-Light Images. *A. Ciaravella, J. C. Raymond, A. van Ballegooijen, L. Strachan, A. Vourlidas, J. Li, J. Chen, & A. Panasyuk.* 597, 1118 (2003)

Li, J. P. Hα and Hard X-Ray Observations of a Two-Ribbon Flare Associated with a Filament Eruption. *M. D. Ding, Q. R. Chen, J. P. Li, & P. F. Chen.* 598, 683 (2003)

Li, J. Y. See Amenomori, M., et al. Multi-TeV Gamma-Ray Flares from Markarian 421 in 2000 and 2001 Observed with the Tibet Air Shower Array.

Li, Jiarong. The Critical Rotation of Strange Stars and Rapidly Rotating Pulsars. *Xiaoping Zheng, Shuhua Yang, & Jiarong Li.* 585, L135 (2003)

Li, Jing. Dynamical and Physical Properties of a Post–Coronal Mass Ejection Current Sheet. *Yuan-Kuen Ko, John C. Raymond, Jun Lin, Gareth Lawrence, Jing Li, & Andrzej Fludra.* 594, 1068 (2003)

Li, Jingqiang. Refining *Chandra*/ACIS Subpixel Event Repositioning Using a Backside-illuminated CCD Model. *Jingqiang Li, Joel H. Kastner, Gregory Y. Prigozhin, & Norbert S. Schulz.* 590, 586 (2003)

A Compact X-Ray Source and Possible X-Ray Jets within the Planetary Nebula Menzel 3. *Joel H. Kastner, Bruce Balick, Eric G. Blackman, Adam Frank, Noam Soker, Saeqa D. Vrtilek, & Jingqiang Li.* 591, L37 (2003)

Li, L. H. Global Parameter and Helioseismic Tests of Solar Variability Models. *L. H. Li, S. Basu, S. Sofia, F. J. Robinson, P. Demarque, & D. B. Guenther.* 591, 1267 (2003)

Li, Li-Xin. Nonaxisymmetric g-Mode and p-Mode Instability in a Hydrodynamic Thin Accretion Disk. *Li-Xin Li, Jeremy Goodman, & Ramesh Narayan.* 593, 980 (2003)

Gravitational Lensing by a Compound Population of Halos: Standard Models. *Li-Xin Li & Jeremiah P. Ostriker.* 595, 603 (2003)

Li, T. P. Evolution of Hard X-Ray Spectra along the Branches in Circinus X-1. *G. Q. Ding, J. L. Qu, & T. P. Li.* 596, L219 (2003)

Li, Ti Pei. Low-Frequency Coherence Break in the Soft X-Ray State of GRS 1915+105. *Jian Feng Ji, Shuang Nan Zhang, Jin Lu Qu, & Ti Pei Li.* 584, L23 (2003)

Li, W. See Matheson, T., et al. Photometry and Spectroscopy of GRB 030329 and Its Associated Supernova 2003dh: The First Two Months.

Li, Weidong. The Early Light Curve of the Optical Afterglow of GRB 021211. *Weidong Li, Alexei V. Filippenko, Ryan Chornock, & Saurabh Jha.* 586, L9 (2003)

See Michael, Eli, et al. *Hubble Space Telescope* Observations of High-Velocity Lyα and Hα Emission from Supernova Remnant 1987A: The Structure and Development of the Reverse Shock.

See Tonry, John L., et al. Cosmological Results from High-z Supernovae.

Li, Xiang-Dong. A Fallback Disk Model for Ultraluminous X-Ray Sources. *Xiang-Dong Li.* 596, L199 (2003)

Li, Xing. Coronal Loops Heated by Turbulence-driven Alfvén Waves. *Xing Li & Shadia Rifai Habbal.* 598, L125 (2003)

Li, Yong. Nitrogen Overabundance: Globular Cluster and Halo Formation. *Yong Li & David Burstein.* 598, L103 (2003)

Li, Yuexing. The Formation of Stellar Clusters in Turbulent Molecular Clouds: Effects of the Equation of State. *Yuexing Li, Ralf S. Klessen, & Mordecai-Mark Mac Low.* 592, 975 (2003)

Li, Zhi-Yun. Fragmentation of Magnetically Subcritical Clouds into Multiple Supercritical Cores and the Formation of Small Stellar Groups: Erratum (ApJ, 578, 256 [2002]). *Zhi-Yun Li & Fumitaka Nakamura.* 583, 1063 (2003) (Orig. paper in 578, 256 (2002))

A Coupled Dynamical and Chemical Model of Starless Cores of Magnetized Molecular Clouds. II. Chemical Differentiation. *V. I. Shematovich, D. S. Wiebe, B. M. Shustov, & Zhi-Yun Li.* 588, 894 (2003)

Wind-Interaction Models for the Early Afterglows of Gamma-Ray Bursts: The Case of GRB 021004. *Zhi-Yun Li & Roger A. Chevalier.* 589, L69 (2003)

Locating the Launching Region of T Tauri Winds: The Case of DG Tauri. *Jeffrey M. Anderson, Zhi-Yun Li, Ruben Krasnopolsky, & Roger D. Blandford.* 590, L107 (2003)

Binary and Multiple Star Formation in Magnetic Clouds: Bar Growth and Fragmentation. *Fumitaka Nakamura & Zhi-Yun Li.* 594, 363 (2003)

Magnetocentrifugal Launching of Jets from Accretion Disks. II. Inner Disk-driven Winds. *Ruben Krasnopolsky, Zhi-Yun Li, & Roger D. Blandford.* 595, 631 (2003)

Collapse of Magnetized Singular Isothermal Toroids. I. The Nonrotating Case. *Anthony Allen, Frank H. Shu, & Zhi-Yun Li.* 599, 351 (2003)

Collapse of Magnetized Singular Isothermal Toroids. II. Rotation and Magnetic Braking. *Anthony Allen, Zhi-Yun Li, & Frank H. Shu.* 599, 363 (2003)

Li, Zhuo. Pair Loading in Gamma-Ray Burst Fireballs and Prompt Emission from Pair-rich Reverse Shocks. *Zhuo Li, Z. G. Dai, T. Lu, & L. M. Song.* 599, 380 (2003)

Liang, E. P. Two-dimensional Monte Carlo/Fokker-Planck Simulations of Flares in Accretion Disk Corona Models. *M. Böttcher, D. R. Jackson, & E. P. Liang.* 586, 389 (2003)

Liang, Edison. The Connection between Spectral Evolution and Gamma-Ray Burst Lag. *Dan Kocevski & Edison Liang.* 594, 385 (2003)

Search for Relativistic Curvature Effects in Gamma-Ray Burst Pulses. *Dan Kocevski, Felix Ryde, & Edison Liang.* 596, 389 (2003)

Liang, Mao-Chang. Source of Atomic Hydrogen in the Atmosphere of HD 209458b. *Mao-Chang Liang, Christopher D. Parkinson, Anthony Y. T. Lee, Yuk L. Yung, & Sara Seager.* 596, L247 (2003)

Liao, X. A Three-dimensional Spherical Nonlinear Interface Dynamo. *K. Zhang, K. H. Chan, J. Zou, X. Liao, & G. Schubert.* 596, 663 (2003)

Liao, Xinhao. Nonaxisymmetric Instabilities of a Toroidal Magnetic Field in a Rotating Sphere. *Keke Zhang, Xinhao Liao, & Gerald Schubert.* 585, 1124 (2003)

Li Causi, G. See Valentini, G., et al. Optical and Near-Infrared Photometry of the Type Ia Supernova 2000E in NGC 6951.

Lichtenstadt, Itamar. The Magnetorotational Instability in Core-Collapse Supernova Explosions. *Shizuka Akiyama, J. Craig Wheeler, David L. Meier, & Itamar Lichtenstadt.* 584, 954 (2003)

Lidman, C. See Bouwens, R. J., et al. Star Formation at $z \sim 6$: i-Dropouts in the Advanced Camera for Surveys Guaranteed Time Observation Fields.

See Knop, R. A., et al. New Constraints on Ω_M, Ω_Λ, and w from an Independent Set of 11 High-Redshift Supernovae Observed with the *Hubble Space Telescope*.

Liebert, J. Gravity Indicators in the Near-Infrared Spectra of Brown Dwarfs. *N. I. Gorlova, M. R. Meyer, G. H. Rieke, & J. Liebert.* 593, 1074 (2003)

Liebert, James. The Discovery of Two Nearby Carbon Dwarfs. *Patrick J. Lowrance, J. Davy Kirkpatrick, I. Neill Reid, Kelle L. Cruz, & James Liebert.* 584, L95 (2003)

Blue Horizontal-Branch Stars in Old, Metal-rich Stellar Systems. *Ruth C. Peterson, Bruce W. Carney, Ben Dorman, Elizabeth M. Green, Wayne Landsman, James Liebert, Robert W. O'Connell, & Robert T. Rood.* 588, 299 (2003)

See Burgasser, Adam J., et al. The First Substellar Subdwarf? Discovery of a Metal-poor L Dwarf with Halo Kinematics.

The Spectra of T Dwarfs. II. Red Optical Data. *Adam J. Burgasser, J. Davy Kirkpatrick, James Liebert, & Adam Burrows.* 594, 510 (2003)

See Schmidt, Gary D., et al. Magnetic White Dwarfs from the Sloan Digital Sky Survey: The First Data Release.

Liedahl, D. A. See Crenshaw, D. M., et al. Simultaneous Ultraviolet and X-Ray Spectroscopy of the Seyfert 1 Galaxy NGC 5548. I. Physical Conditions in the Ultraviolet Absorbers.

Toward a Self-Consistent Model of the Ionized Absorber in NGC 3783. *Y. Kromgold, F. Nicastro, N. S. Brickhouse, M. Elvis, D. A. Liedahl, & S. Mathur.* 597, 832 (2003)

Liedahl, Duane A. Resolving the Effects of Resonant X-Ray Line Scattering in Centaurus X-3 with *Chandra*. *Patrick S. Wojdowski, Duane A. Liedahl, Masao Sako, Steven M. Kahn, & Frederik Paerels.* 582, 959 (2003)

High-Resolution *Chandra* Spectroscopy of τ Scorpii: A Narrow-Line X-Ray Spectrum from a Hot Star. *David H. Cohen, Geneviève E. de Messières, Joseph J. MacFarlane, Nathan A. Miller, Joseph P. Cassinelli, Stanley P. Owocki, & Duane A. Liedahl.* 586, 495 (2003)

The Fe XXII I(11.92 Å)/I(11.77 Å) Density Diagnostic Applied to the *Chandra* High-Energy Transmission Grating Spectrum of EX Hydrae. *Christopher W. Mauche, Duane A. Liedahl, & Kevin B. Fournier.* 588, L101 (2003)

See Sako, Masao, et al. Can a Dusty Warm Absorber Model Reproduce the Soft X-Ray Spectra of MCG −6-30-15 and Markarian 766?

Lie-Svendsen, Øystein. Helium Abundance in the Corona and Solar Wind: Gyrotropic Modeling from the Chromosphere to 1 AU. *Øystein Lie-Svendsen, Viggo H. Hansteen, & Egil Leer.* 596, 621 (2003)

Lieu, R. Soft X-Ray Excess Emission in Clusters of Galaxies Observed with *XMM-Newton*. *J. Nevalainen, R. Lieu, M. Bonamente, & D. Lumb.* 584, 716 (2003)

Lieu, Richard. A Massive Warm Baryonic Halo in the Coma Cluster. *Massimiliano Bonamente, Marshall K. Joy, & Richard Lieu.* 585, 722 (2003)

The Phase Coherence of Light from Extragalactic Sources: Direct Evidence against First-Order Planck-Scale Fluctuations in Time and Space. *Richard Lieu & Lloyd W. Hillman.* 585, L77 (2003)

Liewer, P. See Roussev, I. I., et al. A Three-dimensional Model of the Solar Wind Incorporating Solar Magnetogram Observations.

Liewer, Paulett C. Probing the Edge of the Solar System: Formation of an Unstable Jet-Sheet. *Merav Opher, Paulett C. Liewer, Tamas I. Gombosi, Ward Manchester, Darren L. DeZeeuw, Igor Sokolov, & Gabor Toth.* 591, L61 (2003)

Ligon, E. See Colavita, M., et al. Observations of DG Tauri with the Keck Interferometer.

Ligon, R. See Swain, Mark, et al. Interferometer Observations of Subparsec-Scale Infrared Emission in the Nucleus of NGC 4151.

Liguori, M. High-Resolution Simulations of Non-Gaussian Cosmic Microwave Background Maps in Spherical Coordinates. *M. Liguori, S. Matarrese, & L. Moscardini.* 597, 57 (2003)

Lilje, Per B. Weak Gravitational Lensing by a Sample of X-Ray–luminous Clusters of Galaxies. III. Serendipitous Weak Lensing Detections of Dark and Luminous Mass Concentrations. *Haakon Dahle, Kristian Pedersen, Per B. Lilje, Steve J. Maddox, & Nick Kaiser.* 591, 662 (2003)

Lilleleht, Lembit U. Zinc Crystal Growth in Microgravity. *B. P. Michael, Joseph A. Nuth III, & Lembit U. Lilleleht.* 590, 579 (2003)

Lilly, S. J. See Webb, T. M., et al. The Canada–United Kingdom Deep Submillimeter Survey. V. The Submillimeter Properties of Lyman Break Galaxies.

See Webb, T. M., et al. The Canada-UK Deep Submillimeter Survey. VI. The 3 Hour Field.

The Canada-UK Deep Submillimeter Survey. VII. Optical and Near-Infrared Identifications for the 14 Hour Field. *T. M. A. Webb, S. J. Lilly, D. L. Clements, S. Eales, M. Yun, M. Brodwin, L. Dunne, & W. K. Gear.* 597, 680 (2003)

Lilly, Simon J. Evolution of Cluster Elliptical Galaxies. *L. Felipe Barrientos & Simon J. Lilly.* 596, 129 (2003)

The Metallicities of Star-forming Galaxies at Intermediate Redshifts $0.47 < z < 0.92$. *Simon J. Lilly, C. Marcella Carollo, & Alan N. Stockton.* 597, 730 (2003)

Lima, Celso L. Pion Production in the Inner Disk Around Cygnus X-1. *Cesar Meirelles Filho, Celso L. Lima, Hideaki Miyake, & Varese Timoteo.* 595, 322 (2003)

Limon, M. See Bennett, C. L., et al. The *Microwave Anisotropy Probe* Mission.

See Page, L., et al. The Optical Design and Characterization of the *Microwave Anisotropy Probe*.

See Jarosik, N., et al. Design, Implementation, and Testing of the *Microwave Anisotropy Probe* Radiometers.

See Bennett, C. L., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Preliminary Maps and Basic Results.

See Jarosik, N., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: On-Orbit Radiometer Characterization.

See Page, L., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Beam Profiles and Window Functions.

See Barnes, C., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Galactic Signal Contamination from Sidelobe Pickup.

See Hinshaw, G., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Data Processing Methods and Systematic Errors Limits.

See Bennett, C. L., et al. First-Year *Wilkinson Microwave Anisotrophy Probe* (*WMAP*) Observations: Foreground Emission.

See Komatsu, E., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Tests of Gaussianity.

See HINSHAW, G., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: The Angular Power Spectrum.
See KOGUT, A., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Temperature-Polarization Correlation.
See SPERGEL, D. N., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Determination of Cosmological Parameters.
See VERDE, L., et al. First-Year *Wilkinson Microwave Anisotrophy Probe* (*WMAP*) Observations: Parameter Estimation Methodology.
See PEIRIS, H. V., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Implications for Inflation.
See PAGE, L., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Interpretation of the TT and TE Angular Power Spectrum Peaks.

LIMONGI, MARCO. Evolution, Explosion, and Nucleosynthesis of Core-Collapse Supernovae. *Marco Limongi & Alessandro Chieffi.* 592, 404 (2003)
On the Origin of HE 0107−5240, the Most Iron-deficient Star Presently Known. *Marco Limongi, Alessandro Chieffi, & Piercarlo Bonifacio.* 594, L123 (2003)

LIN, D. N. C. Eccentricity Evolution of Extrasolar Multiple Planetary Systems Due to the Depletion of Nascent Protostellar Disks. *M. Nagasawa, D. N. C. Lin, & S. Ida.* 586, 1374 (2003)
Surface Outflow in Optically Thick Dust Disks by Radiation Pressure. *Taku Takeuchi & D. N. C. Lin.* 593, 524 (2003)
The White Dwarf Deficit in Open Clusters: Dynamical Processes. *M. Fellhauer, D. N. C. Lin, M. Bolte, S. J. Aarseth, & K. A. Williams.* 595, L53 (2003)
Star Formation and Feedback in Dwarf Galaxies. *Shawfeng Dong, D. N. C. Lin, & S. D. Murray.* 596, 930 (2003)

LIN, DOUGLAS N. C. The Effect of Tidal Inflation Instability on the Mass and Dynamical Evolution of Extrasolar Planets with Ultrashort Periods. *Pin-Gao Gu, Douglas N. C. Lin, & Peter H. Bodenheimer.* 588, 509 (2003)
Supernova Enrichment of Dwarf Spheroidal Galaxies. *P. Chris Fragile, Stephen D. Murray, Peter Anninos, & Douglas N. C. Lin.* 590, 778 (2003)
On the Radii of Extrsolar Giant Planets. *Peter Bodenheimer, Gregory Laughlin, & Douglas N. C. Lin.* 592, 555 (2003)
Roche Lobe Overflow from Dwarf Stellar Systems. *Stephen D. Murray, Shawfeng Dong, & Douglas N. C. Lin.* 593, 301 (2003)
Vortices in the Co-orbital Region of an Embedded Protoplanet. *Hui Li, Josef Koller, & Douglas N. C. Lin.* 596, L91 (2003)

LIN, JUN. Dynamical and Physical Properties of a Post–Coronal Mass Ejection Current Sheet. *Yuan-Kuen Ko, John C. Raymond, Jun Lin, Gareth Lawrence, Jing Li, & Andrzej Fludra.* 594, 1068 (2003)

LIN, R. P. Electron Properties and Coulomb Collisions in the Solar Wind at 1 AU: *WIND* Observations. *C. Salem, D. Hubert, C. Lacombe, S. D. Bale, A. Mangeney, D. E. Larson, & R. P. Lin.* 585, 1147 (2003)
RHESSI Observations of Particle Acceleration and Energy Release in an Intense Solar Gamma-Ray Line Flare. *R. P. Lin, S. Krucker, G. J. Hurford, D. M. Smith, H. S. Hudson, G. D. Holman, R. A. Schwartz, B. R. Dennis, G. H. Share, R. J. Murphy, A. G. Emslie, C. Johns-Krull, & N. Vilmer.* 595, L69 (2003)
First Gamma-Ray Images of a Solar Flare. *G. J. Hurford, R. A. Schwartz, S. Krucker, R. P. Lin, D. M. Smith, & N. Vilmer.* 595, L77 (2003)
High-Resolution Spectroscopy of Gamma-Ray Lines from the X-Class Solar Flare of 2002 July 23. *D. M. Smith, G. H. Share, R. J. Murphy, R. A. Schwartz, A. Y. Shih, & R. P. Lin.* 595, L81 (2003)
Physical Implications of *RHESSI* Neutron-Capture Line Measurements. *R. J. Murphy, G. H. Share, X.-M. Hua, R. P. Lin, D. M. Smith, & R. A. Schwartz.* 595, L93 (2003)
Hard X-Ray Source Motions in the 2002 July 23 Gamma-Ray Flare. *Säm Krucker, G. J. Hurford, & R. P. Lin.* 595, L103 (2003)

LIN, ROBERT P. See SHARE, GERALD H., et al. High-Resolution Observation of the Solar Positron-Electron Annihilation Line.
Directionality of Flare-accelerated α-Particles at the Sun. *Gerald H. Share, Ronald J. Murphy, David M. Smith, Robert P. Lin, Brian R. Dennis, & Richard A. Schwartz.* 595, L89 (2003)
RHESSI Hard X-Ray Imaging Spectroscopy of the Large Gamma-Ray Flare of 2002 July 23. *A. Gordon Emslie, Eduard P. Kontar, Säm Krucker, & Robert P. Lin.* 595, L107 (2003)

LIN, YEN-TING. Cosmological Implications of the BIMA 30 GHz Sunyaev-Zeldovich Effect Galaxy Cluster Survey. *Yen-Ting Lin & Joseph J. Mohr.* 582, 574 (2003)
Near-Infrared Properties of Galaxy Clusters: Luminosity as a Binding Mass Predictor and the State of Cluster Baryons. *Yen-Ting Lin, Joseph J. Mohr, & S. A. Stanford.* 591, 749 (2003)
Analysis of Clumps in Molecular Cloud Models: Mass Spectrum, Shapes, Alignment, and Rotation. *Charles F. Gammie, Yen-Ting Lin, James M. Stone, & Eve C. Ostriker.* 592, 203 (2003)

LINDAHL, P. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

LINDLER, DON J. Emission-Line Galaxies in the Space Telescope Imaging Spectrograph Parallel Survey. I. Observations and Data Analysis. *Harry I. Teplitz, Nicholas R. Collins, Jonathan P. Gardner, Robert S. Hill, Sara R. Heap, Don J. Lindler, Jason Rhodes, & Bruce E. Woodgate.* 146, 209 (2003)

LINEWEAVER, CHARLES H. What Fraction of Sun-like Stars Have Planets? *Charles H. Lineweaver & Daniel Grether.* 598, 1350 (2003)

LING, A. G. Coronal Mass Ejections, the Tail of the Solar Wind Magnetic Field Distribution, and 11 Year Cosmic-Ray Modulation at 1 AU. *E. W. Cliver, A. G. Ling, & I. G. Richardson.* 592, 574 (2003)

LING, J. C. BATSE Soft Gamma-Ray Observations of GRO J0422+32. *J. C. Ling & Wm. A. Wheaton.* 584, 399 (2003)
Gamma-Ray Spectra and Variability of the Crab Nebula Emission Observed by BATSE. *J. C. Ling & Wm. A. Wheaton.* 598, 334 (2003)

LINGENFELTER, R. E. Limits to the Casseiopeia A ^{44}Ti Line Flux and Constraints on the Ejecta Energy and the Compact Source. *R. E. Rothschild & R. E. Lingenfelter.* 582, 257 (2003)
The Myriad-Source Model of Cosmic Rays. I. Steady State Age and Path Length Distributions. *J. C. Higdon & R. E. Lingenfelter.* 582, 330 (2003)
The Superbubble Origin of ^{22}Ne in Cosmic Rays. *J. C. Higdon & R. E. Lingenfelter.* 590, 822 (2003)
Actinides in the Source of Cosmic Rays and the Present Interstellar Medium. *R. E. Lingenfelter, J. C. Higdon, K.-L. Kratz, & B. Pfeiffer.* 591, 228 (2003)

LINK, BENNETT. The Crustal Rigidity of a Neutron Star, and Implications for PSR 1828−11 and Other Precession Candidates. *Curt Cutler, Greg Ushomirsky, & Bennett Link.* 588, 975 (2003)

LINK, ROBERT P. The Thermal Regulation of Gravitational Instabilities in Protoplanetary Disks. *Brian K. Pickett, Annie C. Mejía, Richard H. Durisen, Patrick M. Cassen, Donald K. Berry, & Robert P. Link.* 590, 1060 (2003)

LINKER, J. Coronal Mass Ejection: Initiation, Magnetic Helicity, and Flux Ropes. I. Boundary Motion–driven Evolution. *T. Amari, J. F. Luciani, J. J. Aly, Z. Mikic, & J. Linker.* 585, 1073 (2003)
Coronal Mass Ejection: Initiation, Magnetic Helicity, and Flux Ropes. II. Turbulent Diffusion–driven Evolution. *T. Amari, J. F. Luciani, J. J. Aly, Z. Mikic, & J. Linker.* 595, 1231 (2003)

LINSKY, JEFFREY L. *Chandra*, *Extreme Ultraviolet Explorer*, and Very Large Array Observations of the Active Binary System σ^2 Coronae Borealis. *Rachel A. Osten, Thomas R. Ayres, Alexander Brown, Jeffrey L. Linsky, & Anita Krishnamurthi.* 582, 1073 (2003)
Space Telescope Imaging Spectrograph Survey of Far-Ultraviolet Coronal Forbidden Lines in Late-Type Stars. *Thomas R. Ayres, Alexander Brown, Graham M. Harper, Rachel A. Osten, Jeffrey L. Linsky, Brian E. Wood, & Seth Redfield.* 583, 963 (2003)
A *Far Ultraviolet Spectroscopic Explorer* Survey of Coronal Forbidden Lines in Late-Type Stars. *Seth Redfield, Thomas R. Ayres, Jeffrey L. Linsky, Thomas B. Ake, A. K. Dupree, Richard D. Robinson, & Peter R. Young.* 585, 993 (2003)
A Search for Lyα Emission from the Astrosphere of 40 Eridani A. *Brian E. Wood, Jeffrey L. Linsky, Hans-Reinhard Mueller, & Gary P. Zank.* 591, 1210 (2003)

LINTON, E. T. See HOLDER, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.
See DE LA CALLE PÉREZ, I., et al. Search for High-Energy Gamma Rays from an X-Ray–Selected Blazar Sample.

LINTON, M. G. Three-Dimensional Reconnection of Untwisted Magnetic Flux Tubes. *M. G. Linton & E. R. Priest.* 595, 1259 (2003)

LINZ, H. NGC 2264 IRS 1: The Central Engine and Its Cavity. *K. Schreyer, B. Stecklum, H. Linz, & Th. Henning.* 599, 334 (2003)

LIPKIN, Y. See PRICE, P. A., et al. Discovery of GRB 020405 and Its Late Red Bump.

LIS, D. C. From Massive Protostars to a Giant H II Region: Submillimeter Imaging of the Galactic Ministarburst W43. *F. Motte, P. Schilke, & D. C. Lis.* 582, 277 (2003)

Dense Molecular Clumps in the Orion Bar Photon-dominated Region. *D. C. Lis & P. Schilke.* 597, L145 (2003)

LISSAUER, JACK J. Resonant Inclination Excitation of Migrating Giant Planets. *Edward W. Thommes & Jack J. Lissauer.* 597, 566 (2003)

LISTER, M. L. 4C +12.50: A Superluminal Precessing Jet in the Recent Merger System IRAS 13451+1232. *M. L. Lister, K. I. Kellermann, R. C. Vermeulen, M. H. Cohen, J. A. Zensus, & E. Ros.* 584, 135 (2003)

Jet Collimation in Action: Realignment on Kiloparsec Scales in 3C 279. *D. C. Homan, M. L. Lister, K. I. Kellermann, M. H. Cohen, E. Ros, J. A. Zensus, M. Kadler, & R. C. Vermeulen.* 589, L9 (2003)

Altered Luminosity Functions of Relativistically Beamed Jet Populations. *M. L. Lister.* 599, 105 (2003)

LITES, B. W. The Evolution of Vector Magnetic Fields in an Emerging Flux Region. *M. Kubo, T. Shimizu, & B. W. Lites.* 595, 465 (2003)

Magnetic Maps of Prominences from Full Stokes Analysis of the He I D3 Line. *R. Casini, A. López Ariste, S. Tomczyk, & B. W. Lites.* 598, L67 (2003)

LITHWICK, YORAM. Imbalanced Weak Magnetohydrodynamic Turbulence. *Yoram Lithwick & Peter Goldreich.* 582, 1220 (2003)

LITTMAN, MICHAEL G. Extrasolar Planet Finding via Optimal Apodized-Pupil and Shaped-Pupil Coronagraphs. *N. Jeremy Kasdin, Robert J. Vanderbei, David N. Spergel, & Michael G. Littman.* 582, 1147 (2003)

LITVAK, M. See PRICE, P. A., et al. Discovery of GRB 020405 and Its Late Red Bump.

See GREINER, J., et al. GRB 011121: A Collimated Outflow into Wind-blown Surroundings.

LITVAK, MAXIM L. See MITROFANOV, IGOR G., et al. Comparison of Redshift-known Gamma-Ray Bursts with the Main Groups of Bright BATSE Events.

LITZÉN, U. Experimental f-Value and Isotopic Structure for the Ni I Line Blended with [O I] at 6300 Å. *S. Johansson, U. Litzén, H. Lundberg, & Z. Zhang.* 584, L107 (2003)

LIU, B. F. Spectra from a Magnetic Reconnection–heated Corona in Active Galactic Nuclei. *B. F. Liu, S. Mineshige, & K. Ohsuga.* 587, 571 (2003)

LIU, D. B. Does the Iron Kα Line of Active Galactic Nuclei Arise from the Cerenkov Line-like Radiation? *J. H. You, D. B. Liu, W. P. Chen, L. Chen, & S. N. Zhang.* 599, 164 (2003)

LIU, GUO-CHIN. Observational Strategies of Cosmic Microwave Background Temperature and Polarization Interferometry Experiments. *Chan-Gyung Park, Kin-Wang Ng, Changbom Park, Guo-Chin Liu, & Keiichi Umetsu.* 589, 67 (2003)

LIU, JI-FENG. A Scattered Light Echo around SN 1993J in M81. *Ji-Feng Liu, Joel N. Bregman, & Patrick Seitzer.* 582, 919 (2003)

LIU, LIN. The Dynamical Simulations of the Planets Orbiting GJ 876: Erratum (ApJ, 572, 1041 [2002]). *Jianghui Ji, Guangyu Li, & Lin Liu.* 582, 558 (2003) (Orig. paper in 572, 1041 (2002))

Could the 55 Cancri Planetary System Really Be in the 3:1 Mean Motion Resonance? *Jianghui Ji, Hiroshi Kinoshita, Lin Liu, & Guangyu Li.* 585, L139 (2003)

The Librating Companions in HD 37124, HD 12661, HD 82943, 47 Ursa Majoris, and GJ 876: Alignment or Antialignment? *Jianghui Ji, Lin Liu, Hiroshi Kinoshita, Jilin Zhou, Hiroshi Nakai, & Guangyu Li.* 591, L57 (2003)

LIU, MICHAEL C. Measuring Distances and Probing the Unresolved Stellar Populations of Galaxies Using Infrared Surface Brightness Fluctuations. *Joseph B. Jensen, John L. Tonry, Brian J. Barris, Rodger I. Thompson, Michael C. Liu, Marcia J. Rieke, Edward A. Ajhar, & John P. Blakeslee.* 583, 712 (2003)

A Survey for Circumstellar Disks around Young Substellar Objects. *Michael C. Liu, Joan Najita, & Alan T. Tokunaga.* 585, 372 (2003)

A Giant Outburst at Millimeter Wavelengths in the Orion Nebula. *Geoffrey C. Bower, Richard L. Plambeck, Alberto Bolatto, Nate McCrady, James R. Graham, Imke de Pater, Michael C. Liu, & Frederick K. Baganoff.* 598, 1140 (2003)

LIU, S.-Y. A Sensitive Very Large Array Search for Small-Scale Glycine Emission toward OMC-1. *J. M. Hollis, J. A. Pedelty, L. E. Snyder, P. R. Jewell, F. J. Lovas, Patrick Palmer, & S.-Y. Liu.* 588, 353 (2003)

A Survey of Acetic Acid toward Hot Molecular Cores. *A. Remijan, L. E. Snyder, D. N. Friedel, S.-Y. Liu, & R. Y. Shah.* 590, 314 (2003)

Kinematics of the SGR B2 (N-LMH) Molecular Core. *Jan M. Hollis, J. A. Pedelty, D. A. Boboltz, S.-Y. Liu, L. E. Snyder, Patrick Palmer, F. J. Lovas, & P. R. Jewell.* 596, L235 (2003)

LIU, SIMING. Shadowing of the Nascent Jet in NGC 4261 by a Line-Emitting Supersonic Accretion Disk. *Siming Liu, Michael J. Fromerth, & Fulvio Melia.* 596, 879 (2003)

LIU, WILSON M. A Resolved Circumstellar Disk around the Herbig Ae Star HD 00546 in the Thermal Infrared. *Wilson M. Liu, Philip M. Hinz, Michael R. Meyer, Eric E. Mamajek, William F. Hoffman, & Joseph L. Hora.* 598, L111 (2003)

LIU, YU. Observational Evidence of a Magnetic Flux Rope Eruption Associated with the X3 Flare on 2002 July 15. *Yu Liu, Yunchun Jiang, Haishen Ji, Hongqi Zhang, & Haimin Wang.* 593, L137 (2003)

LIVINGSTON, W. Weak Infrared Molecular Lines Reveal Rapid Outflow in Cool Magnetic Sunspot Penumbral Fibrils. *M. J. Penn, W. D. Cao, S. R. Walton, G. A. Chapman, & W. Livingston.* 590, L119 (2003)

LIVIO, MARIO. The Disk-Jet Connection in Microquasars and Active Galactic Nuclei. *Mario Livio, J. E. Pringle, & A. R. King.* 593, 184 (2003)

Star Formation at the Twilight of the Dark Ages: Which Stars Reionized the Universe? *Rachel S. Somerville & Mario Livio.* 593, 611 (2003)

The Epoch of Reionization in Models with Reduced Small-Scale Power. *Rachel S. Somerville, James S. Bullock, & Mario Livio.* 593, 616 (2003)

Have the Elusive Progenitors of Type Ia Supernovae Been Discovered? *Mario Livio & Adam G. Riess.* 594, L93 (2003)

LLOYD, D. A. X-Ray Studies of Two Neutron Stars in 47 Tucanae: Toward Constraints on the Equation of State. *C. O. Heinke, J. E. Grindlay, D. A. Lloyd, & P. D. Edmonds.* 588, 452 (2003)

A *Chandra* X-Ray Study of the Dense Globular Cluster Terzan 5. *C. O. Heinke, P. D. Edmonds, J. E. Grindlay, D. A. Lloyd, H. N. Cohn, & P. M. Lugger.* 590, 809 (2003)

Analysis of the Quiescent Low-Mass X-Ray Binary Populaton in Galactic Globular Clusters. *C. O. Heinke, J. E. Grindlay, P. M. Lugger, H. N. Cohn, P. D. Edmonds, D. A. Lloyd, & A. M. Cool.* 598, 501 (2003)

A *Chandra* X-Ray Study of the Globular Cluster M80. *C. O. Heinke, J. E. Grindlay, P. M. Lugger, H. N. Cohn, P. D. Edmonds, D. A. Lloyd, & S. S. Murray.* 598, 516 (2003)

LLOYD, DON A. Optical and X-Ray Properties of Cooling Neutron Stars. *Don A. Lloyd, Lars Hernquist, & Jeremy S. Heyl.* 593, 1024 (2003)

LLOYD-EVANS, J. See HOLDER, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.

See HALL, T. A., et al. Search for TeV Emissions from Pulsars in Binary Systems.

See DE LA CALLE PÉREZ, I., et al. Search for High-Energy Gamma Rays from an X-Ray–Selected Blazar Sample.

LLOYD-HART, MICHAEL. See CLOSE, LAIRD M., et al. Mid-Infrared Imaging of the Post–Asymptotic Giant Branch Star AC Herculis with the Multiple Mirror Telescope Adaptive Optics System.

See CLOSE, LAIRD M., et al. High-Resolution Images of Orbital Motion in the Trapezium Cluster: First Scientific Results from the Multiple Mirror Telescope Deformable Secondary Mirror Adaptive Optics System.

LO, K. Y. Variability of Sagittarius A*: Flares at 1 Millimeter. *Jun-Hui Zhao, K. H. Young, R. M. Herrnstein, P. T. P. Ho, T. Tsutsumi, K. Y. Lo, W. M. Goss, & G. C. Bower.* 586, L29 (2003)

Star Formation and the Interstellar Medium in Four Dwarf Irregular Galaxies. *L. M. Young, L. van Zee, K. Y. Lo, R. C. Dohm-Palmer, & Michelle E. Beierle.* 592, 111 (2003)

LOBEL, A. High-Resolution Spectroscopy of the Yellow Hypergiant ρ Cassiopeiae from 1993 through the Outburst of 2000–2001. *A. Lobel, A. K. Dupree, R. P. Stefanik, G. Torres, G. Israelian, N. Morrison, C. de Jager, H. Nieuwenhuijzen, I. Ilyin, & F. Musaev.* 583, 923 (2003)

LOCKMAN, FELIX J. High-Velocity Cloud Complex H: A Satellite of the Milky Way in a Retrograde Orbit? *Felix J. Lockman.* 591, L33 (2003)

LODDERS, KATHARINA. Solar System Abundances and Condensation Temperatures of the Elements. *Katharina Lodders.* 591, 1220 (2003)

LODIEU, N. See GREINER, J., et al. GRB 011121: A Collimated Outflow into Wind-blown Surroundings.

LOEB, ABRAHAM. Gamma Rays from Intergalactic Shocks. *Uri Keshet, Eli Waxman, Abraham Loeb, Volker Springel, & Lars Hernquist.* 585, 128 (2003)

Reionization of Hydrogen and Helium by Early Stars and Quasars. *J. Stuart B. Wyithe & Abraham Loeb.* 586, 693 (2003)

Metal Absorption Lines as Probes of the Intergalactic Medium Prior to the Reionization Epoch. *Steven R. Furlanetto & Abraham Loeb.* 588, 18 (2003)

Was the Universe Reionized by Massive Metal-free Stars? *J. Stuart B. Wyithe & Abraham Loeb.* 588, L69 (2003)

Periodic Flux Variability of Stars Due to the Reflex Doppler Effect Induced by Planetary Companions. *Abraham Loeb & B. Scott Gaudi.* 588, L117 (2003)

Cosmological Origin of the Stellar Velocity Dispersions in Massive Early-Type Galaxies. *Abraham Loeb & P. J. E. Peebles.* 589, 29 (2003)

Low-Frequency Gravitational Waves from Massive Black Hole Binaries: Predictions for *LISA* and Pulsar Timing Arrays. *J. Stuart B. Wyithe & Abraham Loeb.* 590, 691 (2003)

Effects of Wandering on the Coalescence of Black Hole Binaries in Galactic Centers. *Pinaki Chatterjee, Lars Hernquist, & Abraham Loeb.* 592, 32 (2003)

Radio Imaging of Gamma-Ray Burst Jets in Nearby Supernovae. *Jonathan Granot & Abraham Loeb.* 593, L81 (2003)

Stability of an Ultrarelativistic Blast Wave in an External Medium with a Steep Power-Law Density Profile. *Xiaohu Wang, Abraham Loeb, & Eli Waxman.* 594, 924 (2003)

Self-regulated Growth of Supermassive Black Holes in Galaxies as the Origin of the Optical and X-Ray Luminosity Functions of Quasars. *J. Stuart B. Wyithe & Abraham Loeb.* 595, 614 (2003)

Formation of the First Supermassive Black Holes. *Volker Bromm & Abraham Loeb.* 596, 34 (2003)

LÖHMER, O. The Proper Motion, Age, and Initial Spin Period of PSR J0538+2817 in S147. *M. Kramer, A. G. Lyne, G. Hobbs, O. Löhmer, P. Carr, C. Jordan, & A. Wolszczan.* 593, L31 (2003)

LOEWENSTEIN, R. F. See NOVAK, G., et al. First Results from the Submillimeter Polarimeter for Antarctic Remote Observations: Evidence of Large-Scale Toroidal Magnetic Fields in the Galactic Center.

LOINARD, L. CO Depletion and Deuterium Fractionation in Prestellar Cores. *A. Bacmann, B. Lefloch, C. Ceccarelli, J. Steinacker, A. Castets, & L. Loinard.* 585, L55 (2003)

LOINARD, LAURENT. Very Large Array Observations of Proper Motions in L1551 IRS 5. *Luis F. Rodríguez, Salvador Curiel, Jorge Cantó, Laurent Loinard, Alejandro C. Raga, & Jose M. Torrelles.* 583, 330 (2003)

Ejection of a Low-Mass Star in a Young Stellar System in Taurus. *Laurent Loinard, Luis F. Rodríguez, & Monica I. Rodríguez.* 587, L47 (2003)

LOMBARDI, M. See FOSBURY, R. A. E., et al. Massive Star Formation in a Gravitationally Lensed H II Galaxy at $z = 3.357$.

LONG, DAN. See SCHMIDT, GARY D., et al. Magnetic White Dwarfs from the Sloan Digital Sky Survey: The First Data Release.

LONG, K. S. See ARAUJO-BETANCOR, S., et al. System Parameters of DW Ursae Majoris.

LONG, KNOX S. Accretion and Outflow in Interacting Binary Systems: *Far Ultraviolet Spectropscopic Explorer* Observations of the Nova-like Cataclysmic Variable UX Ursae Majoris. *Cynthia S. Froning, Knox S. Long, & Christian Knigge.* 584, 433 (2003)

The SN 1006 Remnant: Optical Proper Motions, Deep Imaging, Distance, and Brightness at Maximum. *P. Frank Winkler, Gaurav Gupta, & Knox S. Long.* 585, 324 (2003)

Chandra CCD Imagery of the Northeast and Northwest Limbs of SN 1006. *Knox S. Long, Stephen P. Reynolds, John C. Raymond, P. Frank Winkler, Kristy K. Dyer, & Robert Petre.* 586, 1162 (2003)

Hubble Space Telescope Space Telescope Imaging Spectrograph Spectroscopy of the Intermediate Polar EX Hydrae. *Kunegunda E. Belle, Steve B. Howell, Edward M. Sion, Knox S. Long, & Paula Szkody.* 587, 373 (2003)

WZ Sagittae: *FUSE* Spectroscopy of the 2001 Outburst. *Knox S. Long, Cynthia S. Froning, Boris Gänsicke, Christian Knigge, Edward M. Sion, & Paula Szkody.* 591, 1172 (2003)

See SION, EDWARD M., et al. *Hubble Space Telescope* Spectroscopy of the Unexpected 2001 July Outburst of the Dwarf Nova WZ Sagittae.

See GÄNSICKE, BORIS T., et al. Anomalous Ultraviolet Line Flux Ratios in the Cataclysmic variables 1RXS J232953.9+062814, CE 315, BZ Ursae Majoris, and EY Cygni observed with the *Hubble Space Telescope* Space Telescope Imaging Spectrograph.

Hubble Space Telescope Observations of Ultraviolet Oscillations in WZ Sagittae during the Decline from Outburst. *William F. Welsh, Edward M. Sion, Patrick Godon, Boris T. Gänsicke, Christian Knigge, Knox S. Long, & Paula Szkody.* 599, 509 (2003)

A Far-Ultraviolet Survey of 47 Tucanae. II. The Long-Period Cataclysmic Variable AKO 9. *Christian Knigge, David R. Zurek, Michael M. Shara, Knox S. Long, & Ronald L. Gilliland.* 599, 1320 (2003)

LONGCOPE, D. W. Injection of Magnetic Energy and Magnetic Helicity into the Solar Atmosphere by an Emerging Magnetic Flux Tube. *T. Magara & D. W. Longcope.* 586, 630 (2003)

Magnetic Helicity Injection by Horizontal Flows in the Quiet Sun. I. Mutual-Helicity Flux. *B. T. Welsch & D. W. Longcope.* 588, 620 (2003)

Binary Reconnection and the Heating of the Solar Corona. *E. R. Priest, D. W. Longcope, & V. S. Titov.* 598, 667 (2003)

A Viscoelastic Theory of Turbulent Fluid Permeated with Fibril Magnetic Fields. *D. W. Longcope, T. C. B. McLeish, & G. H. Fisher.* 599, 661 (2003)

LONGCOPE, DANA W. Helicity Evolution in Emerging Active Regions. *Alexei A. Pevtsov, Vasily M. Maleev, & Dana W. Longcope.* 593, 1217 (2003)

TRACE and *Yohkoh* Observations of a White-Light Flare. *Thomas R. Metcalf, David Alexander, Hugh S. Hudson, & Dana W. Longcope.* 595, 483 (2003)

Detection of a Taylor-like Plasma Relaxation Process in the Sun. *Dibyendu Nandy, Michael Hahn, Richard C. Canfield, & Dana W. Longcope.* 597, L73 (2003)

The Relationship Between X-Ray Radiance and Magnetic Flux. *Alexei A. Pevtsov, George H. Fisher, Loren W. Acton, Dana W. Longcope, Christopher M. Johns-Krull, Charles C. Kankelborg, & Thomas R. Metcalf.* 598, 1387 (2003)

LONSDALE, C. J. Models for Evolution of Dusty and E/S0 Galaxies Seen in Multiband Surveys. *C. K. Xu, C. J. Lonsdale, D. L. Shupe, A. Franceschini, C. Martin, & D. Schiminovich.* 587, 90 (2003)

R Cassiopeiae: Relative Strengths of SiO Masers at 43 and 86 GHz. *R. B. Phillips, A. H. Straughn, S. S. Doeleman, & C. J. Lonsdale.* 588, L105 (2003)

LONSDALE, CAROL J. See KURASZKIEWICZ, JOANNA K., et al. The Far-Infrared Spectral Energy Distributions of X-Ray–selected Active Galaxies.

VLBI Imaging of Luminous Infrared Galaxies: Active Galactic Nucleus Cores in Markarian 231, UGC 5101, and NGC 7469. *Carol J. Lonsdale, Colin J. Lonsdale, Harding E. Smith, & Philip J. Diamond.* 592, 804 (2003)

LONSDALE, COLIN J. VLBI Imaging of Luminous Infrared Galaxies: Active Galactic Nucleus Cores in Markarian 231, UGC 5101, and NGC 7469. *Carol J. Lonsdale, Colin J. Lonsdale, Harding E. Smith, & Philip J. Diamond.* 592, 804 (2003)

LOOMIS, KAREN. Rapid Brightness Fluctuations in Q0957+561A,B: Microlensing or Seeing? *Wesley N. Colley, Irwin I. Shapiro, Jennifer Pegg, Edwin L. Turner, Tomislav Kundić, Karen Loomis, N. C. Hastings, & Russet McMillan.* 588, 711 (2003)

LOONEY, LESLIE W. Envelope Emission in Young Stellar Systems: A Subarcsecond Survey of Circumstellar Structure. *Leslie W. Looney, Lee G. Mundy, & W. J. Welch.* 592, 255 (2003)

Realizing Integral Field Spectroscopy in the Far-Infrared. *Leslie W. Looney, Walfried Raab, Albrecht Poglitsch, & Norbert Geis.* 597, 628 (2003)

LOPEZ-ARISTE, A. Improved Estimate of the Magnetic Field in a Prominence. *A. Lopez-Ariste & R. Casini.* 582, L51 (2003)

Magnetic Maps of Prominences from Full Stokes Analysis of the He I D3 Line. *R. Casini, A. López Ariste, S. Tomczyk, & B. W. Lites.* 598, L67 (2003)

LOPEZ-CRUZ, OMAR. See COLLEY, WESLEY N., et al. Around-the-Clock Observations of the Q9057+561A,B Gravitationally Lensed Quasar. II. Results for the Second Observing Season.

LÓPEZ-MARTÍN, LUIS. The High-Excitation Planetary Nebula NGC 246: Optical and Near-Ultraviolet Observations and Two-Dimensional Numerical Models. *Andrew Szentgyorgyi, John Raymond, José Franco, Eva Villaver, & Luis López-Martín.* 594, 874 (2003)

LORIMER, D. R. The Probability Distribution of Binary Pulsar Coalescence Rates. I. Double Neutron Star Systems in the Galactic Field. *C. Kim, V. Kalogera, & D. R. Lorimer.* 584, 985 (2003)

See MCLAUGHLIN, M. A., et al. PSR J1847−0130: A Radio Pulsar with Magnetar Spin Characteristics.

LOTZ, JENNIFER M. The Star-forming Dwarf Galaxy Populations of two $z \sim 0.4$ Clusters: MS 1512.4+3647 and A851. *Jennifer M. Lotz, Crystal L. Martin, & Henry C. Ferguson.* 596, 143 (2003)

LOVAS, F. J. A Sensitive Very Large Array Search for Small-Scale Glycine Emission toward OMC-1. *J. M. Hollis, J. A. Pedelty, L. E. Snyder, P. R. Jewell, F. J. Lovas, Patrick Palmer, & S.-Y. Liu.* 588, 353 (2003)

Kinematics of the SGR B2 (N-LMH) Molecular Core. *Jan M. Hollis, J. A. Pedelty, D. A. Boboltz, S.-Y. Liu, L. E. Snyder, Patrick Palmer, F. J. Lovas, & P. R. Jewell.* 596, L235 (2003)

Loveday, Jon. See Eisenstein, Daniel J., et al. Average Spectra of Massive Galaxies in the Sloan Digital Sky Survey.

See Glazebrook, Karl, et al. The Sloan Digital Sky Survey: The Cosmic Spectrum and Star Formation History.

See Szalay, Alexander S., et al. Karhunen-Loève Estimation of the Power Spectrum Parameters from the Angular Distribution of Galaxies in Early Sloan Digital Sky Survey Data.

See Blanton, Michael R., et al. The Galaxy Luminosity Function and Luminosity Density at Redshift $z = 0.1$.

See Blanton, Michael R., et al. The Broadband Optical Properties of Galaxies with Redshifts $0.02 < z < 0.22$.

Loveday, Jon N. See Budavári, Tamás, et al. Angular Clustering with Photometric Redshifts in the Sloan Digital Sky Survey: Bimodality in the Clustering Properties of Galaxies.

Lovelace, R. V. E. Lepton Acceleration by Relativistic Collisionless Magnetic Reconnection. *D. A. Larrabee, R. V. E. Lovelace, & M. M. Romanova.* 586, 72 (2003)

Magnetohydrodynamic Simulations of Accretion to a Star in the "Propeller" Regime. *M. M. Romanova, O. D. Toropina, Yu. M. Toropin, & R. V. E. Lovelace.* 588, 400 (2003)

Magnetic Inhibition of Accretion and Observability of Isolated Old Neutron Stars. *O. D. Toropina, M. M. Romanova, Yu. M. Toropin, & R. V. E. Lovelace.* 593, 472 (2003)

Three-Dimensional Simulations of Disk Accretion to an Inclined Dipole. I. Magnetospheric Flows at Different Θ. *M. M. Romanova, G. V. Ustyugova, A. V. Koldoba, J. V. Wick, & R. V. E. Lovelace.* 595, 1009 (2003)

Relativistic Poynting Jets from Accretion Disks. *R. V. E. Lovelace & M. M. Romanova.* 596, L159 (2003)

Lovell, J. E. J. The Discovery of H_2O Maser Emission in Seven Active Galactic Nuclei and at High Velocities in the Circinus Galaxy. *L. J. Greenhill, P. T. Kondrakto, J. E. J. Lovell, T. B. H. Kuiper, J. M. Moran, D. L. Jauncey, & G. P. Baines.* 582, L11 (2003)

See Bignall, H. E., et al. Rapid Variability and Annual Cycles in the Characteristic Timescale of the Scintillating Source PKS 1257−326.

Lovell, James E. J. The Quintuple Quasar: Radio and Optical Observations. *Joshua N. Winn, Christopher S. Kochanek, Charles R. Keeton, & James E. J. Lovell.* 590, 26 (2003)

Lovellette, M. N. See Tournear, D., et al. X-Ray Bursts in Neutron Star and Black Hole Binaries from Unconvetional Stellar Aspect Experiment and *Rossi X-Ray Timing Explorer* Data: Detections and Upper Limits.

Low, B. C. Magnetic Flux Emergence into the Solar Corona. III. The Role of Magnetic Helicity Conservation. *M. Zhang & B. C. Low.* 584, 479 (2003)

A Morphological Study of Helical Coronal Magnetic Structures. *B. C. Low & M. A. Berger.* 589, 644 (2003)

The Mass of a Solar Quiescent Prominence. *B. C. Low, B. Fong, & Y. Fan.* 594, 1060 (2003)

Lowenthal, James D. Clustering of Galaxies at $z \sim 3$ Around the Probable Damped Lyα Absorber Toward QSO APM 08279+5255. *Nicolas Bouche & James D. Lowenthal.* 596, 810 (2003)

Lowrance, Patrick J. The Discovery of Two Nearby Carbon Dwarfs. *Patrick J. Lowrance, J. Davy Kirkpatrick, I. Neill Reid, Kelle L. Cruz, & James Liebert.* 584, L95 (2003)

Lowry, Justin D. Diffuse X-Ray Emission from the Quiescent Superbubble M17, the Omega Nebula. *Bryan C. Dunne, You-Hua Chu, C.-H. Rosie Chen, Justin D. Lowry, Leisa Townsley, Robert A. Gruendl, Martín A. Guerrero, & Margarita Rosado.* 590, 306 (2003)

Lu, H. See Amenomori, M., et al. Multi-TeV Gamma-Ray Flares from Markarian 421 in 2000 and 2001 Observed with the Tibet Air Shower Array.

Lu, N. Physical Conditions and Star Formation Activity in the Intragroup Medium of Stephan's Quintet. *C. K. Xu, N. Lu, J. J. Condon, M. Dopita, & R. J. Tuffs.* 595, 665 (2003)

Lu, Nanyao. Infrared Emission of Normal Galaxies from 2.5 to 12 Microns: *Infrared Space Observatory* Spectra, Near-Infrared Continuum, and Mid-Infrared Emission Features. *Nanyao Lu, George Helou, Michael W. Werner, Harriet L. Dinerstein, Daniel A. Dale, Nancy A. Silbermann, Sangeeta Malhotra, Charles A. Beichman, & Thomas H. Jarrett.* 588, 199 (2003)

Lu, S. L. See Amenomori, M., et al. Multi-TeV Gamma-Ray Flares from Markarian 421 in 2000 and 2001 Observed with the Tibet Air Shower Array.

Lu, T. External Shock Model for the Large-Scale, Relativistic X-Ray Jets from the Microquasar XTE J1550−564. *X. Y. Wang, Z. G. Dai, & T. Lu.* 592, 347 (2003)

Gamma-Ray Bursts from Neutron Star Kicks. *Y. F. Huang, Z. G. Dai, T. Lu, K. S. Cheng, & X. F. Wu.* 594, 919 (2003)

Pair Loading in Gamma-Ray Burst Fireballs and Prompt Emission from Pair-rich Reverse Shocks. *Zhuo Li, Z. G. Dai, T. Lu, & L. M. Song.* 599, 380 (2003)

Lu, W. Prominence Eruptions and Coronal Mass Ejection: A Statistical Study using Microwave Observations. *N. Gopalswamy, M. Shimojo, W. Lu, S. Yashiro, K. Shibasaki, & R. A. Howard.* 586, 562 (2003)

Lu, Y. An Accretion Model for the Growth of the Central Black Hole Associated with Ionization Instability in Quasars. *Y. Lu, K. S. Cheng, & S. N. Zhang.* 590, 52 (2003)

Lu, Youjun. Testing the Binary Black Hole Paradigm through the Fe Kα Line Profile: Application to 3C 273. *Diego F. Torres, Gustavo E. Romero, Xavier Barcons, & Youjun Lu.* 596, L31 (2003)

Lubin, Dan. The Cosmological Baryon Density from the Deuterium-to-Hydrogen Ratio in QSO Absorption Systems: D/H toward Q1243+3047. *David Kirkman, David Tytler, Nao Suzuki, John M. O'Meara, & Dan Lubin.* 149, 1 (2003)

Lubow, S. H. Saturation of the Corotation Resonance in a Gaseous Disk. *G. I. Ogilvie & S. H. Lubow.* 587, 398 (2003)

Lucas, Ray A. Nonnuclear Hyper/Ultraluminous X-Ray Sources in the Starbursting Carthwheel Ring Galaxy. *Yu Gao, Q. Daniel Wang, P. N. Appleton, & Ray A. Lucas.* 596, L171 (2003)

Luciani, J. F. Coronal Mass Ejection: Initiation, Magnetic Helicity, and Flux Ropes. I. Boundary Motion–driven Evolution. *T. Amari, J. F. Luciani, J. J. Aly, Z. Mikic, & J. Linker.* 585, 1073 (2003)

Coronal Mass Ejection: Initiation, Magnetic Helicity, and Flux Ropes. II. Turbulent Diffusion–driven Evolution. *T. Amari, J. F. Luciani, J. J. Aly, Z. Mikic, & J. Linker.* 595, 1231 (2003)

Lueker, M. See Runyan, M. C., et al. ACBAR: The Arcminute Cosmology Bolometer Array Receiver.

See Goldstein, J. H., et al. Estimates of Cosmological Parameters Using the Cosmic Microwave Background Angular Power Spectrum of ACBAR.

Lugaro, Maria. *s*-Process Nucleosynthesis in Asymptotic Giant Branch Stars: A Test for Stellar Evolution. *Maria Lugaro, Falk Herwig, John C. Lattanzio, Roberto Gallino, & Oscar Straniero.* 586, 1305 (2003)

Isotopic Compositions of Strontium, Zirconium, Molybdenum, and Barium in Single Presolar SiC Grains and Asymptotic Giant Branch Stars. *Maria Lugaro, Andrew M. Davis, Roberto Gallino, Michael J. Pellin, Oscar Straniero, & Franz Käppeler.* 593, 486 (2003)

The *s*-Process in Rotating Asymptotic Giant Branch Stars. *Falk Herwig, Norbert Langer, & Maria Lugaro.* 593, 1056 (2003)

Lugger, P. M. The Dynamics of M15: Observations of the Velocity Dispersion Profile and Fokker-Planck Models: Addendum (ApJ, 481, 267 [1997]). *J. D. Dull, H. N. Cohn, P. M. Lugger, B. W. Murphy, P. O. Seitzer, P. J. Callanan, R. G. M. Rutten, & P. A. Charles.* 585, 598 (2003) (Orig. paper in 481, 267 (1997))

A *Chandra* X-Ray Study of the Dense Globular Cluster Terzan 5. *C. O. Heinke, P. D. Edmonds, J. E. Grindlay, D. A. Lloyd, H. N. Cohn, & P. M. Lugger.* 590, 809 (2003)

Analysis of the Quiescent Low-Mass X-Ray Binary Populaton in Galactic Globular Clusters. *C. O. Heinke, J. E. Grindlay, P. M. Lugger, H. N. Cohn, P. D. Edmonds, D. A. Lloyd, & A. M. Cool.* 598, 501 (2003)

A *Chandra* X-Ray Study of the Globular Cluster M80. *C. O. Heinke, J. E. Grindlay, P. M. Lugger, H. N. Cohn, P. D. Edmonds, D. A. Lloyd, & S. S. Murray.* 598, 516 (2003)

Luhman, K. L. New Low-Mass Members of the Taurus Star-forming Region. *K. L. Luhman, Cesar Briceno, John R. Stauffer, Lee Hartmann, D. Barrado y Navascues, & Nelson Caldwell.* 590, 348 (2003)

A Census of the Young Cluster IC 348. *K. L. Luhman, John R. Stauffer, A. A. Muench, G. H. Rieke, E. A. Lada, J. Bouvier, & C. J. Lada.* 593, 1093 (2003)

See Matheson, T., et al. Photometry and Spectroscopy of GRB 03029 and Its Associated Supernova 2003dh: The First Two Months.

Luhman, M. L. The [C II] 158 Micron Line Deficit in Ultraluminous Infrared Galaxies Revisited. *M. L. Luhman, S. Satyapal, J. Fischer, M. G. Wolfire, E. Sturm, C. C. Dudley, D. Lutz, & R. Genzel.* 594, 758 (2003)

LUHMANN, J. See ROUSSEV, I. I., et al. A Three-dimensional Model of the Solar Wind Incorporating Solar Magnetogram Observations.

LUHMANN, J. G. Characteristics of Scatter-free Behavior of Heliospheric Pickup Ions. *J. G. Luhmann.* 592, 1241 (2003)

LUKASIAK, A. *Voyager 2* Measurements in the Outer Heliosphere of the Energy Spectra of Cosmic-Ray Nuclei from Less than 100 MeV Nucleon^{-1} to More than 1.0 GeV Nucleon^{-1}. *W. R. Webber, F. B. McDonald, & A. Lukasiak.* 599, 582 (2003)

LUMB, D. Soft X-Ray Excess Emission in Clusters of Galaxies Observed with *XMM-Newton*. *J. Nevalainen, R. Lieu, M. Bonamente, & D. Lumb.* 584, 716 (2003)

LUMINE, JONATHAN I. Modeling the Formation of Clouds in Brown Dwarf Atmospheres. *Curtis S. Cooper, David Sudarsky, John A. Milsom, Jonathan I. Lunine, & Adam Burrows.* 586, 1320 (2003)

LUND, N. See MEREGHETTI, S., et al. *Integral* and *XMM-Newton* Observations of the Weak Gamma-Ray Burst GRB 030227.

LUNDBERG, H. Experimental f-Value and Isotopic Structure for the Ni I Line Blended with [O I] at 6300 Å. *S. Johansson, U. Litzén, H. Lundberg, & Z. Zhang.* 584, L107 (2003)

LUNDQVIST, PETER. See WANG, LIFAN, et al. Spectropolarimetry of SN 2001el in NGC 1448: Asphericity of a Normal Type Ia Supernova.

See MICHAEL, ELI, et al. *Hubble Space Telescope* Observations of High-Velocity Lyα and Hα Emission from Supernova Remnant 1987A: The Structure and Development of the Reverse Shock.

LUNINE, J. I. On the Indirect Detection of Sodium in the Atmosphere of the Planetary Companion to HD 209458. *J. J. Fortney, D. Sudarsky, I. Hubeny, C. S. Cooper, W. B. Hubbard, A. Burrows, & J. I. Lunine.* 589, 615 (2003)

Modeling the Infrared Emission from the HR 4796A Disk. *Aigen Li & J. I. Lunine.* 590, 368 (2003)

Modeling the Infrared Emission from the HD 141569A Disk. *Aigen Li & J. I. Lunine.* 594, 987 (2003)

Modeling the Infrared Emission from the ϵ Eridani Disk. *Aigen Li, J. I. Lunine, & G. J. Bendo.* 598, L51 (2003)

LUNINE, JONATHAN I. Modeling the Formation of Clouds in Brown Dwarf Atmospheres: Erratum (ApJ, 586, 1320 [2003]). *Curtis S. Cooper, David Sudarsky, John A. Milsom, Jonathan I. Lunine, & Adam Burrows.* 595, 573 (2003) (Orig. paper in 586, 1320 (2003))

Beyond the T Dwarfs: Theoretical Spectra, Colors, and Detectability of the Coolest Brown Dwarfs. *Adam Burrows, David Sudarsky, & Jonathan I. Lunine.* 596, 587 (2003)

LUO, Q. Y. Electron Acceleration by Lower Hybrid Turbulence in Solar Flares. *Q. Y. Luo, F. S. Wei, & X. S. Feng.* 584, 497 (2003)

LUPTON, ROBERT H. See HELMI, AMINA, et al. Selection of Metal-poor Giant Stars Using the Sloan Digital Sky Survey Photometric System.

See SZALAY, ALEXANDER S., et al. Karhunen-Loève Estimation of the Power Spectrum Parameters from the Angular Distribution of Galaxies in Early Sloan Digital Sky Survey Data.

See BLANTON, MICHAEL R., et al. The Broadband Optical Properties of Galaxies with Redshifts $0.02 < z < 0.22$.

See BUDAVÁRI, TAMÁS, et al. Angular Clustering with Photometric Redshifts in the Sloan Digital Sky Survey: Bimodality in the Clustering Properties of Galaxies.

LUPTON, W. See COLAVITA, M., et al. Observations of DG Tauri with the Keck Interferometer.

LURIDIANA, V. The Effect of Collisional Enhancement of Balmer Lines on the Determination of the Primordial Helium Abundance. *V. Luridiana, A. Peimbert, M. Peimbert, & M. Cervino.* 592, 846 (2003)

LUTZ, D. The [C II] 158 Micron Line Deficit in Ultraluminous Infrared Galaxies Revisited. *M. L. Luhman, S. Satyapal, J. Fischer, M. G. Wolfire, E. Sturm, C. C. Dudley, D. Lutz, & R. Genzel.* 594, 758 (2003)

The Nature of Starburst Activity in M82. *N. M. Förster Schreiber, R. Genzel, D. Lutz, & A. Sternberg.* 599, 193 (2003)

LUTZ, DIETER. Spatially Resolved Millimeter Interferometry of SMM J02399−0136: A Very Massive Galaxy at $z = 2.8$. *Reinhard Genzel, Andrew J. Baker, Linda J. Tacconi, Dieter Lutz, Pierre Cox, Stéphane Guilloteau, & Alain Omont.* 584, 633 (2003)

LUZZI, G. See BATTISTELLI, E. S., et al. Triple Experiment Spectrum of the Sunyaev-Zel'dovich Effect in the Coma Cluster: H_0.

LYFORD, NICHOLAS D. Effects of Differential Rotation on the Maximum Mass of Neutron Stars. *Nicholas D. Lyford, Thomas W. Baumgarte, & Stuart L. Shapiro.* 583, 410 (2003)

LYNCH, DAVID K. Near-Infrared Spectrophotometry and the CO Emission in V2274 Cygni (Nova Cygni 2001 No. 1). *Richard J. Rudy, William L. Dimpfl, David K. Lynch, S. Mazuk, Catherine C. Venturini, John C. Wilson, R. C. Puetter, & R. Brad Perry.* 596, 1229 (2003)

LYNE, A. G. A Search for Pulsars in Quiescent Soft X-Ray Transients. I. *M. Burgay, L. Burderi, A. Possenti, N. D'Amico, R. N. Manchester, A. G. Lyne, F. Camilo, & S. Campana.* 589, 902 (2003)

See MCLAUGHLIN, M. A., et al. PSR J1847−0130: A Radio Pulsar with Magnetar Spin Characteristics.

The Proper Motion, Age, and Initial Spin Period of PSR J0538+2817 in S147. *M. Kramer, A. G. Lyne, G. Hobbs, O. Löhmer, P. Carr, C. Jordan, & A. Wolszczan.* 593, L31 (2003)

Three Binary Millisecond Pulsars in NGC 6266. *A. Possenti, N. D'Amico, R. N. Manchester, F. Camilo, A. G. Lyne, J. Sarkissian, & A. Corongiu.* 599, 475 (2003)

LYUBARSKY, Y. See KOUVELIOTOU, C., et al. Unraveling the Cooling Trend of the Soft Gamma Repeater SGR 1627−41.

LYUTIKOV, M. Polarization of Prompt Gamma-Ray Burst Emission: Evidence for Electromagnetically Dominated Outflow. *M. Lyutikov, V. I. Pariev, & R. D. Blandford.* 597, 998 (2003)

LYUTIKOV, MAXIM. The Pulsar Wind Nebula in G11.2−0.3. *Mallory S. E. Roberts, Cindy R. Tam, Victoria M. Kaspi, Maxim Lyutikov, Gautam Vasisht, Michael Pivovaroff, Eric V. Gotthelf, & Nobuyuki Kawai.* 588, 992 (2003)

Dynamics of Relativistic Reconnection. *Maxim Lyutikov & Dmitri Uzdensky.* 589, 893 (2003)

MA, CHUNG-PEI. Schechter versus Schechter: Subarcsecond Gravitational Lensing and Inner Halo Profiles. *Chung-Pei Ma.* 584, L1 (2003)

Small-Scale Cosmic Microwave Background Temperature and Polarization Anisotropies due to Patchy Reionization. *Mário G. Santos, Asantha Cooray, Zoltán Haiman, Lloyd Knox, & Chung-Pei Ma.* 598, 756 (2003)

MA, REN-YI. Magnetic Coupling of a Rotating Black Hole with Its Surrounding Accretion Disk. *Ding-Xiong Wang, Ren-Yi Ma, Wei-Hua Lei, & Guo-Zheng Yao.* 595, 109 (2003)

MACARTHUR, LAUREN A. Structure of Disk-dominated Galaxies. II. Bulge/Disk Parameters, Simulations, and Secular Evolution. *Lauren A. MacArthur, Stephanie Courteau, & Jon A. Holtzman.* 582, 689 (2003)

The Tully-Fisher Relation of Barred Galaxies. *Stéphane Courteau, David R. Andersen, Matthew A. Bershady, Lauren A. MacArthur, & Hans-Walter Rix.* 594, 208 (2003)

MACCARONE, THOMAS J. The Low Mass X-Ray Binary–Globular Cluster Connection. II. NGC 4472 X-Ray Source Properties and Source Catalogs. *Thomas J. Maccarone, Arunav Kundu, & Stephen E. Zepf.* 586, 814 (2003)

Jet-induced Nucleosynthesis in Misaligned Microquasars. *Yousaf M. Butt, Thomas J. Maccarone, & Nikos Prantzos.* 587, 748 (2003)

Some Constraints on the Effects of Age and Metallicity on the Low-Mass X-Ray Binary Formation Rate. *Arunav Kundu, Thomas J. Maccarone, Stephen E. Zepf, & Thomas H. Puzia.* 589, L81 (2003)

MACCHETTO, D. See MARCONI, A., et al. Is There Really a Black Hole at the Center of NGC 4041? Constraints from Gas Kinematics.

MACCHETTO, F. DUCCIO. What Do the *Hubble Space Telescope* and *Chandra* Tell Us about the Jet and the Nuclear Region of the Radio Galaxy 3C 270? *Marco Chiaberge, Roberto Gilli, F. Duccio Macchetto, William B. Sparks, & Alessandro Capetti.* 582, 645 (2003)

The Nuclear Spectral Energy Distribution of NGC 6251: A BL Lacertae Object in the Center of an FR I Radio Galaxy. *Marco Chiaberge, Roberto Gilli, Alessandro Capetti, & F. Duccio Macchetto.* 597, 166 (2003)

Month-Timescale Optical Variability in the M87 Jet. *Eric S. Perlman, D. E. Harris, John A. Biretta, William B. Sparks, & F. Duccio Macchetto.* 599, L65 (2003)

MACCIÒ, A. V. Modeling Dynamical Dark Energy. *R. Mainini, A. V. Macciò, S. A. Bonometto, & A. Klypin.* 599, 24 (2003)

Halo Properties in Models with Dynamical Dark Energy. *A. Klypin, A. V. Macciò, R. Mainini, & S. A. Bonometto.* 599, 31 (2003)

MACCIÒ, ANDREA V. Mass of Clusters in Simulations. *Andrea V. Macciò, Giuseppe Murante, & Silvio P. Bonometto.* 588, 35 (2003)

MACDONALD, J. Onset of Mass Loss in Red Giants: Association with an Evolutionary Event. *D. J. Mullan & J. MacDonald.* 591, 1203 (2003)

Onset of Shear Instability in Rotating Red Giants. *J. MacDonald & D. J. Mullan.* 598, 560 (2003)

MacDowall, R. J. Polarization and Fragmentation of Solar Type II Radio Bursts. *G. Thejappa, P. Zlobec, & R. J. MacDowall.* 592, 1234 (2003)

MacFadyen, A. I. Relativistic Jets in Collapsars. *Weiqun Zhang, S. E. Woosley, & A. I. MacFadyen.* 586, 356 (2003)

MacFadyen, Andrew I. Axisymmetric Magnetohydrodynamic Simulations of the Collapsar Model for Gamma-Ray Bursts. *Daniel Proga, Andrew I. MacFadyen, Philip J. Armitage, & Mitchell C. Begelman.* 599, L5 (2003)

MacFarlane, Joseph J. High-Resolution *Chandra* Spectroscopy of τ Scorpii: A Narrow-Line X-Ray Spectrum from a Hot Star. *David H. Cohen, Geneviève E. de Messières, Joseph J. MacFarlane, Nathan A. Miller, Joseph P. Cassinelli, Stanley P. Owocki, & Duane A. Liedahl.* 586, 495 (2003)

MacGillivray, H. The *ROSAT* All-Sky Survey: A Catalog of Clusters of Galaxies in a Region of 1 Steradian around the South Galactic Pole: Erratum (ApJS, 140, 239 [2002]). *R. Cruddace, W. Voges, H. Böhringer, C. Collins, D. Yentis, & H. MacGillivray.* 144, 299 (2003) (Orig. paper in 140, 239 (2002))

MacGregor, K. B. Magnetic Fields in Massive Stars. II. The Buoyant Rise of Magnetic Flux Tubes through the Radiative Interior. *K. B. MacGregor & J. P. Cassinelli.* 586, 480 (2003)

Gravity Wave–driven Flows in the Solar Tachocline. II. Stationary Flows. *Eun-jin Kim & K. B. MacGregor.* 588, 645 (2003)

Machida, Mami. Global Three-dimensional Magnetohydrodynamic Simulations of Black Hole Accretion Disks: X-Ray Flares in the Plunging Region. *Mami Machida & Ryoji Matsumoto.* 585, 429 (2003)

Maciejewski, Andrzej J. The Janus Head of the HD 12661 Planetary System. *Krzysztof Goździewski & Andrzej J. Maciejewski.* 586, L153 (2003)

Where Is the Second Planet in the HD 160691 Planetary System? *Krzysztof Goździewski, Maciej Konacki, & Andrzej J. Maciejewski.* 594, 1019 (2003)

Maciejewski, W. See Marconi, A., et al. Is There Really a Black Hole at the Center of NGC 4041? Constraints from Gas Kinematics.

Macintosh, Bruce A. Deep Keck Adaptive Optics Searches for Extrasolar Planets in the Dust of ϵ Eridani and Vega. *Bruce A. Macintosh, E. E. Becklin, Denise Kaisler, Quinn Konopacky, & B. Zuckerman.* 594, 538 (2003)

Mack, K.-H. Decline of the Space Density of Quasars between $z = 2$ and $z = 4$. *M. Vigotti, R. Carballo, C. R. Benn, G. De Zotti, R. Fanti, J. I. Gonzalez Serrano, K.-H. Mack, & J. Holt.* 591, 43 (2003)

Mackey, Jonathan. Three Epochs of Star Formation in the High-Redshift Universe. *Jonathan Mackey, Volker Bromm, & Lars Hernquist.* 586, 1 (2003)

Mac Low, Mordecai-Mark. The Formation of Stellar Clusters in Turbulent Molecular Clouds: Effects of the Equation of State. *Yuexing Li, Ralf S. Klessen, & Mordecai-Mark Mac Low.* 592, 975 (2003)

The Influence of Supershells and Galactic Outflows on the Escape of Ionizing Radiation from Dwarf Starburst Galaxies. *Akima Fujita, Crystal L. Martin, Mordecai-Mark Mac Low, & Tom Abel.* 599, 50 (2003)

MacNeice, P. J. A Transient Heating Model for Coronal Structure and Dynamics. *D. Spadaro, A. F. Lanza, A. C. Lanzafame, J. T. Karpen, S. K. Antiochos, J. A. Klimchuk, & P. J. MacNeice.* 582, 486 (2003)

Constraints on the Magnetic Field Geometry in Prominences. *J. T. Karpen, S. K. Antiochos, J. A. Klimchuk, & P. J. MacNeice.* 593, 1187 (2003)

Macomb, D. J. Three New Long-Period X-Ray Pulsars Discovered in the Small Magellanic Cloud. *D. J. Macomb, D. W. Fox, R. C. Lamb, & T. A. Prince.* 584, L79 (2003)

Discovery of a Possible Anomalous X-Ray Pulsar in the Small Magellanic Cloud: Addenudum (ApJ, 574, L29 [2002]). *R. C. Lamb, D. W. Fox, D. J. Macomb, & T. A. Prince.* 599, L115 (2003) (Orig. paper in 574, L29 (2002))

Macquart, J.-P. See Bignall, H. E., et al. Rapid Variability and Annual Cycles in the Characteristic Timescale of the Scintillating Source PKS 1257−326.

Macri, L. Clusters of Galaxies in the Local Universe. *C. S. Kochanek, Martin White, J. Huchra, L. Macri, T. H. Jarrett, S. E. Schneider, & J. Mader.* 585, 161 (2003)

Madau, Piero. The Assembly and Merging of Supermassive Black Holes in Hierarchical Models of Galaxy Formation. *Marta Volonteri, Francesco Haardt, & Piero Madau.* 582, 559 (2003)

The Formation of Galaxy Stellar Cores by the Hierarchical Merging of Supermassive Black Holes. *Marta Volonteri, Piero Madau, & Francesco Haardt.* 593, 661 (2003)

The C IV Mass Density of the Universe at Redshift 5. *Max Pettini, Piero Madau, Michael Bolte, Jason X. Prochaska, Sara L. Ellison, & Xiaohui Fan.* 594, 695 (2003)

Probing beyond the Epoch of Hydrogen Reionization with 21 Centimeter Radiation. *Benedetta Ciardi & Piero Madau.* 596, 1 (2003)

Madden, Suzanne C. The Mass Function of Supergiant Molecular Complexes and Implications for Forming Young Massive Star Clusters in the Antennae (NGC 4038/4039). *Christine D. Wilson, Nicholas Scoville, Suzanne C. Madden, & Vassilis Charmandaris.* 599, 1049 (2003)

Maddox, Steve J. Weak Gravitational Lensing by a Sample of X-Ray–luminous Clusters of Galaxies. III. Serendipitous Weak Lensing Detections of Dark and Luminous Mass Concentrations. *Haakon Dahle, Kristian Pedersen, Per B. Lilje, Steve J. Maddox, & Nick Kaiser.* 591, 662 (2003)

Madejski, G. X-Ray Variability of the Magnetic Cataclysmic Variable V1432 Aquilae and the Seyfert Galaxy NGC 6814. *K. Mukai, C. Hellier, G. Madejski, J. Patterson, & D. R. Skillman.* 597, 479 (2003)

Madejski, Greg M. Simultaneous *Chandra* and *Rossi X-Ray Timing Explorer* Observations of the Nearby Bright Seyfert 2 Galaxy NGC 4945. *Chris Done, Greg M. Madejski, Piotr T. Zycki, & Lincoln J. Greenhill.* 588, 763 (2003)

Mader, J. Clusters of Galaxies in the Local Universe. *C. S. Kochanek, Martin White, J. Huchra, L. Macri, T. H. Jarrett, S. E. Schneider, & J. Mader.* 585, 161 (2003)

See Schaefer, Bradley E., et al. GRB 021004: A Massive Progenitor Star Surrounded by Shells.

Madgwick, Darren S. Constraining Evolution in the Halo Model Using Galaxy Redshift Surveys. *Renbin Yan, Darren S. Madgwick, & Martin White.* 598, 848 (2003)

Spectroscopic Detection of Type Ia Supernovae in the Sloan Digital Sky Survey. *Darren S. Madgwick, Paul C. Hewett, Daniel J. Mortlock, & Lifan Wang.* 599, L33 (2003)

The DEEP2 Galaxy Redshift Survey: Spectral Classification of Galaxies at $z \sim 1$. *Darren S. Madgwick, Alison L. Coil, Christopher J. Conselice, Michael C. Cooper, Marc Davis, Richard S. Ellis, Sandy M. Faber, Douglas P. Finkbeiner, Brian Gerke, Puragra Guhathakurta, Nick Kaiser, David C. Koo, Jeffrey A. Newman, Andrew C. Phillips, Charles C. Steidel, Benjamin J. Weiner, Christopher N. A. Willmer, & R. Yan.* 599, 997 (2003)

Madokoro, Hideki. Global Anisotrophy versus Small-Scale Fluctuations in Neutrino Flux in Core-Collapse Supernova Explosions. *Hideki Madokoro, Tetsuya Shimizu, & Yuko Mochizuki.* 592, 1035 (2003)

Madore, B. F. The Central Mass Distribution in Dwarf and Low Surface Brightness Galaxies. *R. A. Swaters, B. F. Madore, Frank C. van den Bosch, & M. Balcells.* 583, 732 (2003)

Palomar/Las Campanas Imaging Atlas of Blue Compact Dwarf Galaxies. I. Images and Integrated Photometry. *A. Gil de Paz, B. F. Madore, & O. Pevunova.* 147, 29 (2003)

Discovery of a Double Ring in the Dwarf Galaxy Markarian 409. *A. Gil de Paz, B. F. Madore, K. Noeske, L. M. Cairós, P. Papaderos, & S. A. Silich.* 596, L179 (2003)

Madsen, G. J. A Search for Ionized Gas in the Draco and Ursa Minor Dwarf Spheroidal Galaxies. *J. S. Gallagher, G. J. Madsen, R. J. Reynolds, E. K. Grebel, & T. A. Smecker-Hane.* 588, 326 (2003)

The Wisconsin Hα Mapper Northern Sky Survey. *L. M. Haffner, R. J. Reynolds, S. L. Tufte, G. J. Madsen, K. P. Jaehnig, & J. W. Percival.* 149, 405 (2003)

Madsen, J. See Ahrens, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

Maeda, K. See Kawabata, K. S., et al. On the Spectrum and Spectropolarimetry of Type Ic Hypernova SN 2003dh/GRB 030329.

Maeda, Keiichi. See Yoshii, Yuzuru, et al. The Optical/Near-Infrared Light Curves of SN 2002ap for the First 140 Days after Discovery.

A Two-Component Model for the Light Curves of Hypernovae. *Keiichi Maeda, Paolo A. Mazzali, Jingsong Deng, Ken'ichi Nomoto, Yuzuru Yoshii, Hiroyuki Tomita, & Yukiyasu Kobayashi.* 593, 931 (2003)

Dust in the Early Universe: Dust Formation in the Ejecta of Population III Supernovae. *Takaya Nozawa, Takashi Kozasa, Hideyuki Umeda, Keiichi Maeda, & Ken'ichi Nomoto.* 598, 785 (2003)

Bipolar Supernova Explosions: Nucleosynthesis and Implications for Abundances in Extremely Metal-Poor Stars. *Keiichi Maeda & Ken'ichi Nomoto.* 598, 1163 (2003)

See Mazzali, Paolo A., et al. The Type Ic Hypernova SN 2003dh/GRB 030329.

MAEDA, Y. See BAGANOFF, F. K., et al. *Chandra* X-Ray Spectroscopic Imaging of Sagittarius A* and the Central Parsec of the Galaxy.

MAEDA, YOSHITOMO. Coronal X-Ray Emission from an Intermediate-Age Brown Dwarf. *Yohko Tsuboi, Yoshitomo Maeda, Eric D. Feigelson, Gordon P. Garmire, George Chartas, Koji Mori, & Steven H. Pravdo.* 587, L51 (2003)

MAEHARA, HIDEO. See SATO, BUN'EI, et al. A Planetary Companion to the G-Type Giant Star HD 104985.

MAESANO, M. See BÖTTCHER, M., et al. Coordinated Multiwavelength Observations of BL Lacertae in 2000.

MAEZAWA, HIROYUKI. See KAMEGAI, KAZUHISA, et al. Distribution of the C I Emission in the ρ Ophiuchi Dark Cloud.

MAGALHÃES, A. M. Evolution of the Inner Circumstellar Envelope of V838 Monocerotis. *J. P. Wisniewski, K. S. Bjorkman, & A. M. Magalhães.* 598, L43 (2003)

MAGARA, T. Injection of Magnetic Energy and Magnetic Helicity into the Solar Atmosphere by an Emerging Magnetic Flux Tube. *T. Magara & D. W. Longcope.* 586, 630 (2003)

MAGEE, D. See TRAN, H. D., et al. Advanced Camera for Surveys Observations of Young Star Clusters in the Interacting Galaxy UGC 10214.

See BOUWENS, R. J., et al. Star Formation at $z \sim 6$: i-Dropouts in the Advanced Camera for Surveys Guaranteed Time Observation Fields.

MAGEE, DANIEL. See BLAKESLEE, JOHN P., et al. Discovery of Two Distant Type Ia Supernovae in the Hubble Deep Field–North with the Advanced Camera for Surveys.

MAGNANI, LORIS. CH, CO, and $E(B-V)$ as Molecular Gas Tracers in a Translucent Cloud. *Loris Magnani, Raymond J. Chastain, Hyekyung Clarisse Kim, Dap Hartmann, Anthony T. Truong, & Patrick Thaddeus.* 586, 1111 (2003)

Mechanisms for the Origin of Turbulence in Non–Star-forming Clouds: The Translucent Cloud MBM 40. *Steven N. Shore, Loris Magnani, T. N. LaRosa, & Meredith N. McCarthy.* 593, 413 (2003)

MAGORRIAN, JOHN. See GEBHARDT, KARL, et al. Axisymmetric Dynamical Models of the Central Regions of Galaxies.

MAHABAL, A. A. Discovery of a Clustered Quasar Pair at $z \approx 5$: Biased Peaks in Early Structure Formation. *S. G. Djorgovski, D. Stern, A. A. Mahabal, & R. Brunner.* 596, 67 (2003)

MAHABAL, ASHISH. A Limit on the Number of Isolated Neutron Stars Detected in the *ROSAT* Bright Source Catalogue. *Robert E. Rutledge, Derek W. Fox, Milan Bogosavljevic, & Ashish Mahabal.* 598, 458 (2003)

MAHAJAN, SWADESH M. Role of the Hall Current in Magnetohydrodynamic Dynamos. *Pablo D. Mininni, Daniel O. Gómez, & Swadesh M. Mahajan.* 584, 1120 (2003)

Dynamo Action in Magnetohydrodynamics and Hall-Magnetohydrodynamics. *Pablo D. Mininni, Daniel O. Gómez, & Swadesh M. Mahajan.* 587, 472 (2003)

MAHESWARAN, M. Magnetic Roster Winds and Keplerian Disks of Hot Stars. *M. Maheswaran.* 592, 1156 (2003)

MAIHARA, TOSHINORI. See IWAMURO, FUMIHIDE, et al. Infrared Spectroscopy of 15 Radio Galaxies at $2 < z < 2.6$.

MAILLARD, J.-P. Multiple Molecular H_2 Outflows in AFGL 618. *P. Cox, P. J. Huggins, J.-P. Maillard, C. Muthu, R. Bachiller, & T. Forveille.* 586, L87 (2003)

MAINIERI, V. See WANG, J., et al. A Puzzling X-Ray Source Found in the *Chandra* Deep Field–South.

See GILLI, R., et al. Tracing the Large-Scale Structure in the *Chandra* Deep Field South.

Iron Abundance in the Intracluster Medium at High Redshift. *P. Tozzi, P. Rosati, S. Ettori, S. Borgani, V. Mainieri, & C. Norman.* 593, 705 (2003)

MAININI, R. Modeling Dynamical Dark Energy. *R. Mainini, A. V. Macciò, S. A. Bonometto, & A. Klypin.* 599, 24 (2003)

Halo Properties in Models with Dynamical Dark Energy. *A. Klypin, A. V. Macciò, R. Mainini, & S. A. Bonometto.* 599, 31 (2003)

MAINZER, A. K. Using Narrowband Photometry to Detect Young Brown Dwarfs in IC 348. *A. K. Mainzer & Ian S. McLean.* 597, 555 (2003)

MAIOLINO, R. See RISALITI, G., et al. Revealing the Active Galactic Nucleus in the Superantennae through L-Band Spectroscopy.

Early Star Formation Traced by the Highest Redshift Quasars. *R. Maiolino, Y. Juarez, R. Mujica, N. M. Nagar, & E. Oliva.* 596, L155 (2003)

MAITIA, V. A 3 Year Long Extreme Scattering Event in the Direction of the Millisecond Pulsar J1643−1224. *V. Maitia, J.-F. Lestrade, & I. Cognard.* 582, 972 (2003)

MAJEWSKI, STEVEN R. See DINESCU, DANA I., et al. Absolute Proper Motions to $B \sim 22.5$. V. Detection of Sagittarius Dwarf Spheroidal Debris in the Direction of the Galactic Anticenter: Erratum (ApJ, 575, L67 [2002]).

Tracing the Galactic Anticenter Stellar Stream with 2MASS M Giants. *Helio J. Rocha-Pinto, Steven R. Majewski, M. F. Skrutskie, & Jeffrey D. Crane.* 594, L115 (2003)

Exploring Halo Substructure with Giant Stars: Spectroscopy of Stars in the Galactic Anticenter Stellar Structure. *Jeffrey D. Crane, Steven R. Majewski, Helio J. Rocha-Pinto, Peter M. Frinchaboy, Michael F. Skrutskie, & David R. Law.* 594, L119 (2003)

A Two Micron All Sky Survey All-Sky View of the Sagittarius Dwarf Galaxy. I. Morphology of the Sagittarius Core and Tidal Arms. *Steven R. Majewski, M. F. Skrutskie, Martin D. Weinberg, & James C. Ostheimer.* 599, 1082 (2003)

MAJUMDAR, SUBHABRATA. Importance of Cluster Structural Evolution in Using X-Ray and Sunyaev-Zeldovich Effect Galaxy Cluster Surveys to Study Dark Energy. *Subhabrata Majumdar & Joseph J. Mohr.* 585, 603 (2003)

MAKAROV, V. V. *ROSAT* View of *Hipparcos* F Stars. *A. A. Suchkov, V. V. Makarov, & W. Voges.* 595, 1206 (2003)

MAKHMUTOV, VLADIMIR S. Properties of Fast Submillimeter Time Structures during a Large Solar Flare. *Jean-Pierre Raulin, Pierre Kaufmann, Carlos G. Giménez de Castro, Alessandra A. Pacini, Vladimir S. Makhmutov, Hugo Levato, & Marta Rovira.* 592, 580 (2003)

MAKIDON, RUSSELL B. The Structure of High Strehl Ratio Point-Spread Functions. *Marshall D. Perrin, Anand Sivaramakrishnan, Russell B. Makidon, Ben R. Oppenheimer, & James R. Graham.* 596, 702 (2003)

MAKINO, JUNICHIRO. To Circularize or Not to Circularize?—Orbital Evolution of Satellite Galaxies. *Yoshikazu Hashimoto, Yoko Funato, & Junichiro Makino.* 582, 196 (2003)

On the Central Structure of M15. *Holger Baumgardt, Piet Hut, Junichiro Makino, Steve McMillan, & Simon Portegies Zwart.* 582, L21 (2003)

Structure of Dark Matter Halos from Hierarchical Clustering. II. Dependence of Cosmological Models in Cluster-sized Halos. *Toshiyuki Fukushige & Junichiro Makino.* 588, 674 (2003)

A Dynamical Model for the Globular Cluster G1. *Holger Baumgardt, Junichiro Makino, Piet Hut, Steve McMillan, & Simon Portegies Zwart.* 589, L25 (2003)

See POOLEY, DAVID, et al. Dynamical Formation of Close Binary Systems in Globular Clusters.

MAKISHIMA, K. See URATA, Y., et al. Multiband Optical Follow-up Observations of GRB 020813 at the Kiso and Bisei Observatories.

MALAMA, YURY G. Effects of Interstellar and Solar Wind Ionized Helium on the Interaction of the Solar Wind with the Local Interstellar Medium. *Vlad Izmodenov, Yury G. Malama, George Gloeckler, & Johannes Geiss.* 594, L59 (2003)

MALEEV, VASILY M. Helicity Evolution in Emerging Active Regions. *Alexei A. Pevtsov, Vasily M. Maleev, & Dana W. Longcope.* 593, 1217 (2003)

MALHOTRA, S. No X-Ray–bright Type II Quasars among the Lyα Emitters. *S. Malhotra, J. X. Wang, J. E. Rhoads, T. M. Heckman, & C. A. Norman.* 585, L25 (2003)

MALHOTRA, SANGEETA. See LU, NANYAO, et al. Infrared Emission of Normal Galaxies from 2.5 to 12 Microns: *Infrared Space Observatory* Spectra, Near-Infrared Continuum, and Mid-Infrared Emission Features.

MALIZIA, A. *BeppoSAX* Average Spectra of Seyfert Galaxies. *A. Malizia, L. Bassani, J. B. Stephen, G. Di Cocco, F. Fiore, & A. J. Dean.* 589, L17 (2003)

MALKAN, MATT A. See KURASZKIEWICZ, JOANNA K., et al. The Far-Infrared Spectral Energy Distributions of X-Ray–selected Active Galaxies.

MALKAN, MATTHEW. A *Hubble Space Telescope* Search for Lyman Continuum Emission from Galaxies at $1.1 < z < 1.4$. *Matthew Malkan, Wayne Webb, & Quinn Konopacky.* 598, 878 (2003)

MALKAN, MATTHEW A. How Many Active Galaxies and QSOs Will Future Space Missions Detect? *Paola Andreani, Luigi Spinoglio, & Matthew A. Malkan.* 597, 759 (2003)

MALLÉN-FULLERTON, G. M. The EXPLORE Project. I. A Deep Search for Transiting Extrasolar Planets. *G. Mallén-Ornelas, S. Seager, H. K. C. Yee, D. Minniti, Michael D. Gladders, G. M. Mallén-Fullerton, & T. M. Brown.* 582, 1123 (2003)

MALLÉN-ORNELAS, G. The EXPLORE Project. I. A Deep Search for Transiting Extrasolar Planets. *G. Mallén-Ornelas, S. Seager, H. K. C. Yee, D. Minniti, Michael D. Gladders, G. M. Mallén-Fullerton, & T. M. Brown.* 582, 1123 (2003)

A Unique Solution of Planet and Star Parameters from an Extrasolar Planet Transit Light Curve. *S. Seager & G. Mallén-Ornelas.* 585, 1038 (2003)

MALLEN-ORNELAS, GABRIELA. The Absorption and Emission Kinematics in the $z = 0.7450$ Mg II Absorber toward Q1331+17. *Sara L. Ellison, Gabriela Mallén-Ornelas, & Marcin Sawicki.* 589, 709 (2003)

MALLER, ARIYEH H. The Clustering Dipole of the Local Universe from the Two Micron All Sky Survey. *Ariyeh H. Maller, Daniel H. McIntosh, Neal Katz, & Martin D. Weinberg.* 598, L1 (2003)

MALLOURIS, CHRISTOFOROS. The Complete *Far Ultraviolet Spectroscopic Explorer* Spectrum of the Small Magellanic Cloud Star Sk 108. *Christoforos Mallouris.* 147, 265 (2003)

MALONEY, F. P. Fundamental Properties and Distances of Large Magellanic Cloud Eclipsing Binaries. IV. HV 5936. *E. L. Fitzpatrick, I. Ribas, E. F. Guinan, F. P. Maloney, & A. Claret.* 587, 685 (2003)

MALONEY, P. R. Hα Emission from High-Velocity Clouds and Their Distances. *M. E. Putman, J. Bland-Hawthorn, S. Veilleux, B. K. Gibson, K. C. Freeman, & P. R. Maloney.* 597, 948 (2003)

MALONEY, PHILIP R. 3.1 Micron H_2O Ice Absorption in LINER-Type Ultraluminous Infrared Galaxies with Cool Far-Infrared Colors: The Centrally Concentrated Nature of Their Deeply Buried Energy Sources. *Masatoshi Imanishi & Philip R. Maloney.* 588, 165 (2003)

Are Compact High-Velocity Clouds Extragalactic Objects? *Philip R. Maloney & Mary E. Putman.* 589, 270 (2003)

MALTONI, M. Large Mixing Angle Oscillations as a Probe of the Deep Solar Interior. *C. Burgess, N. S. Dzhalilov, M. Maltoni, T. I. Rashba, V. B. Semikoz, M. A. Tórtola, & J. W. F. Valle.* 588, L65 (2003)

MAMAJEK, ERIC. See KAROVSKA, MARGARITA, et al. Spatially Resolved Circumnuclear Dust in Centaurus A.

MAMAJEK, ERIC E. An Adaptive Optics Survey of M6.0–M7.5 Stars: Discovery of Three Very Low Mass Binary Systems Including Two Probably Hyades Members. *Nick Siegler, Laird M. Close, Eric E. Mamajek, & Melanie Freed.* 598, 1265 (2003)

A Resolved Circumstellar Disk around the Herbig Ae Star HD 00546 in the Thermal Infrared. *Wilson M. Liu, Philip M. Hinz, Michael R. Meyer, Eric E. Mamajek, William F. Hoffman, & Joseph L. Hora.* 598, L111 (2003)

MAMPASO, ANTONIO. The Physical Parameters, Excitation, and Chemistry of the Rim, Jets, and Knots of the Planetary Nebula NGC 7009. *Denise R. Goncalves, Romano L. M. Corradi, Antonio Mampaso, & Mario Perinotto.* 597, 975 (2003)

MANCHADO, ARTURO. Ram Pressure Stripping in Planetary Nebulae. *Eva Villaver, Guillermo García-Segura, & Arturo Manchado.* 585, L49 (2003)

MANCHANDA, R. See CREW, G. B., et al. *HETE-2* Localization and Observation of the Bright, X-Ray–rich Gamma-Ray Burst GRB 021211.

MANCHESTER, R. N. A Search for Pulsars in Quiescent Soft X-Ray Transients. I. *M. Burgay, L. Burderi, A. Possenti, N. D'Amico, R. N. Manchester, A. G. Lyne, F. Camilo, & S. Campana.* 589, 902 (2003)

See MCLAUGHLIN, M. A., et al. PSR J1847−0130: A Radio Pulsar with Magnetar Spin Characteristics.

Three Binary Millisecond Pulsars in NGC 6266. *A. Possenti, N. D'Amico, R. N. Manchester, F. Camilo, A. G. Lyne, J. Sarkissian, & A. Corongiu.* 599, 475 (2003)

MANCHESTER, RICHARD N. Search for the Optical Counterpart of the Nearby Pulsar J0108−1431. *Roberto P. Mignani, Richard N. Manchester, & George G. Pavlov.* 582, 978 (2003)

MANCHESTER, W., IV. See ROUSSEV, I. I., et al. A Three-dimensional Model of the Solar Wind Incorporating Solar Magnetogram Observations.

MANCHESTER, WARD. Probing the Edge of the Solar System: Formation of an Unstable Jet-Sheet. *Merav Opher, Paulett C. Liewer, Tamas I. Gombosi, Ward Manchester, Darren L. DeZeeuw, Igor Sokolov, & Gabor Toth.* 591, L61 (2003)

MANDELL, AVI M. Survival of Terrestrial Planets in the Presence of Giant Planet Migration. *Avi M. Mandell & Steinn Sigurdsson.* 599, L111 (2003)

MANDRINI, C. H. The Long-Term Evolution of AR 7978: The Scalings of the Coronal Plasma Parameters with the Mean Photospheric Magnetic Field. *L. van Driel-Gesztelyi, P. Démoulin, C. H. Mandrini, L. Harra, & J. A. Klimchuk.* 586, 579 (2003)

The Long-Term Evolution of AR 7978: Testing Coronal Heating Models. *P. Démoulin, L. van Driel-Gesztelyi, C. H. Mandrini, J. A. Klimchuk, & L. Harra.* 586, 592 (2003)

MANESS, HOLLY L. Abundance Anomalies in the X-Ray Spectra of Planetary Nebulae NGC 7027 and BD +30°3639. *Holly L. Maness, Saeqa D. Vrtilek, Joel H. Kastner, & Noam Soker.* 589, 439 (2003)

MANFROID, J. An X-Ray Investigation of the NGC 346 Field in the Small Magellanic Cloud. II. The Field Population. *Y. Nazé, J. M. Hartwell, I. R. Stevens, J. Manfroid, S. Marchenko, M. F. Corcoran, A. F. J. Moffat, & G. Skalkowski.* 586, 983 (2003)

MANG, O. See BÖTTCHER, M., et al. Coordinated Multiwavelength Observations of BL Lacertae in 2000.

MANGANO, V. *XMM-Newton* Observation of the 5.25 Millisecond Transient Millisecond Pulsar XTE J1807−294 in Outburst. *S. Campana, M. Ravasio, G. L. Israel, V. Mangano, & T. Belloni.* 594, L39 (2003)

MANGENEY, A. Electron Properties and Coulomb Collisions in the Solar Wind at 1 AU: *WIND* Observations. *C. Salem, D. Hubert, C. Lacombe, S. D. Bale, A. Mangeney, D. E. Larson, & R. P. Lin.* 585, 1147 (2003)

MANICÒ, G. Measurement of the Kinetic Energy of Hydrogen Molecules Desorbing from Amorphous Water Ice. *J. E. Roser, S. Swords, G. Vidali, G. Manicò, & V. Pirronello.* 596, L55 (2003)

MANN, G. Generation of Suprathermal Electrons by Resonant Wave-Particle Interaction in the Solar Corona and Wind. *C. Vocks & G. Mann.* 593, 1134 (2003)

MANN, INGRID. Elemental Abundances and Mass Densities of Dust and Gas in the Local Interstellar Cloud. *Hiroshi Kimura, Ingrid Mann, & Elmar K. Jessberger.* 582, 846 (2003)

Composition, Structure, and Size Distribution in the Local Interstellar Cloud. *Hiroshi Kimura, Ingrid Mann, & Elmar K. Jessberger.* 583, 314 (2003)

MANNING, CURTIS V. Modeling the Void H I Column Density Spectrum with Subgalactic Halos. *Curtis V. Manning.* 591, 79 (2003)

The Nature and Origin of the Nonvoid Lyα Cloud Population. *Curtis V. Manning.* 595, 19 (2003)

MANNUCCI, FILIPPO. Three Emission-Line Galaxies at $z \sim 2.4$. *Richard Meyer, David Thompson, & Filippo Mannucci.* 585, 73 (2003)

MANOHARAN, P. K. Coronal Structure of a Flaring Region and Associated Coronal Mass Ejection. *P. K. Manoharan & M. R. Kundu.* 592, 597 (2003)

MANRIQUE, ALBERTO. On the Origin of the Inner Structure of Halos. *Alberto Manrique, Andreu Raig, Eduard Salvador-Solé, Teresa Sanchis, & José María Solanes.* 593, 26 (2003)

MANSON, S. T. Interchannel Coupling in Ionic Photoionization far above Threshold: The Neon Isoelectronic Sequence. *H. S. Chakraborty, P. C. Deshmukh, & S. T. Manson.* 595, 1307 (2003)

MANTEIGA, M. See MUKADEM, ANJUM S., et al. Constraining the Evolution of ZZ Ceti.

MAO, PETER H. The Serendipitous Extragalactic X-Ray Source Identification Program. I. Characteristics of the Hard X-Ray Sample. *Fiona A. Harrison, Megan E. Eckart, Peter H. Mao, David J. Helfand, & Daniel Stern.* 596, 944 (2003)

MAO, S. See KOOPMANS, L. V. E., et al. Extrinsic Radio Variability of JVAS/CLASS Gravitational Lenses.

MAO, SHUDE. A Brown Dwarf Microlens Candidate from the Second Phase of the Optical Gravitational Lensing Experiment. *Martin C. Smith, Shude Mao, & Przemysław Woźniak.* 585, L65 (2003)

Limits on the Evolution of Galaxies from the Statistics of Gravitational Lenses. *Kyu-Hyun Chae & Shude Mao.* 599, L61 (2003)

MAOLI, R. See BATTISTELLI, E. S., et al. Triple Experiment Spectrum of the Sunyaev-Zel'dovich Effect in the Coma Cluster: H_0.

MAOZ, DAN. Time-Delay Measurement of the Lensed Quasar HE 1104−1805. *Eran O. Ofek & Dan Maoz.* 594, 101 (2003)

MAPELLI, MICHELA. Probing the Presence of a Single or Binary Black Hole in the Globular Cluster NGC 6752 with Pulsar Dynamics. *Monica Colpi, Michela Mapelli, & Andrea Possenti.* 599, 1260 (2003)

MARASCHI, L. See MASON, K. O., et al. The X-Ray Spectrum of the Seyfert 1 Galaxy Markarian 766: Dusty Warm Absorber or Relativistic Emission Lines?

See GRANDI, P., et al. *BeppoSAX* Observations of Centaurus A: The Hard Continuum and the Iron-Line Feature.

MARASCHI, LAURA. Detection of X-Ray Emission from the Eastern Radio Lobe of Pictor A. *Paola Grandi, Matteo Guainazzi, Laura Maraschi, Raffaella Morganti, Roberto Fusco-Femiano, Mariateresa Fiocchi, Lucia Ballo, & Fabrizio Tavecchio.* 586, 123 (2003)

The Jet-Disk Connection and Blazar Unification. *Laura Maraschi & Fabrizio Tavecchio.* 593, 667 (2003)

MARASTON, C. The Munich Near-Infrared Cluster Survey. II. The *K*-Band Luminosity Function of Field Galaxies to $z \sim 1.2$. *N. Drory, R. Bender,*

G. Feulner, U. Hopp, C. Maraston, J. Snigula, & G. J. Hill. 595, 698 (2003)

MARBLE, ANDREW R. A *Hubble Space Telescope*/WFPC2 Snapshot Survey of 2MASS-selected Red QSOs. *Andrew R. Marble, Dean C. Hines, Gary D. Schmidt, Paul S. Smith, Jason A. Surace, Lee Armus, Roc M. Cutri, & Brant O. Nelson.* 590, 707 (2003)

MARCAIDE, J. M. Radio Emission from SN 2001gd in NGC 5033. *Christopher J. Stockdale, Kurt W. Weiler, Schuyler D. Van Dyk, Marcos J. Montes, Nino Panagia, Richard A. Sramek, M. A. Perez-Torres, & J. M. Marcaide.* 592, 900 (2003)

MARCHENKO, S. An X-Ray Investigation of the NGC 346 Field in the Small Magellanic Cloud. II. The Field Population. *Y. Nazé, J. M. Hartwell, I. R. Stevens, J. Manfroid, S. Marchenko, M. F. Corcoran, A. F. J. Moffat, & G. Skalkowski.* 586, 983 (2003)

MARCHENKO, S. V. The Unusual 2001 Periastron Passage in the "Clockwork" Colliding-Wind Binary WR 140. *S. V. Marchenko, A. F. J. Moffat, D. Ballereau, J. Chauville, J. Zorec, G. M. Hill, K. Annuk, L. J. Corral, H. Demers, P. R. J. Eenens, K. P. Panov, W. Seggewiss, J. R. Thomson, & A. Villar-Sbaffi.* 596, 1295 (2003)

MARCHIS, F. Ground-based Near-Infrared Imaging of the HD 141569 Circumstellar Disk. *A. Boccaletti, J.-C. Augereau, F. Marchis, & J. Hahn.* 585, 494 (2003)

MARCINIEWSKI, P. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

MARCONI, A. Is There Really a Black Hole at the Center of NGC 4041? Constraints from Gas Kinematics. *A. Marconi, D. J. Axon, A. Capetti, W. Maciejewski, J. Atkinson, D. Batcheldor, J. Binney, M. Carollo, L. Dressel, H. Ford, J. Gerssen, M. A. Hughes, D. Macchetto, M. R. Merrifield, C. Scarlata, W. Sparks, M. Stiavelli, Z. Tsvetanov, & R. P. van der Marel.* 586, 868 (2003)

See RISALITI, G., et al. Revealing the Active Galactic Nucleus in the Superantennae through *L*-Band Spectroscopy.

MARCONI, ALESSANDRO. The Relation between Black Hole Mass, Bulge Mass, and Near-Infrared Luminosity. *Alessandro Marconi & Leslie K. Hunt.* 589, L21 (2003)

MARCONI, G. See ISRAEL, G. L., et al. The Infrared Counterpart to the Anomalous X-Ray Pulsar 1RXS J170849−400910.

See ISRAEL, G. L., et al. Unveiling the Nature of the 321 Second Modulation in RX J0806.3+1527: Near-Simultaneous *Chandra* and Very Large Telescope Observations.

MARCONI, M. RR Lyrae Stars in Galactic Globular Clusters. II. A Theoretical Approach to Variables in M3. *M. Marconi, F. Caputo, M. Di Criscienzo, & M. Castellani.* 596, 299 (2003)

MARCONI, MARCELLA. Classical Cepheid Pulsation Models. IX. New Input Physics. *Silvia Petroni, Giuseppe Bono, Marcella Marconi, & Robert F. Stellingwerf.* 599, 522 (2003)

MARCY, GEOFFREY W. Seven New Keck Planets Orbiting G and K Dwarfs. *R. Paul Butler, Geoffrey W. Marcy, Steven S. Vogt, Debra A. Fischer, Gregory W. Henry, Gregory Laughlin, & Jason T. Wright.* 582, 455 (2003)

See FISCHER, DEBRA A., et al. A Planetary Companion to HD 40979 and Additional Planets Orbiting HD 12661 and HD 38529.

Four New Planets Orbiting Metal-Enriched Stars. *C. G. Tinney, R. Paul Butler, Geoffrey W. Marcy, Hugh R. A. Jones, Alan J. Penny, Chris McCarthy, Brad D. Carter, & Jade Bond.* 587, 423 (2003)

A Sub-Saturn Mass Planet Orbiting HD 3651. *Debra A. Fischer, R. Paul Butler, Geoffrey W. Marcy, Steven S. Vogt, & Gregory W. Henry.* 590, 1081 (2003)

A Planet in a Circular Orbit with a 6 Year Period. *Brad D. Carter, R. Paul Butler, C. G. Tinney, Hugh R. A. Jones, Geoffrey W. Marcy, Chris McCarthy, Debra A. Fischer, & Alan J. Penny.* 593, L43 (2003)

MARDONES, DIEGO. Inner Structures of Protostellar Collapse Candidate B335 Derived from Millimeter-Wave Interferometry. *Daniel W. A. Harvey, David J. Wilner, Philip C. Myers, Mario Tafalla, & Diego Mardones.* 583, 809 (2003)

A Triple Radio Continuum Source Associated with IRAS 16547−4247: A Collimated Stellar Wind Emanating from a Massive Protostar. *Guido Garay, Kate J. Brooks, Diego Mardones, & Ray P. Norris.* 587, 739 (2003)

A Parsec-Scale Flow Associated with the IRAS 16547−4247 Radio Jet. *Kate J. Brooks, Guido Garay, Diego Mardones, & Leonardo Bronfman.* 594, L131 (2003)

MARENGO, MASSIMO. Theoretical Limb Darkening for Classical Cepheids. II. Corrections for the Geometric Baade-Wesselink Method. *Massimo Marengo, Margarita Karovska, Dimitar D. Sasselov, Costas Papaliolios, John T. Armstrong, & Tyler E. Nordgren.* 589, 968 (2003)

See KAROVSKA, MARGARITA, et al. Spatially Resolved Circumnuclear Dust in Centaurus A.

MARGIS C., GLADIS. ADEMIS: A Library of Evolutionary Models for Emission-Line Galaxies. I. Dust-free Models. *Gladis Margis C., Luc Binette, & Gustavo Bruzual A.* 149, 313 (2003)

MARGON, BRUCE. See SZKODY, PAULA, et al. Two Rare Magnetic Cataclysmic Variables with Extreme Cyclotron Features Identified in the Sloan Digital Sky Survey.

See POOLEY, DAVID, et al. Dynamical Formation of Close Binary Systems in Globular Clusters.

MARGONINER, V. E. Weak Lensing Discovery and Tomography of a Cluster at $z = 0.68$. *D. Wittman, V. E. Margoniner, J. A. Tyson, J. G. Cohen, A. C. Becker, & I. P. Dell'Antonio.* 597, 218 (2003)

MARILLI, E. See BÖTTCHER, M., et al. Coordinated Multiwavelength Observations of BL Lacertae in 2000.

MARÍN-FRANCH, A. Intergalactic Globular Clusters and the Faint End of the Galaxy Number Counts in A1656 (Coma). *A. Marín-Franch & A. Aparicio.* 585, 714 (2003)

Beyond the Hubble Deep Field Limiting Magnitude: Faint Galaxy Number Counts from Surface Brightness Fluctuations. *A. Marín-Franch & A. Aparicio.* 594, 63 (2003)

MARION, G. H. Near-Infrared Spectra of Type Ia Supernovae. *G. H. Marion, P. Höflich, W. D. Vacca, & J. C. Wheeler.* 591, 316 (2003)

MARISKA, JOHN T. *Transition Region and Coronal Explorer* and Soft X-Ray Telescope Active Region Loop Observations: Comparisons with Static Solutions of the Hydrodynamic Equations. *Amy R. Winebarger, Harry P. Warren, & John T. Mariska.* 587, 439 (2003)

Evolving Active Region Loops Observed with the *Transition Region and Coronal Explorer*. II. Time-Dependent Hydrodynamic Simulations. *Harry P. Warren, Amy R. Winebarger, & John T. Mariska.* 593, 1174 (2003)

MARKEVITCH, M. *Chandra* Spectra of the Soft X-Ray Diffuse Background. *M. Markevitch, M. W. Bautz, B. Biller, Y. Butt, R. Edgar, T. Gaetz, G. Garmire, C. E. Grant, P. Green, M. Juda, P. P. Plucinsky, D. Schwartz, R. Smith, A. Vikhlinin, S. Virani, B. J. Wargelin, & S. Wolk.* 583, 70 (2003)

Chandra Temperature Map of A754 and Constraints on Thermal Conduction. *M. Markevitch, P. Mazzotta, A. Vikhlinin, D. Burke, Y. Butt, L. David, H. Donnelly, W. R. Forman, D. Harris, D.-W. Kim, S. Virani, & J. Vrtilek.* 586, L19 (2003)

A *Chandra* Study of the Complex Structure in the Core of 2A 0335+096. *P. Mazzotta, A. C. Edge, & M. Markevitch.* 596, 190 (2003)

MARKEVITCH, MAXIM. *Chandra* Observation of the Merging Cluster A2034. *Joshua C. Kempner, Craig L. Sarazin, & Maxim Markevitch.* 593, 291 (2003)

MARKOFF, S. See FABBIANO, G., et al. The X-Ray–faint Emission of the Supermassive Nuclear Black Hole of IC 1459.

MARKOWITZ, A. X-Ray Fluctuation Power Spectral Densities of Seyfert 1 Galaxies. *A. Markowitz, R. Edelson, S. Vaughan, P. Uttley, I. M. George, R. E. Griffiths, S. Kaspi, A. Lawrence, I. McHardy, K. Nandra, K. Pounds, J. Reeves, N. Schurch, & R. Warwick.* 593, 96 (2003)

Long-Term X-Ray Spectral Variability in Seyfert 1 Galaxies. *A. Markowitz, R. Edelson, & S. Vaughan.* 598, 935 (2003)

MARKOWITZ, ALEX. Correlated Long-Term Optical and X-Ray Variations in NGC 5548. *Philip Uttley, Rick Edelson, Ian M. McHardy, Bradley M. Peterson, & Alex Markowitz.* 584, L53 (2003)

MARKUS, B. The Mass Ratio Distribution in Main-Sequence Spectroscopic Binaries Measured by Infrared Spectroscopy. *T. Mazeh, M. Simon, L. Prato, B. Markus, & S. Zucker.* 599, 1344 (2003)

MARKWARDT, CRAIG B. X-Ray Bursts from the Accreting Millisecond Pulsar XTE J1814−338. *Tod E. Strohmayer, Craig B. Markwardt, Jean H. Swank, & Jean in 't Zand.* 596, L67 (2003)

MARON, JASON L. Gradient Particle Magnetohydrodynamics: A Lagrangian Particle Code for Astrophysical Magnetohydrodynamics. *Jason L. Maron & Gregory G. Howes.* 595, 564 (2003)

MARSCHER, A. P. See BÖTTCHER, M., et al. Coordinated Multiwavelength Observations of BL Lacertae in 2000.

MARSH, TOM. See GÄNSICKE, BORIS T., et al. Anomalous Ultraviolet Line Flux Ratios in the Cataclysmic variables 1RXS J232953.9+062814, CE 315, BZ Ursae Majoris, and EY Cygni observed with the *Hubble Space Telescope* Space Telescope Imaging Spectrograph.

MARSHALL, H. L. An *Extreme Ultraviolet Explorer* Atlas of Seyfert Galaxy Light Curves: Search for Periodicity. *J. P. Halpern, K. M. Leighly, & H. L. Marshall.* 585, 665 (2003)

The Quiescent Counterpart of the Soft Gamma-Ray Repeater SGR 0526−66. *S. R. Kulkarni, D. L. Kaplan, H. L. Marshall, D. A. Frail, T. Murakami, & D. Yonetoku.* 585, 948 (2003)

Discrete X-Ray Signatures of a Photoionized Plasma above the Accretion Disk of the Neutron Star EXO 0748−676. *M. A. Jimenez-Garate, N. S. Schulz, & H. L. Marshall.* 590, 432 (2003)

The Nearby Neutron Star RX J0720.4−3125 from Radio to X-Rays. *D. L. Kaplan, M. H. van Kerkwijk, H. L. Marshall, B. A. Jacoby, S. R. Kulkarni, & D. A. Frail.* 590, 1008 (2003)

MARSHALL, HERMAN L. The X-Ray Afterglows of GRB 020813 and GRB 021004 with *Chandra* HETGS: Possible Evidence for a Supernova prior to GRB 020813. *Nathanial R. Butler, Herman L. Marshall, George R. Ricker, Roland K. Vanderspek, Peter G. Ford, Geoffrey B. Crew, Donald Q. Lamb, & J. Garrett Jernigan.* 597, 1010 (2003)

MARSHALL, PHIL. See KNEIB, JEAN-PAUL, et al. A Wide-Field *Hubble Space Telescope* Study of the Cluster Cl 0024+1654 at $z = 0.4$. II. The Cluster Mass Distribution.

MARSHALL, S. See ALCOCK, C., et al. The MACHO Project Large Magellanic Cloud Variable Star Inventory. XI. Frequency Analysis of the Fundamental Mode RR Lyrae Stars.

MARSTON, A. See CORBETT, E. A., et al. COLA. II. Radio and Spectroscopic Diagnostics of Nuclear Activity in Galaxies.

MARTEL, A. R. See TRAN, H. D., et al. Advanced Camera for Surveys Observations of Young Star Clusters in the Interacting Galaxy UGC 10214.

See BOUWENS, R. J., et al. Star Formation at $z \sim 6$: i-Dropouts in the Advanced Camera for Surveys Guaranteed Time Observation Fields.

See BLAKESLEE, JOHN P., et al. Advanced Camera for Surveys Photometry of the Cluster RDCS 1252.9−2927: The Color-Magnitude Relation at $z = 1.24$.

See MEURER, GERHARDT R., et al. The Discovery of Globular Clusters in the Protospiral Galaxy NGC 2915: Implications for Hierarchical Galaxy Evolution.

MARTEL, ANDRÉ R. See BLAKESLEE, JOHN P., et al. Discovery of Two Distant Type Ia Supernovae in the Hubble Deep Field–North with the Advanced Camera for Surveys.

MARTEL, F. See CREW, G. B., et al. *HETE-2* Localization and Observation of the Bright, X-Ray–rich Gamma-Ray Burst GRB 021211.

MARTENS, P. C. H. The Effect of Background Subtraction on the Temperature of EIT Coronal Loops. *J. T. Schmelz, J. E. Beene, K. Nasraoui, H. T. Blevins, P. C. H. Martens, & J. W. Cirtain.* 599, 604 (2003)

MARTÍ, J. VLA and BIMA Observations toward the Exciting Source of the Massive HH 80–81 Outflow. *Y. Gómez, L. F. Rodríguez, J. M. Girart, G. Garay, & J. Martí.* 597, 414 (2003)

MARTÍ, JOSÉ-MARÍA. Three-dimensional Simulations of Relativistic Precessing Jets Probing the Structure of Superluminal Sources. *Miguel-Ángel Aloy, José-María Martí, José-Luis Gómez, Iván Agudo, Ewald Müller, & José-María Ibáñez.* 585, L109 (2003)

MARTIN, C. Models for Evolution of Dusty and E/S0 Galaxies Seen in Multiband Surveys. *C. K. Xu, C. J. Lonsdale, D. L. Shupe, A. Franceschini, C. Martin, & D. Schiminovich.* 587, 90 (2003)

Optical Pulse-Phased Photopolarimetry of PSR B0656+14. *B. Kern, C. Martin, B. Mazin, & J. P. Halpern.* 597, 1049 (2003)

MARTIN, CRYSTAL L. *Chandra* Observations of Expanding Shells in the Dwarf Starburst Galaxy NGC 3077. *Jürgen Ott, Crystal L. Martin, & Fabian Walter.* 594, 776 (2003)

The Star-forming Dwarf Galaxy Populations of two $z \sim 0.4$ Clusters: MS 1512.4+3647 and A851. *Jennifer M. Lotz, Crystal L. Martin, & Henry C. Ferguson.* 596, 143 (2003)

The Influence of Supershells and Galactic Outflows on the Escape of Ionizing Radiation from Dwarf Starburst Galaxies. *Akima Fujita, Crystal L. Martin, Mordecai-Mark Mac Low, & Tom Abel.* 599, 50 (2003)

MARTÍN, E. L. Spectroscopic Estimate of Surface Gravity for a Planetary Member in the σ Orionis Cluster. *E. L. Martín & M. R. Zapatero Osorio.* 593, L113 (2003)

MARTÍN, EDUARDO L. A *Hubble Space Telescope* Wide Field Planetary Camera 2 Survey for Brown Dwarf Binaries in the α Persei and the Pleiades Open Clusters. *Eduardo L. Martín, David Barrado y Navascués, Isabelle Baraffe, Hervé Bouy, & Scott Dahm.* 594, 525 (2003)

MARTIN, H. M. See CLOSE, LAIRD M., et al. High-Resolution Images of Orbital Motion in the Trapezium Cluster: First Scientific Results from the Multiple Mirror Telescope Deformable Secondary Mirror Adaptive Optics System.

MARTÍN, I. Intensities of E2 Spectral Lines in the Astrophysically Important Ion Mg II. *E. Charro & I. Martín.* 585, 1191 (2003)

MARTIN, P. G. Three Lynds Bright Nebulae. *J. L. Karr & P. G. Martin.* 595, 880 (2003)

Triggered Star Formation in the W5 H II Region. *J. L. Karr & P. G. Martin.* 595, 900 (2003)

MARTIN, PETER G. See CLAYTON, GEOFFREY C., et al. The Role of Polycyclic Aromatic Hydrocarbons in Ultraviolet Extinction. I. Probing Small Molecular Polycyclic Aromatic Hydrocarbons.

MARTIN, R. See FIELDS, DALE L., et al. High-Precision Limb-Darkening Measurement of a K3 Giant Using Microlensing.

MARTINEZ, RUBEN. Optical Polarization Observations of NGC 6231: Evidence for a Past Supernova Fingerprint. *Carlos Feinstein, Ruben Martinez, M. Marcela Vergne, Gustavo Baume, & Ruben Vazquez.* 598, 349 (2003)

MARTÍNEZ-DELGADO, D. A New Method of Estimating the Mass-to-Light Ratio of the Ursa Minor Dwarf Spheroidal Galaxy. *M. ángeles Gómez-Flechoso & D. Martínez-Delgado.* 586, L123 (2003)

MARTINEZ-DELGADO, DAVID. See NEWBERG, HEIDI JO, et al. Sagittarius Tidal Debris 90 kiloparsecs from the Galactic Center.

MARTÍNEZ-GALARCE, DENNIS S. The Solar Chromosphere/Corona Interface. I. Far-Ultraviolet to Extreme-Ultraviolet Observations and Modeling of Unresolved Coronal Funnels. *Dennis S. Martínez-Galarce, Arthur B. C. Walker II, Troy W. Barbee II, & Richard B. Hoover.* 585, 1095 (2003)

MARTINI, P. See CHEN, HSIAO-WEN, et al. The Las Campanas Infrared Survey. IV. The Photometric Redshift Survey and the Rest-Frame R-Band Galaxy Luminosity Function at $0.5 \leq z \leq 1.5$.

See STANEK, K. Z., et al. Spectroscopic Discovery of the Supernova 2003dh Associated with GRB 030329.

See MATHESON, T., et al. Photometry and Spectroscopy of GRB 03029 and Its Associated Supernova 2003dh: The First Two Months.

MARTINI, PAUL. Circumnuclear Dust in Nearby Active and Inactive Galaxies. II. Bars, Nuclear Spirals, and the Fueling of Active Galactic Nuclei. *Paul Martini, Michael W. Regan, John S. Mulchaey, & Richard W. Pogge.* 589, 774 (2003)

Circumnuclear Dust in Nearby Active and Inactive Galaxies. I. Data. *Paul Martini, Michael W. Regan, John S. Mulchaey, & Richard W. Pogge.* 146, 353 (2003)

Iron Emission in the $z = 6.4$ Quasar SDSS J114816.64+525150.3. *Aaron J. Barth, Paul Martini, Charles H. Nelson, & Luis C. Ho.* 594, L95 (2003)

Multiepoch Sky Surveys and the Lifetime of Quasars. *Paul Martini & Donald P. Schneider.* 597, L109 (2003)

MARTINIC, N. See WATANABE, K., et al. Solar Neutron Event in Association with a Large Solar Flare on 2000 November 24.

MARTINIS, L. See CRILL, B. P., et al. BOOMERANG: A Balloon-Borne Millimeter-Wave Telescope and Total Power Receiver for Mapping Anisotropy in the Cosmic Microwave Background.

MARTINS, LUCIMARA P. Ultraviolet Continuum, Physical Conditions, and Filling Factor in Active Galactic Nuclei. *Lucimara P. Martins, Sueli M. Viegas, & Ruth Gruenwald.* 587, 562 (2003)

Ultraviolet Continuum, Physical Conditions and Filling Factor in Active Galactic Nuclei: Erratum (ApJ, 587, 562 [2003]). *Lucimara P. Martins, Sueli M. Viegas, & Ruth Gruenwald.* 592, 1264 (2003) (Orig. paper in 587, 562 (2003))

MARTIROSIA, H. Detection of the High-Energy Cosmic Rays from the Monogem Ring. *A. Chilingarian, H. Martirosia, & G. Gharagyozyan.* 597, L129 (2003)

MARTOCCHIA, ANDREA. The Lack of Broad-Line Regions in Low Accretion Rate Active Galactic Nuclei as Evidence of Their Origin in the Accretion Disk. *Fabrizio Nicastro, Andrea Martocchia, & Giorigo Matt.* 589, L13 (2003)

MARTOS, MARCO. Nonlinear Effects in Models of the Galaxy. I. Midplane Stellar Orbits in the Presence of Three-Dimensional Spiral Arms. *Bárbara Pichardo, Marco Martos, Edmundo Moreno, & Julia Espresate.* 582, 230 (2003)

MARUI, KAZUKO. See ITOH, YOICHI, et al. Interferometric Observations of the T Tauri Stars in the MBM 12 Cloud.

MARUTA, DAIZO. Viscosity-driven Winds from Magnetized Accretion Disks. *Daizo Maruta & Osamu Kaburaki.* 593, 85 (2003)

MARVEL, KEVIN B. See IMAI, HIROSHI, et al. The Three-dimensional Kinematics of Water Masers around the Semiregular Variable RT Virginis.

MARZIANI, P. An Optical Spectroscopic Atlas of Low-Redshift Active Galactic Nuclei. *P. Marziani, J. W. Sulentic, R. Zamanov, M. Calvini, D. Dultzin-Hacyan, R. Bachev, & T. Zwitter.* 145, 199 (2003)

Radio-loud Active Galactic Nuclei in the Context of the Eigenvector 1 Parameter Space. *J. W. Sulentic, S. Zamfir, P. Marziani, R. Bachev, M. Calvani, & D. Dultzin-Hacyan.* 597, L17 (2003)

MARZKE, RONALD O. See CHEN, HSIAO-WEN, et al. The Las Campanas Infrared Survey. IV. The Photometric Redshift Survey and the Rest-Frame R-Band Galaxy Luminosity Function at $0.5 \leq z \leq 1.5$.

MASERA, STEFANO. Abundances of Post–Iron-Peak Elements in HD 35155: A Symbiotic Star of Spectral Type S. *Andrew D. Vanture, George Wallerstein, Roberto Gallino, & Stefano Masera.* 587, 384 (2003)

MASETTI, N. Spectral and Temporal Behavior of the Black Hole Candidate XTE J1118+480 as Observed with *BeppoSAX*. *F. Frontera, L. Amati, A. A. Zdziarski, T. Belloni, S. Del Sordo, N. Masetti, M. Orlandini, & E. Palazzi.* 592, 1110 (2003)

See HJORTH, J., et al. Very High Column Density and Small Reddening toward GRB 020124 at $z = 3.20$.

See GREINER, J., et al. GRB 011121: A Collimated Outflow into Wind-blown Surroundings.

MAS-HESSE, J. M. See MEREGHETTI, S., et al. *Integral* and *XMM-Newton* Observations of the Weak Gamma-Ray Burst GRB 030227.

Nuclear Activity and Massive Star Formation in the Low-Luminosity Active Galactic Nucleus NGC 4303: *Chandra* X-Ray Observations. *E. Jiménez-Bailón, M. Santos-Lleó, J. M. Mas-Hesse, M. Guainazzi, L. Colina, M. Cerviño, & Rosa M. González Delgado.* 593, 127 (2003)

Lyα Emission in Starbursts: Implications for Galaxies at High Redshift. *J. M. Mas-Hesse, D. Kunth, G. Tenorio-Tagle, C. Leitherer, R. J. Terlevich, & E. Terlevich.* 598, 858 (2003)

MAS-HESSE, J. MIGUEL. Detection of a Super–Star Cluster as the Ionizing Source in the Low-Luminosity Active Galactic Nucleus NGC 4303: Erratum (ApJ, 579, 545 [2002]). *Luis Colina, Rosa Gonzalez Delgado, J. Miguel Mas-Hesse, Claus Leitherer, & Elena Jiménez Bailón.* 582, 1269 (2003) (Orig. paper in 579, 545 (2002))

Detection of a Super–Star Cluster as the Ionizing Source in the Low-Luminosity Active Galactic Nucleus NGC 4303: Erratum (ApJ, 582, 1269 [2003]). *Luis Colina, Rosa Gonzalez-Delgado, J. Miguel Mas-Hesse, Claus Leitherer, & Elena Jiménez-Bailón.* 586, 692 (2003) (Orig. paper in 582, 1269 (2003))

The First Deep Advanced Camera for Surveys Lyα Images of Local Starburst Galaxies. *Daniel Kunth, Claus Leitherer, J. Miguel Mas-Hesse, Göran Östlin, & Artashes Petrosian.* 597, 263 (2003)

MASHNIK, STEPAN G. Challenging Cosmic-Ray Propagation with Antiprotons: Evidence for a "Fresh" Nuclei Component? *Igor V. Moskalenko, Andrew W. Strong, Stepan G. Mashnik, & Jonathan F. Ormes.* 586, 1050 (2003)

MASI, S. See CRILL, B. P., et al. BOOMERANG: A Balloon-Borne Millimeter-Wave Telescope and Total Power Receiver for Mapping Anisotropy in the Cosmic Microwave Background.

See RUHL, J. E., et al. Improved Measurement of the Angular Power Spectrum of Temperature Anisotropy in the Cosmic Microwave Background from Two New Analyses of BOOMERANG Observations.

MASIERO, JOSEPH. An Intrinsic Absorption Complex toward RX J1230.8+0115: Geometry and Photoionization Conditions. *Rajib Ganguly, Joseph Masiero, Jane C. Charlton, & Kenneth R. Sembach.* 598, 922 (2003)

MASON, B. S. The Anisotropy of the Microwave Background to $l = 3500$: Deep Field Observatons with the Cosmic Background Imager. *B. S. Mason, T. J. Pearson, A. C. S. Readhead, M. C. Shepherd, J. Sievers, P. S. Udomprasert, J. K. Cartwright, A. J. Farmer, S. Padin, S. T. Myers, J. R. Bond, C. R. Contaldi, U. Pen, S. Prunet, D. Pogosyan, J. E. Carlstrom, J. Kovac, E. M. Leitch, C. Pryke, N. W. Halverson, W. L. Holzapfel, P. Altamirano, L. Bronfman, S. Casassus, J. May, & M. Joy.* 591, 540 (2003)

See PEARSON, T. J., et al. The Anisotropy of the Microwave Background to $l = 3500$: Mosaic Observations with the Cosmic Background Imager.

See MYERS, S. T., et al. A Fast Gridded Method for the Estimation of the Power Spectrum of the Cosmic Microwave Background from Interferometer Data with Application to the Cosmic Background Imager.

See SIEVERS, J. L., et al. Cosmological Parameters from Cosmic Background Imager Observations and Comparisons with BOOMERANG, DASI, and MAXIMA.

MASON, G. M. Evidence for a Suprathermal Seed Population of Heavy Ions Accelerated by Interplanetary Shocks near 1 AU. *M. I. Desai, G. M. Mason, J. R. Dwyer, J. E. Mazur, R. E. Gold, S. M. Krimigis, C. W. Smith, & R. M. Skoug.* 588, 1149 (2003)

See SLOCUM, P. L., et al. Elemental Fractionation in Small Solar Energetic Particle Events.

MASON, H. E. CHIANTI—An Atomic Database for Emission Lines. IV. Proton Rates and Other Improvements. *P. R. Young, G. del Zanna, E. Landi, K. P. Dere, H. E. Mason, & M. Landini.* 144, 135 (2003)

MASON, K. O. The X-Ray Spectrum of the Seyfert I Galaxy Markarian 766: Dusty Warm Absorber or Relativistic Emission Lines? *K. O. Mason, G. Branduardi-Raymont, P. M. Ogle, M. J. Page, E. M. Puchnarewicz, E. Behar, F. A. Córdova, S. Davis, L. Maraschi, I. M. McHardy, P. T. O'Brien, W. C. Priedhorsky, & T. P. Sasseen.* 582, 95 (2003)

MASON, P. See RUHL, J. E., et al. Improved Measurement of the Angular Power Spectrum of Temperature Anisotropy in the Cosmic Microwave Background from Two New Analyses of BOOMERANG Observations.

MASON, P. V. See CRILL, B. P., et al. BOOMERANG: A Balloon-Borne Millimeter-Wave Telescope and Total Power Receiver for Mapping Anisotropy in the Cosmic Microwave Background.

MASSA, D. Constraints on the Ionization Balance of Hot-Star Winds from *FUSE* Observations of O Stars in the Large Magellanic Cloud. *D. Massa, A. W. Fullerton, G. Sonneborn, & J. B. Hutchings.* 586, 996 (2003)

Far Ultraviolet Spectroscopic Explorer Snapshot Survey of O VI Variability in the Winds of 66 OB-Type Stars. *N. Lehner, A. W. Fullerton, D. Massa, K. R. Sembach, & J. Zsargó.* 589, 526 (2003)

MASSARO, E. See GRANDI, P., et al. *BeppoSAX* Observations of Centaurus A: The Hard Continuum and the Iron-Line Feature.

MASSAROTTI, M. Age, Metallicity, and Star Formation History of Cluster Galaxies at $z \sim 0.3$. *P. Merluzzi, F. La Barbera, M. Massarotti, G. Busarello, & M. Capaccioli.* 589, 147 (2003)

On the Invariant Distribution of Galaxies in the r_e-$\langle\mu\rangle_e$ Plane out to $z = 0.64$. *F. La Barbera, G. Busarello, P. Merluzzi, M. Massarotti, & M. Capaccioli.* 595, 127 (2003)

MASSET, F. S. On the Spiral Structure of NGC 2915 and Dark Matter. *F. S. Masset & M. Bureau.* 586, 152 (2003)

Runaway Migration and the Formation of Hot Jupiters. *F. S. Masset & J. C. B. Papaloizou.* 588, 494 (2003)

MASSI, F. See VALENTINI, G., et al. Optical and Near-Infrared Photometry of the Type Ia Supernova 2000E in NGC 6951.

MASSONE, ANNA MARIA. Regularized Electron Flux Spectra in the 2002 July 23 Solar Flare. *Michele Piana, Anna Maria Massone, Eduard P. Kontar, A. Gordon Emslie, John C. Brown, & Richard A. Schwartz.* 595, L127 (2003)

MASTICHIADIS, A. Modeling the TeV Gamma-Ray Spectra of Two Low-Redshift Active Galactic Nuclei: Markarian 501 and Markarian 421. *A. Konopelko, A. Mastichiadis, J. Kirk, O. C. de Jager, & F. W. Stecker.* 597, 851 (2003)

MASUDA, K. See SUMI, T., et al. Microlensing Optical Depth toward the Galactic Bulge from Microlensing Observations during 2000 with Difference Image Analysis.

MASUDA, S. See WATANABE, K., et al. Solar Neutron Event in Association with a Large Solar Flare on 2000 November 24.

MASUDA, SEIJI. See SATO, BUN'EI, et al. A Planetary Companion to the G-Type Giant Star HD 104985.

MATARRESE, S. Probing Dark Energy with the Cosmic Microwave Background: Projected Constraints from the *Wilkinson Microwave Anisotropy Probe* and *Planck*. *Amedeo Balbi, C. Baccigalupi, F. Perrotta, S. Matarrese, & N. Vittorio.* 588, L5 (2003)

High-Resolution Simulations of Non-Gaussian Cosmic Microwave Background Maps in Spherical Coordinates. *M. Liguori, S. Matarrese, & L. Moscardini.* 597, 57 (2003)

MATEO, MARIO. Deep *Hubble Space Telescope* Imaging of IC 1613. II. The Star Formation History. *Evan D. Skillman, Eline Tolstoy, Andrew A. Cole, Andrew E. Dolphin, Abhijit Saha, J. S. Gallagher, R. C. Dohm-Palmer, & Mario Mateo.* 596, 253 (2003)

MATHER, J. C. Analysis of the Diffuse Near-Infrared Emission from Two-Micron All-Sky Survey Deep Integration Data: Foregrounds versus the Cosmic Infrared Background. *S. Odenwald, A. Kashlinsky, J. C. Mather, M. F. Skrutskie, & R. M. Cutri.* 583, 535 (2003)

MATHESON, T. The Spectroscopic Variability of GRB 021004. *T. Matheson, P. M. Garnavich, C. Foltz, S. West, G. Williams, E. Falco, M. L. Calkins,*

F. J. Castander, E. Gawiser, S. Jha, D. Bersier, & K. Z. Stanek. 582, L5 (2003)

See GARNAVICH, P. M., et al. Discovery of the Low-Redshift Optical Afterglow of GRB 011121 and Its Progenitor Supernova SN 2001ke.

See BERSIER, D., et al. The Unusual Optical Afterglow of the Gamma-Ray Burst GRB 021004: Color Changes and Short-Timescale Variability.

See STANEK, K. Z., et al. Spectroscopic Discovery of the Supernova 2003dh Associated with GRB 030329.

Photometry and Spectroscopy of GRB 03029 and Its Associated Supernova 2003dh: The First Two Months. *T. Matheson, P. M. Garnavich, K. Z. Stanek, D. Bersier, S. T. Holland, K. Krisciunas, N. Caldwell, P. Berlind, J. S. Bloom, M. Bolte, A. Z. Bonanos, M. J. I. Brown, W. R. Brown, M. L. Calkins, P. Challis, R. Chornock, L. Echevarria, D. J. Eisenstein, M. E. Everett, A. V. Filippenko, K. Flint, R. J. Foley, D. L. Freedman, Mario Hamuy, P. Harding, N. P. Hathi, M. Hicken, C. Hoopes, C. Impey, B. T. Jannuzi, R. A. Jansen, S. Jha, J. Kaluzny, S. Kannappan, R. P. Kirshner, D. W. Latham, J. C. Lee, D. C. Leonard, W. Li, K. L. Luhman, P. Martini, H. Mathis, J. Maza, S. T. Megeath, L. R. Miller, D. Minniti, E. W. Olszewski, M. Papenkova, M. M. Phillips, B. Pindor, D. D. Sasselov, R. Schild, H. Schweiker, T. Spahr, J. Thomas-Osip, I. Thompson, D. Weisz, R. Windhorst, & D. Zaritsky.* 599, 394 (2003)

MATHESON, THOMAS. See TONRY, JOHN L., et al. Cosmological Results from High-z Supernovae.

See MAZZALI, PAOLO A., et al. The Type Ic Hypernova SN 2003dh/GRB 030329.

MATHEWS, GRANT J. See AOKI, WAKO, et al. Europium Isotope Ratios in s-Process Element-enhanced Metal-poor Stars: A New Probe of the ^{151}Sm Branching.

MATHEWS, WILLIAM G. Dust in Hot Gas: Far-Infrared Emission from Three Local Elliptical Galaxies. *Pasquale Temi, William G. Mathews, Fabrizio Brighenti, & Jesse D. Bregman.* 585, L121 (2003)

Feedback Heating in Cluster and Galactic Cooling Flows. *Fabrizio Brighenti & William G. Mathews.* 587, 580 (2003)

Rapid Cooling of Dusty Gas in Elliptical Galaxies. *William G. Mathews & Fabrizio Brighenti.* 590, L5 (2003)

XMM-Newton and *Chandra* Observations of the Galaxy Group NGC 5044. I. Evidence for Limited Multiphase Hot Gas. *David A. Buote, Aaron D. Lewis, Fabrizio Brighenti, & William G. Mathews.* 594, 741 (2003)

XMM-Newton and *Chandra* Observations of the Galaxy Group NGC 5044. II. Metal Abundances and Supernova Fraction. *David A. Buote, Aaron D. Lewis, Fabrizio Brighenti, & William G. Mathews.* 595, 151 (2003)

Circulation Flows: Cooling Flows with Bubble Return. *William G. Mathews, Fabrizio Brighenti, David A. Boute, & Aaron D. Lewis.* 596, 159 (2003)

Stellar Orbits and the Interstellar Gas Temperature in Elliptical Galaxies. *William G. Mathews & Fabrizio Brighenti.* 599, 992 (2003)

MATHIEU, ROBERT D. Gas in the Terrestrial Planet Region of Disks: CO Fundamental Emission from T Tauri Stars. *Joan Najita, John S. Carr, & Robert D. Mathieu.* 589, 931 (2003)

MATHIOUDAKIS, M. The Extreme-Ultraviolet Continuum of a Strong Stellar Flare. *D. J. Christian, M. Mathioudakis, D. Jevremović, J. Dupuis, S. Vennes, & A. Kawka.* 593, L105 (2003)

MATHIOUDAKIS, MIHALIS. Observational Evidence for Mode Coupling in the Chromospheric Network. *R. T. James McAteer, Peter T. Gallagher, David R. Williams, Mihalis Mathioudakis, D. Shaun Bloomfield, Kenneth J. H. Phillips, & Francis P. Keenan.* 587, 806 (2003)

MATHIS, H. See MATHESON, T., et al. Photometry and Spectroscopy of GRB 03029 and Its Associated Supernova 2003dh: The First Two Months.

MATHUR, S. *Chandra* Observation of 3C 212: A New Look at the X-Ray and Ultraviolet Absorbers. *T. L. Aldcroft, A. Siemiginowska, M. Elvis, S. Mathur, F. Nicastro, & S. S. Murray.* 597, 751 (2003)

Toward a Self-Consistent Model of the Ionized Absorber in NGC 3783. *Y. Krongold, F. Nicastro, N. S. Brickhouse, M. Elvis, D. A. Liedahl, & S. Mathur.* 597, 832 (2003)

MATHUR, SMITA. Tracing the Warm-Hot Intergalactic Medium at Low Redshift: X-Ray Forest Observations toward H1821+643. *Smita Mathur, David H. Weinberg, & Xuelei Chen.* 582, 82 (2003)

See GABEL, JACK R., et al. The Ionized Gas and Nuclear Environment in NGC 3783. II. Averaged *Hubble Space Telescope*/STIS and *Far Ultraviolet Spectroscopic Explorer* Spectra.

Chandra Discovery of the Intracluster Medium around UM 425 at a Redshift of 1.47. *Smita Mathur & Rik J. Williams.* 589, L1 (2003)

See GABEL, JACK R., et al. The Ionized Gas and Nuclear Environment in NGC 3783. III. Detection of a Decreasing Radial Velocity in an Intrinsic Ultraviolet Absorber.

MATIS, H. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

MATSUBA, RYUICHI. p-Process Nucleosynthesis inside Supernova-driven Supercritical Accretion Disks. *Shin-ichirou Fujimoto, Masa-aki Hashimoto, Osamu Koike, Kenzo Arai, & Ryuichi Matsuba.* 585, 418 (2003)

MATSUBARA, TAKAHIKO. Statistics of Smoothed Cosmic Fields in Perturbation Theory. I. Formation and Useful Formulae in Second-Order Perturbation Theory. *Takahiko Matsubara.* 584, 1 (2003)

See SZALAY, ALEXANDER S., et al. Karhunen-Loève Estimation of the Power Spectrum Parameters from the Angular Distribution of Galaxies in Early Sloan Digital Sky Survey Data.

Phase Correlations in Non-Gaussian Fields. *Takahiko Matsubara.* 591, L79 (2003)

MATSUBARA, Y. See SUMI, T., et al. Microlensing Optical Depth toward the Galactic Bulge from Microlensing Observations during 2000 with Difference Image Analysis.

See ENOMOTO, R., et al. Search for TeV Gamma Rays from SN 1987A in 2001.

See WATANABE, K., et al. Solar Neutron Event in Association with a Large Solar Flare on 2000 November 24.

MATSUDA, Y. See SHIMASAKU, K., et al. Subaru Deep Survey. IV. Discovery of a Large-Scale Structure at Redshift $\simeq$5.

MATSUDA, YUICHI. See OUCHI, MASAMI, et al. Subaru Deep Survey. II. Luminosity Functions and Clustering Properties of Lyα Emitters at $z = 4.86$ in the Subaru Deep Field.

MATSUMIYA, MAKOTO. Circular Polarization from Gamma-Ray Burst Afterglows. *Makoto Matsumiya & Kunihito Ioka.* 595, L25 (2003)

MATSUMOTO, K. See BÖTTCHER, M., et al. Coordinated Multiwavelength Observations of BL Lacertae in 2000.

MATSUMOTO, RYOJI. Global Three-dimensional Magnetohydrodynamic Simulations of Black Hole Accretion Disks: X-Ray Flares in the Plunging Region. *Mami Machida & Ryoji Matsumoto.* 585, 429 (2003)

MATSUMOTO, TOMOAKI. A Fast Algorithm for Solving the Poisson Equation on a Nested Grid. *Tomoaki Matsumoto & Tomoyuki Hanawa.* 583, 296 (2003)

Fragmentation of a Molecular Cloud Core versus Fragmentation of the Massive Protoplanetary Disk in the Main Accretion Phase. *Tomoaki Matsumoto & Tomoyuki Hanawa.* 595, 913 (2003)

MATSUMURA, SOKO. The Origin of Jovian Planets in Protostellar Disks: The Role of Dead Zones. *Soko Matsumura & Ralph E. Pudritz.* 598, 645 (2003)

MATSUOKA, M. See CREW, G. B., et al. *HETE-2* Localization and Observation of the Bright, X-Ray–rich Gamma-Ray Burst GRB 021211.

MATSUYAMA, ISAMU. Halting Planet Migration by Photoevaporation from the Central Source. *Isamu Matsuyama, Doug Johnstone, & Norman Murray.* 585, L143 (2003)

Indications for Grain Growth and Mass Decrease in Cold Dust Disks around Classical T Tauri Stars in the MBM 12 Young Association. *Michiel R. Hogerheijde, Doug Johnstone, Isamu Matsuyama, Ray Jayawardhana, & James Muzerolle.* 593, L101 (2003)

MATT, G. See GRANDI, P., et al. *BeppoSAX* Observations of Centaurus A: The Hard Continuum and the Iron-Line Feature.

MATT, GIORGIO. The Lack of Broad-Line Regions in Low Accretion Rate Active Galactic Nuclei as Evidence of Their Origin in the Accretion Disk. *Fabrizio Nicastro, Andrea Martocchia, & Giorigo Matt.* 589, L13 (2003)

MATTEUCCI, FRANCESCA. The Cosmic Evolution of the Galaxy Luminosity Density. *Francesco Calura & Francesca Matteucci.* 596, 734 (2003)

MATTHAEUS, W. H. Toward an ab Initio Theory of the Solar Modulation of Cosmic Rays. *S. Parhi, J. W. Bieber, W. H. Matthaeus, & R. A. Burger.* 585, 502 (2003)

Nonlinear Collisionless Perpendicular Diffusion of Charged Particles. *W. H. Matthaeus, G. Qin, J. W. Bieber, & G. P. Zank.* 590, L53 (2003)

Test Particle Acceleration in Three-dimensional Magnetohydrodynamic Turbulence. *P. Dmitruk, W. H. Matthaeus, N. Seenu, & M. R. Brown.* 597, L81 (2003)

Trapping of Solar Energetic Particles by the Small-Scale Topology of Solar Wind Turbulence. *D. Ruffolo, W. H. Matthaeus, & P. Chuychai.* 597, L169 (2003)

MATTHAEUS, WILLIAM H. Turbulent Heating of the Distant Solar Wind by Interstellar Pickup Protons. *Philip A. Isenberg, Charles W. Smith, & William H. Matthaeus.* 592, 564 (2003)

Low-Frequency Waves and Turbulence in an Open Magnetic Region: Timescales and Heating Efficiency. *Pablo Dmitruk & William H. Matthaeus.* 597, 1097 (2003)

MATTHEWS, H. E. Neutral Hydrogen Associated with NGC 7129. *H. E. Matthews, C. R. Purton, R. S. Roger, P. E. Dewdney, & G. F. Mitchell.* 592, 176 (2003)

MATTHEWS, J. See MUKADEM, ANJUM S., et al. Constraining the Evolution of ZZ Ceti.

MATTHEWS, JAYMIE. Scattered Light from Close-in Extrasolar Planets: Prospects of Detection with the *MOST* Satellite. *Daniel Green, Jaymie Matthews, Sara Seager, & Rainer Kuschnig.* 597, 590 (2003)

MATTHEWS, K. See FOX, D. W., et al. Discovery of Early Optical Emission from GRB 021211.

See GHEZ, A. M., et al. The First Measurement of Spectral Lines in a Short-Period Star Bound to the Galaxy's Central Black Hole: A Paradox of Youth.

A Search for Close Binaries in the ρ Ophiuchi Star-forming Region. *M. Barsony, C. Koresko, & K. Matthews.* 591, 1064 (2003)

Nascent Starbursts in Synchrotron-deficient Galaxies with Hot Dust. *H. Roussel, G. Helou, R. Beck, J. J. Condon, A. Bosma, K. Matthews, & T. H. Jarrett.* 593, 733 (2003)

MATTHEWS, L. D. High-Latitude H I in the Low Surface Brightness Galaxy UGC 7321. *L. D. Matthews & Kenneth Wood.* 593, 721 (2003)

MATTHEWS, LYNN D. See ESKRIDGE, PAUL B., et al. Ultraviolet-Optical Pixel Maps of Face-on Spiral Galaxies: Clues for Dynamics and Star Formation Histories.

MATTHEWS, SARAH A. Evidence of Flaring in a Transequatorial Loop on the Sun. *Louise K. Harra, Sarah A. Matthews, & Lidia van Driel-Gesztelyi.* 598, L59 (2003)

MATTILA, K. Has the Optical Extragalactic Background Light Been Detected? *K. Mattila.* 591, 119 (2003)

MATTOX, J. R. EGRET Upper Limits on the High-Energy Gamma-Ray Emission of Galaxy Clusters. *O. Reimer, M. Pohl, P. Sreekumar, & J. R. Mattox.* 588, 155 (2003)

See BÖTTCHER, M., et al. Coordinated Multiwavelength Observations of BL Lacertae in 2000.

MATTSON, BARBARA J. Ozone Depletion from Nearby Supernovae. *Neil Gehrels, Claude M. Laird, Charles H. Jackman, John K. Cannizzo, Barbara J. Mattson, & Wan Chen.* 585, 1169 (2003)

MATZNER, CHRISTOPHER D. The Fate of Nonradiative Magnetized Accretion Flows: Magnetically Frustrated Convection. *Ue-Li Pen, Christopher D. Matzner, & Shingkwong Wong.* 596, L207 (2003)

MAUCHE, C. W. See ISRAEL, G. L., et al. Unveiling the Nature of the 321 Second Modulation in RX J0806.3+1527: Near-Simultaneous *Chandra* and Very Large Telescope Observations.

MAUCHE, CHRISTOPHER W. The Fe XXII $I(11.92\ \text{Å})/I(11.77\ \text{Å})$ Density Diagnostic Applied to the *Chandra* High-Energy Transmission Grating Spectrum of EX Hydrae. *Christopher W. Mauche, Duane A. Liedahl, & Kevin B. Fournier.* 588, L101 (2003)

MAUGHAN, B. J. *Chandra* X-Ray Analysis of the Massive High-Redshift Galaxy Clusters Cl J1113.1−2615 and Cl J0152.7−1357. *B. J. Maughan, L. R. Jones, H. Ebeling, E. Perlman, P. Rosati, C. Frye, & C. R. Mullis.* 587, 589 (2003)

MAUROGORDATO, S. Galaxy Alignments as a Probe of the Dynamical State of Clusters. *M. Plionis, C. Benoist, S. Maurogordato, C. Ferrari, & S. Basilakos.* 594, 144 (2003)

MAUSKOPF, P. D. See BENSON, B. A., et al. Peculiar Velocity Limits from Measurements of the Spectrum of the Sunyaev-Zeldovich Effect in Six Clusters of Galaxies.

See CRILL, B. P., et al. BOOMERANG: A Balloon-Borne Millimeter-Wave Telescope and Total Power Receiver for Mapping Anisotropy in the Cosmic Microwave Background.

See RUHL, J. E., et al. Improved Measurement of the Angular Power Spectrum of Temperature Anisotropy in the Cosmic Microwave Background from Two New Analyses of BOOMERANG Observations.

MAX, CLAIRE. Adaptive Optics Imaging and Spectroscopy of Cygnus A. I. Evidence for a Minor Merger. *Gabriela Canalizo, Claire Max, David Whysong, Robert Antonucci, & Scott E. Dahm.* 597, 823 (2003)

MAY, J. See MASON, B. S., et al. The Anisotropy of the Microwave Background to $l = 3500$: Deep Field Observatons with the Cosmic Background Imager.

See PEARSON, T. J., et al. The Anisotropy of the Microwave Background to $l = 3500$: Mosaic Observations with the Cosmic Background Imager.

See SIEVERS, J. L., et al. Cosmological Parameters from Cosmic Background Imager Observations and Comparisons with BOOMERANG, DASI, and MAXIMA.

MAZA, J. See MATHESON, T., et al. Photometry and Spectroscopy of GRB 03029 and Its Associated Supernova 2003dh: The First Two Months.

MAZEH, T. The Smallest Mass Ratio Young Star Spectroscopic Binaries: Erratum (ApJ, 569, 863 [2002]). *L. Prato, M. Simon, T. Mazeh, I. S. McLean, D. Norman, & S. Zucker.* 598, 1409 (2003)

The Mass Ratio Distribution in Main-Sequence Spectroscopic Binaries Measured by Infrared Spectroscopy. *T. Mazeh, M. Simon, L. Prato, B. Markus, & S. Zucker.* 599, 1344 (2003)

MAZEH, TSEVI. A Possible Correlation between Mass Ratio and Period Ration in Multiple Planetary Systems. *Tsevi Mazeh & Shay Zucker.* 590, L115 (2003)

On the Mass-Ratio Distribution of Spectroscopic Binaries. *Dorit Goldberg, Tsevi Mazeh, & David W. Latham.* 591, 397 (2003)

MAZETS, E. See PRICE, P. A., et al. Discovery of GRB 020405 and Its Late Red Bump.

See FEROCI, M., et al. The 2001 April Burst Activation of SGR 1900+14: X-Ray Afterglow Emission.

Observations of Giant Outbursts from Cygnus X-1. *S. Golenetskii, R. Aptekar, D. Frederiks, E. Mazets, V. Palshin, K. Hurley, T. Cline, & B. Stern.* 596, 1113 (2003)

MAZIN, B. Optical Pulse-Phased Photopolarimetry of PSR B0656+14. *B. Kern, C. Martin, B. Mazin, & J. P. Halpern.* 597, 1049 (2003)

MAZUK, S. Near-Infrared Spectrophotometry and the CO Emission in V2274 Cygni (Nova Cygni 2001 No. 1). *Richard J. Rudy, William L. Dimpfl, David K. Lynch, S. Mazuk, Catherine C. Venturini, John C. Wilson, R. C. Puetter, & R. Brad Perry.* 596, 1229 (2003)

MAZUR, J. E. Evidence for a Suprathermal Seed Population of Heavy Ions Accelerated by Interplanetary Shocks near 1 AU. *M. I. Desai, G. M. Mason, J. R. Dwyer, J. E. Mazur, R. E. Gold, S. M. Krimigis, C. W. Smith, & R. M. Skoug.* 588, 1149 (2003)

See SLOCUM, P. L., et al. Elemental Fractionation in Small Solar Energetic Particle Events.

MAZZALI, P. See KAWABATA, K. S., et al. On the Spectrum and Spectropolarimetry of Type Ic Hypernova SN 2003dh/GRB 030329.

MAZZALI, PAOLO A. See YOSHII, YUZURU, et al. The Optical/Near-Infrared Light Curves of SN 2002ap for the First 140 Days after Discovery.

A Two-Component Model for the Light Curves of Hypernovae. *Keiichi Maeda, Paolo A. Mazzali, Jingsong Deng, Ken'ichi Nomoto, Yuzuru Yoshii, Hiroyuki Tomita, & Yukiyasu Kobayashi.* 593, 931 (2003)

The Type Ic Hypernova SN 2003dh/GRB 030329. *Paolo A. Mazzali, Jinsong Deng, Nozomu Tominaga, Keiichi Maeda, Ken'ichi Nomoto, Thomas Matheson, Koji S. Kawabata, Krzysztof Z. Stanek, & Peter M. Garnavich.* 599, L95 (2003)

MAZZEI, P. Dark and Luminous Matter Connections from Smoothed Particle Hydrodynamic Simulations of Isolated Triaxial Collapsing Systems. *P. Mazzei & A. Curir.* 591, 784 (2003)

MAZZOTTA, P. See MARKEVITCH, M., et al. *Chandra* Temperature Map of A754 and Constraints on Thermal Conduction.

A *Chandra* Study of the Complex Structure in the Core of 2A 0335+096. *P. Mazzotta, A. C. Edge, & M. Markevitch.* 596, 190 (2003)

Kinetic Sunyaev-Zel'dovich Effect and Cosmic Microwave Background Polarization from Subsonic Bulk Motions of Dense Gas Clouds in Galaxy Cluster Cores. *J. M. Diego, P. Mazzotta, & J. Silk.* 597, L1 (2003)

MBONYE, MANASSE. Formation of Supermassive Black Holes in Galactic Bulges: A Rotating Collapse Model Consistent with the $M_{\rm BH}$-σ Relation. *Fred C. Adams, David S. Graff, Manasse Mbonye, & Douglas O. Richstone.* 591, 125 (2003)

MCARTHUR, BARBARA. A Planetary Companion to γ Cephei A. *Artie P. Hatzes, William D. Cochran, Michael Endl, Barbara McArthur, Diane B. Paulson, Gordon A. H. Walker, Bruce Campbell, & Stephenson Yang.* 599, 1383 (2003)

MCATEER, R. T. JAMES. Observational Evidence for Mode Coupling in the Chromospheric Network. *R. T. James McAteer, Peter T. Gallagher,*

David R. Williams, Mihalis Mathioudakis, D. Shaun Bloomfield, Kenneth J. H. Phillips, & Francis P. Keenan. 587, 806 (2003)

McBride, D. See Colavita, M., et al. Observations of DG Tauri with the Keck Interferometer.

McCabe, C. The First Detection of Spatially Resolved Mid-Infrared Scattered Light from a Protoplanetary Disk. *C. McCabe, G. Duchêne, & A. M. Ghez.* 588, L113 (2003)

No Fossil Disk in the T Tauri Multiple System V773 Tauri. *G. Duchêne, A. M. Ghez, C. McCabe, & A. J. Weinberger.* 592, 288 (2003)

McCall, B. J. See Thorburn, J. A., et al. Some Diffuse Interstellar Bands Related to Interstellar C_2 Molecules.

McCall, Benjamin J. Observations of C_3 In Translucent Sight Lines. *Takeshi Oka, Julie A. Thorburn, Benjamin J. McCall, Scott D. Friedman, Lewis M. Hobbs, Paule Sonnentrucker, Daniel E. Welty, & Donald G. York.* 582, 823 (2003)

Observations of Rotationally Resolved C_3 in Translucent Sight Lines. *Máté Ádámkovics, Geoffrey A. Blake, & Benjamin J. McCall.* 595, 235 (2003)

McCall, Marshall L. The Extinction and Distance of Maffei 1. *Robin L. Fingerhut, Marshall L. McCall, Michael De Robertis, Robin L. Kingsburgh, Michael Komljenovic, Henry Lee, & Ronald J. Buta.* 587, 672 (2003)

McCandliss, Stephan R. Potential Variations in the Interstellar N I Abundance. *David C. Knauth, B-G Andersson, Stephan R. McCandliss, & H. Warren Moos.* 596, L51 (2003)

McCann, Wm. J. See Tran, H. D., et al. Advanced Camera for Surveys Observations of Young Star Clusters in the Interacting Galaxy UGC 10214.

McCarthy, C. See Holland, W. S., et al. Submillimeter Observations of an Asymmetric Dust Disk around Fomalhaut.

McCarthy, Chris. Four New Planets Orbiting Metal-Enriched Stars. *C. G. Tinney, R. Paul Butler, Geoffrey W. Marcy, Hugh R. A. Jones, Alan J. Penny, Chris McCarthy, Brad D. Carter, & Jade Bond.* 587, 423 (2003)

A Planet in a Circular Orbit with a 6 Year Period. *Brad D. Carter, R. Paul Butler, C. G. Tinney, Hugh R. A. Jones, Geoffrey W. Marcy, Chris McCarthy, Debra A. Fischer, & Alan J. Penny.* 593, L43 (2003)

McCarthy, Donald. See Close, Laird M., et al. High-Resolution Images of Orbital Motion in the Trapezium Cluster: First Scientific Results from the Multiple Mirror Telescope Deformable Secondary Mirror Adaptive Optics System.

McCarthy, Ian G. On the Relationship between Cooling Flows and Bubbles. *Ian G. McCarthy, Arif Babul, Neal Katz, & Michael L. Balogh.* 587, L75 (2003)

Cluster Sunyaev-Zeldovich Effect Scaling Relations. *Ian G. McCarthy, Arif Babul, Gilbert P. Holder, & Michael L. Balogh.* 591, 515 (2003)

The Sunyaev-Zeldovich Effect Signature of Excess Entropy in Distant, Massive Clusters. *Ian G. McCarthy, Gilbert P. Holder, Arif Babul, & Michael L. Balogh.* 591, 526 (2003)

McCarthy, M. C. Rotational Spectra of the Nitrogen-Sulfur Carbon NC_nS, $n = 1$–7. *M. C. McCarthy, A. L. Cooksy, S. Mohamed, V. D. Gordon, & P. Thaddeus.* 144, 287 (2003)

The Radio Spectrum of the Phenyl Radical. *R. J. McMahon, M. C. McCarthy, C. A. Gottlieb, J. B. Dudek, J. F. Stanton, & P. Thaddeus.* 590, L61 (2003)

The Radio Spectrum of Si_3. *M. C. McCarthy & P. Thaddeus.* 592, L91 (2003)

McCarthy, Meredith N. Mechanisms for the Origin of Turbulence in Non–Star-forming Clouds: The Translucent Cloud MBM 40. *Steven N. Shore, Loris Magnani, T. N. LaRosa, & Meredith N. McCarthy.* 593, 413 (2003)

McCarthy, P. See Price, P. A., et al. GRB 010921: Strong Limits on an Underlying Supernova from the *Hubble Space Telescope*.

See Price, P. A., et al. Discovery of GRB 020405 and Its Late Red Bump.

McCarthy, Patrick J. See Chen, Hsiao-Wen, et al. The Las Campanas Infrared Survey. IV. The Photometric Redshift Survey and the Rest-Frame *R*-Band Galaxy Luminosity Function at $0.5 \leq z \leq 1.5$.

McCaughrean, Mark J. Molecular Outflows in The Young Open Cluster IC 348. *Jochen Eislöffel, Dirk Froebrich, Thomas Stanke, & Mark J. McCaughrean.* 595, 259 (2003)

McCauley, Thomas P. Neutrinos from Accreting Neutron Stars. *Luis A. Anchordoqui, Diego F. Torres, Thomas P. McCauley, Gustavo E. Romero, & Felix A. Aharonian.* 589, 481 (2003)

McClintock, J. E. Resolved Jets and Long-Period Black Hole X-Ray Novae. *M. R. Garcia, J. M. Miller, J. E. McClintock, A. R. King, & J. Orosz.* 591, 388 (2003)

McClintock, Jeffrey E. Multiwavelength Spectrum of the Black Hole XTE J1118+480 in Quiescence. *Jeffrey E. McClintock, Ramesh Narayan, Michael R. Garcia, Jerome A. Orosz, Ronald A. Remillard, & Stephen S. Murray.* 593, 435 (2003)

McClure-Griffiths, N. M. Fitting Together the H I Absorption and Emission in the Southern Galactic Plane Survey. *John M. Dickey, N. M. McClure-Griffiths, B. M. Gaensler, & A. J. Green.* 585, 801 (2003)

Loops, Drips, and Walls in the Galactic Chimney GSH 277+00+36. *N. M. McClure-Griffiths, John M. Dickey, B. M. Gaensler, & A. J. Green.* 594, 833 (2003)

A Neutral Hydrogen Self-Absorption Cloud in the Southern Galactic Plane Survey. *D. W. Kavars, J. M. Dickey, N. M. McClure-Griffiths, B. M. Gaensler, & A. J. Green.* 598, 1048 (2003)

McCollough, M. L. The 590 Day Long-Term Periodicity of the Microquasar GRS 1915+105. *A. Rau, J. Greiner, & M. L. McCollough.* 590, L37 (2003)

McCollough, Michael L. *Chandra* X-Ray Observations of the Spiral Galaxy M81. *Douglas A. Swartz, Kajal K. Ghosh, Michael L. McCollough, Thomas G. Pannuti, Allyn F. Tennant, & Kinwah Wu.* 144, 213 (2003)

McComas, D. J. Solar Wind Scaling Law. *N. A. Schwadron & D. J. McComas.* 599, 1395 (2003)

McCoustra, M. R. S. Carbon Monoxide Entrapment in Interstellar Ice Analogs. *M. P. Collings, J. W. Dever, H. J. Fraser, M. R. S. McCoustra, & D. A. Williams.* 583, 1058 (2003)

McCracken, H. See Webb, T. M., et al. The Canada–United Kingdom Deep Submillimeter Survey. V. The Submillimeter Properties of Lyman Break Galaxies.

McCrady, Nate. Kinematic Masses of Super–Star Clusters in M82 from High-Resolution Near-Infrared Spectroscopy. *Nate McCrady, Andrea M. Gilbert, & James R. Graham.* 596, 240 (2003)

A Giant Outburst at Millimeter Wavelengths in the Orion Nebula. *Geoffrey C. Bower, Richard L. Plambeck, Alberto Bolatto, Nate McCrady, James R. Graham, Imke de Pater, Michael C. Liu, & Frederick K. Baganoff.* 598, 1140 (2003)

McCray, Richard. See Michael, Eli, et al. *Hubble Space Telescope* Observations of High-Velocity Lyα and Hα Emission from Supernova Remnant 1987A: The Structure and Development of the Reverse Shock.

McCulloch, P. M. See Greenhill, L. J., et al. A Warped Accretion Disk and Wide-Angle Outflow in the Inner Parsec of the Circinus Galaxy.

The Vela Pulsar's Proper Motion and Parallax Derived from VLBI Observations. *R. Dodson, D. Legge, J. E. Reynolds, & P. M. McCulloch.* 596, 1137 (2003)

McCullough, J. See Atkins, R., et al. Observation of TeV Gamma Rays from the Crab Nebula with Milagro Using a New Background Rejection Technique.

McCullough, J. F. See Atkins, R., et al. The High-Energy Gamma-Ray Fluence and Energy Spectrum of GRB 970417A from Observations with Milagrito.

See Falcone, A., et al. Observation of GeV Solar Energetic Particles from the 1997 November 6 Event Using Milagrito.

McDonald, F. B. *Voyager 1* and *2* Observations of Magnetic Fields and Associated Cosmic-Ray Variations from 2000 through 2001: 60–87 AU. *L. F. Burlaga, N. F. Ness, F. B. McDonald, J. D. Richardson, & C. Wang.* 582, 540 (2003)

WIND Observations of Anomalous Cosmic Rays from Solar Minimum to Maximum. *D. V. Reames & F. B. McDonald.* 586, L99 (2003)

Voyager 2 Measurements in the Outer Heliosphere of the Energy Spectra of Cosmic-Ray Nuclei from Less than 100 MeV Nucleon^{-1} to More than 1.0 GeV Nucleon^{-1}. *W. R. Webber, F. B. McDonald, & A. Lukasiak.* 599, 582 (2003)

McDonald, P. Primordial Black Holes as Dark Matter: The Power Spectrum and Evaporation of Early Structures. *N. Afshordi, P. McDonald, & D. N. Spergel.* 594, L71 (2003)

McDonald, Patrick. Toward a Measurement of the Cosmological Geometry at $z \sim 2$: Predicting Lyα Forest Correlation in Three Dimensions and the Potential of Future Data Sets. *Patrick McDonald.* 585, 34 (2003)

The Lyα Forest Flux Distribution at $z \sim 5.2$ and the Evolution of the Ionizing Background: Erratum (ApJ, 549, L11 [2001]). *Patrick McDonald & Jordi Miralda-Escudé.* 595, L67 (2003) (Orig. paper in 549, L11 (2001))

A Measurement of the Temperature-Density Relation in the Intergalactic Medium Using a New Lyα Absorption Line Fitting Method: Erratum (ApJ, 562, 52 [2001]). *Patrick McDonald, Jordi Miralda-Escudé, Michael Rauch, Wallace L. W. Sargent, Tom A. Barlow, & Renyue Cen.* 598, 712 (2003) (Orig. paper in 562, 52 (2001))

McDOWELL, J. See FABBIANO, G., et al. The X-Ray–faint Emission of the Supermassive Nuclear Black Hole of IC 1459.

McDOWELL, J. C. *Chandra* Observations of Extended X-Ray Emission in Arp 220. *J. C. McDowell, D. L. Clements, S. A. Lamb, S. Shaked, N. C. Hearn, L. Colina, C. Mundell, K. Borne, A. C. Baker, & S. Arribas.* 591, 154 (2003)

McDOWELL, JONATHAN. *Chandra* Observations of the Dwarf Nova WX Hydri in Quiescence. *Rosalba Perna, Jonathan McDowell, Kristen Menou, John Raymond, & Mikhail V. Medvedev.* 598, 545 (2003)

McDOWELL, JONATHAN C. See KURASZKIEWICZ, JOANNA K., et al. The Far-Infrared Spectral Energy Distributions of X-Ray–selected Active Galaxies.

McENERY, J. See AKERLOF, C. W., et al. A Search for Correlations of TeV Gamma Rays with Ultra–High-Energy Cosmic Rays.

McENERY, J. E. See ATKINS, R., et al. The High-Energy Gamma-Ray Fluence and Energy Spectrum of GRB 970417A from Observations with Milagrito.

See FALCONE, A., et al. Observation of GeV Solar Energetic Particles from the 1997 November 6 Event Using Milagrito.

See ATKINS, R., et al. Observation of TeV Gamma Rays from the Crab Nebula with Milagro Using a New Background Rejection Technique.

McGAUGH, STACY S. A Limit on the Cosmological Mass Density and Power Spectrum from the Rotation Curves of Low Surface Brightness Galaxies. *Stacy S. McGaugh, Michael K. Barker, & W. J. G. de Blok.* 584, 566 (2003)

McGHEE, JOHN M. Off-Axis Neutrino Scattering in Gamma-Ray Burst Central Engines. *Warner A. Miller, Nathan D. George, Arkady Kheyfets, & John M. McGhee.* 583, 833 (2003)

McGLYNN, T. See TEEGARDEN, B. J., et al. Discovery of a New Nearby Star.

McGOVERN, MARK R. See BURGASSER, ADAM J., et al. The First Substellar Subdwarf? Discovery of a Metal-poor L Dwarf with Halo Kinematics.

The NIRSPEC Brown Dwarf Spectroscopic Survey. I. Low-Resolution Near-Infrared Spectra. *Ian S. McLean, Mark R. McGovern, Adam J. Burgasser, J. Davy Kirkpatrick, L. Prato, & Sungsoo S. Kim.* 596, 561 (2003)

McGOWAN, K. E. Detection of Pulsed X-Ray Emission from *XMM-Newton* Observations of PSR J0538+2817. *K. E. McGowan, J. A. Kennea, S. Zane, F. A. Córdova, M. Cropper, C. Ho, T. Sasseen, & W. T. Vestrand.* 591, 380 (2003)

McHARDY, I. See MARKOWITZ, A., et al. X-Ray Fluctuation Power Spectral Densities of Seyfert 1 Galaxies.

See BÖTTCHER, M., et al. Coordinated Multiwavelength Observations of BL Lacertae in 2000.

McHARDY, I. M. See MASON, K. O., et al. The X-Ray Spectrum of the Seyfert 1 Galaxy Markarian 766: Dusty Warm Absorber or Relativistic Emission Lines?

McHARDY, IAN M. Correlated Long-Term Optical and X-Ray Variations in NGC 5548. *Philip Uttley, Rick Edelson, Ian M. McHardy, Bradley M. Peterson, & Alex Markowitz.* 584, L53 (2003)

McINTOSH, DANIEL H. A First Estimate of the Baryonic Mass Function of Galaxies. *Eric F. Bell, Daniel H. McIntosh, Neal Katz, & Martin D. Weinberg.* 585, L117 (2003)

The Clustering Dipole of the Local Universe from the Two Micron All Sky Survey. *Ariyeh H. Maller, Daniel H. McIntosh, Neal Katz, & Martin D. Weinberg.* 598, L1 (2003)

The Optical and Near-Infrared Properties of Galaxies. I. Luminosity and Stellar Mass Functions. *Eric F. Bell, Daniel H. McIntosh, Neal Katz, & Martin D. Weinberg.* 149, 289 (2003)

McINTOSH, S. W. See BOGDAN, T. J., et al. Waves in the Magnetized Solar Atmosphere. II. Waves from Localized Sources in Magnetic Flux Concentrations.

McKAY, T. A. See SMITH, D. A., et al. ROTSE-III Observations of the Early Afterglow from GRB 030329.

See PRADA, FRANCISCO, et al. Observing the Dark Matter Density Profile of Isolated Galaxies.

McKAY, TIMOTHY A. See BAHCALL, NETA A., et al. The Cluster Mass Function from Early Sloan Digital Sky Survey Data: Cosmological Implications.

See BAHCALL, NETA A., et al. A Merged Catalog of Clusters of Galaxies from Early Sloan Digital Sky Survey Data.

McKEE, CHRISTOPHER F. Time Dependence of the Ultraviolet Radiation Field in the Local Interstellar Medium. *Antonio Parravano, David J. Hollenbach, & Christopher F. McKee.* 584, 797 (2003)

The Formation of Massive Stars from Turbulent Cores. *Christopher F. McKee & Jonathan C. Tan.* 585, 850 (2003)

Neutral Atomic Phases of the Interstellar Medium in the Galaxy. *Mark G. Wolfire, Christopher F. McKee, David Hollenbach, & A. G. G. M. Tielens.* 587, 278 (2003)

McKERNAN, B. The Kinematics and Physical Conditions of the Ionized Gas in Markarian 509. II. STIS Echelle Observations. *S. B. Kraemer, D. M. Crenshaw, T. Yaqoob, B. McKernan, J. R. Gabel, I. M. George, T. J. Turner, & J. P. Dunn.* 582, 125 (2003)

See HALL, T. A., et al. Search for TeV Emissions from Pulsars in Binary Systems.

McKERNAN, BARRY. The Kinematics and Physical Conditions of the Ionized Gas in Markarian 509. I. *Chandra* High Energy Grating Spectroscopy. *Tahir Yaqoob, Barry McKernan, Steven B. Kraemer, D. Michael Crenshaw, Jack R. Gabel, Ian M. George, & T. Jane Turner.* 582, 105 (2003)

The Kinematics and Physical Conditions of the Ionized Gas in NGC 4593 from *Chandra* High-Energy Grating Spectroscopy. *Barry McKernan, Tahir Yaqoob, Ian M. George, & T. J. Turner.* 593, 142 (2003)

A Warm/Hot Intergalactic Medium toward 3C 120? *Barry McKernan, Tahir Yaqoob, Richard Mushotzky, Ian M. George, & T. Jane Turner.* 598, L83 (2003)

McKIBBEN, R. B. Perpendicular Transport of Solar Energetic Particles in Heliospheric Magnetic Fields. *Ming Zhang, J. R. Jokipii, & R. B. McKibben.* 595, 493 (2003)

McKINNEY, JONATHAN C. HARM: A Numerical Scheme for General Relativistic Magnetohydrodynamics. *Charles F. Gammie, Jonathan C. McKinney, & Gábor Tóth.* 589, 444 (2003)

McKINNON, MARK M. The Transition between Nonorthogonal Polarization Modes in PSR B2016+28 at 1404 MHz. *Mark M. McKinnon.* 590, 1026 (2003)

Three-dimensional Statistics of Radio Polarimetry. *Mark M. McKinnon.* 148, 519 (2003)

McLAUGHLIN, B. M. See AGUILAR, A., et al. Absolute Photoionization Cross Section Measurements of O II Ions from 29.7 to 46.2 eV.

McLAUGHLIN, DEAN E. Dynamics of the Globular Cluster System Associated with M49 (NGC 4472): Cluster Orbital Properties and the Distribution of Dark Matter. *Patrick Côté, Dean E. McLaughlin, Judith G. Cohen, & John P. Blakeslee.* 591, 850 (2003)

McLAUGHLIN, M. A. PSR J1847−0130: A Radio Pulsar with Magnetar Spin Characteristics. *M. A. McLaughlin, I. H. Stairs, V. M. Kaspi, D. R. Lorimer, M. Kramer, A. G. Lyne, R. N. Manchester, F. Camilo, G. Hobbs, A. Possenti, N. D'Amico, & A. J. Faulkner.* 591, L135 (2003)

Searches for Giant Pulses from Extragalactic Pulsars. *M. A. McLaughlin & J. M. Cordes.* 596, 982 (2003)

Searches for Fast Radio Transients. *J. M. Cordes & M. A. McLaughlin.* 596, 1142 (2003)

McLEAN, I. See GHEZ, A. M., et al. The First Measurement of Spectral Lines in a Short-Period Star Bound to the Galaxy's Central Black Hole: A Paradox of Youth.

McLEAN, I. S. The Smallest Mass Ratio Young Star Spectroscopic Binaries: Erratum (ApJ, 569, 863 [2002]). *L. Prato, M. Simon, T. Mazeh, I. S. McLean, D. Norman, & S. Zucker.* 598, 1409 (2003)

McLEAN, IAN S. See BURGASSER, ADAM J., et al. The First Substellar Subdwarf? Discovery of a Metal-poor L Dwarf with Halo Kinematics.

The NIRSPEC Brown Dwarf Spectroscopic Survey. I. Low-Resolution Near-Infrared Spectra. *Ian S. McLean, Mark R. McGovern, Adam J. Burgasser, J. Davy Kirkpatrick, L. Prato, & Sungsoo S. Kim.* 596, 561 (2003)

Using Narrowband Photometry to Detect Young Brown Dwarfs in IC 348. *A. K. Mainzer & Ian S. McLean.* 597, 555 (2003)

See FIGER, DONALD F., et al. High-Precision Stellar Radial Velocities in the Galactic Center.

McLEISH, T. C. B. A Viscoelastic Theory of Turbulent Fluid Permeated with Fibril Magnetic Fields. *D. W. Longcope, T. C. B. McLeish, & G. H. Fisher.* 599, 661 (2003)

McLEOD, B. See BERSIER, D., et al. The Strongly Polarized Afterglow of GRB 020405.

McLeod, B. A. See Rusin, D., et al. The Evolution of a Mass-selected Sample of Early-Type Field Galaxies.

McLeod, Kim K. See Kuraszkiewicz, Joanna K., et al. The Far-Infrared Spectral Energy Distributions of X-Ray–selected Active Galaxies.

McLure, Ross J. A $3 \times 10^9\ M_\odot$ Black Hole in the Quasar SDSS J1148+5251 at $z = 6.41$. *Chris J. Willott, Ross J. McLure, & Matt J. Jarvis.* 587, L15 (2003)

McMahon, R. J. The Radio Spectrum of the Phenyl Radical. *R. J. McMahon, M. C. McCarthy, C. A. Gottlieb, J. B. Dudek, J. F. Stanton, & P. Thaddeus.* 590, L61 (2003)

McMillan, Russet. Rapid Brightness Fluctuations in Q0957+561A,B: Microlensing or Seeing? *Wesley N. Colley, Irwin I. Shapiro, Jennifer Pegg, Edwin L. Turner, Tomislav Kundić, Karen Loomis, N. C. Hastings, & Russet McMillan.* 588, 711 (2003)

McMillan, Stephen L. W. The Origin of IRS 16: Dynamically Driven Inspiral of a Dense Star Cluster to the Galactic Center? *Simon F. Portegies Zwart, Stephen L. W. McMillan, & Ortwin Gerhard.* 593, 352 (2003)

The Fate of Star Clusters near the Galactic Center. I. Analytic Considerations. *Stephen L. W. McMillan & Simon F. Portegies Zwart.* 596, 314 (2003)

McMillan, Steve. On the Central Structure of M15. *Holger Baumgardt, Piet Hut, Junichiro Makino, Steve McMillan, & Simon Portegies Zwart.* 582, L21 (2003)

A Dynamical Model for the Globular Cluster G1. *Holger Baumgardt, Junichiro Makino, Piet Hut, Steve McMillan, & Simon Portegies Zwart.* 589, L25 (2003)

See Pooley, David, et al. Dynamical Formation of Close Binary Systems in Globular Clusters.

McMullin, J. Expansion of the R4 H_2O Maser Arc near Cepheus A HW2. *J. F. Gallimore, R. J. Cool, M. D. Thornley, & J. McMullin.* 586, 306 (2003)

McMurray, A. See Bogdan, T. J., et al. Waves in the Magnetized Solar Atmosphere. II. Waves from Localized Sources in Magnetic Flux Concentrations.

McNamara, B. J. Does M15 Possess an Intermediate-Mass Black Hole in Its Core? *B. J. McNamara, T. E. Harrison, & J. Anderson.* 595, 187 (2003)

McNamara, B. R. See Vikhlinin, A., et al. Cosmological Constraints from the Evolution of the Cluster Baryon Mass Function at $z \sim 0.5$.

See Mullis, C. R., et al. The 160 Square Degree *ROSAT* Survey: The Revised Catalog of 201 Clusters with Spectroscopic Redshifts.

McNamara, Brian R. *Chandra* Observations of the Cooling Flow Cluster Abell 2052. *Elizabeth L. Blanton, Craig L. Sarazin, & Brian R. McNamara.* 585, 227 (2003)

McParland, C. P. See Ahrens, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

McSwain, M. V. See Gies, D. R., et al. Wind Accretion and State Transitions in Cygnus X-1.

The Massive Triple Star System HD 16429 A. *M. V. McSwain.* 595, 1124 (2003)

McWilliam, Andrew. Constraints on the Origin of Manganese from the Composition of the Sagittarius Dwarf Spheroidal Galaxy and the Galactic Bulge. *Andrew McWilliam, R. Michael Rich, & Tammy A. Smecker-Hane.* 592, L21 (2003)

Constraints on the Origin of Manganese from the Composition of the Sagittarius Dwarf Galaxy and the Galactic Bulge: Erratum (ApJ, 592, L21 [2003]). *Andrew McWilliam, R. Michael Rich, & Tammy A. Smecker-Hane.* 593, L145 (2003) (Orig. paper in 592, L21 (2003))

Meade, M. See Wakker, B. P., et al. The *Far Ultraviolet Spectroscopic Explorer* Survey of O VI Absorption in and near the Galaxy.

See Savage, B. D., et al. Distribution and Kinematics of O VI in the Galactic Halo.

See Sembach, K. R., et al. Highly Ionized High-Velocity Gas in the Vicinity of the Galaxy.

Meade, Marilyn R. Spectroscopic and Spectropolarimetric Observations of V838 Monocerotis. *John P. Wisniewski, Nancy D. Morrison, Karen S. Bjorkman, Anatoly S. Miroshnichenko, Amanda C. Gault, Jennifer L. Hoffman, Marilyn R. Meade, & Jason M. Nett.* 588, 486 (2003)

Meakin, C. A. *Hubble Space Telescope*/NICMOS Near-Infrared Imaging of the Proto–Planetary Nebula OH 231.8+4.2. *C. A. Meakin, J. H. Bieging, W. B. Latter, J. L. Hora, & A. G. G. M. Tielens.* 585, 482 (2003)

Medejski, Greg M. Implications of Variability Patterns Observed in TeV Blazars on the Structure of the Inner Jet. *Chiharu Tanihata, Tadayuki Takahashi, Jun Kataoka, & Greg M. Medejski.* 584, 153 (2003)

Mediavilla, E. The Redshift Distribution of Flat-Spectrum Radio Sources. *J. A. Muñoz, E. E. Falco, C. S. Kochanek, J. Lehár, & E. Mediavilla.* 594, 684 (2003)

Mediavilla, E. G. The Line Emission Region in III Zw 2: Kinematics and Variability. *L. Č. Popović, E. G. Mediavilla, E. Bon, N. Stanić, & A. Kubičela.* 599, 185 (2003)

Mediavilla, Evenvio. See Colley, Wesley N., et al. Around-the-Clock Observations of the Q9057+561A,B Gravitationally Lensed Quasar. II. Results for the Second Observing Season.

Medvedev, Ivan. The Millimeter- and Submillimeter-Wave Spectrum of the Trans-Trans Conformer of Diethyl Ether ($C_2H_5OC_2H_5$). *Ivan Medvedev, Manfred Winnewisser, Frank C. De Lucia, Eric Herbst, Ewa Białkowski–Jaworska, Oleksandr Desyatnyk, Lech Pszczołkowski, Zbigniew Kisiel, Enyi Yi, Lai Peng Leong, & Ryan P. A. Bettens.* 148, 593 (2003)

Medvedev, M. V. Interpenetrating Plasma Shells: Near-Equipartition Magnetic Field Generation and Nonthermal Particle Acceleration. *L. O. Silva, R. A. Fonseca, J. W. Tonge, J. M. Dawson, W. B. Mori, & M. V. Medvedev.* 596, L121 (2003)

Medvedev, Mikhail V. *Chandra* Observations of the Dwarf Nova WX Hydri in Quiescence. *Rosalba Perna, Jonathan McDowell, Kristen Menou, John Raymond, & Mikhail V. Medvedev.* 598, 545 (2003)

Meegan, Charles A. How Sample Completeness Affects Gamma-Ray Burst Classification. *Jon Hakkila, Timothy W. Giblin, Richard J. Roiger, David J. Haglin, William S. Paciesas, & Charles A. Meegan.* 582, 320 (2003)

See Mitrofanov, Igor G., et al. Comparison of Redshift-known Gamma-Ray Bursts with the Main Groups of Bright BATSE Events.

Megan Urry, C. Near-Infrared Observations of BL Lacertae Host Galaxies. *C. C. Cheung, C. Megan Urry, Riccardo Scarpa, & Mauro Giavalisco.* 599, 155 (2003)

Megeath, S. T. High-Resolution Continuum Imaging at 1.3 and 0.7 Centimeters of the W3 IRS 5 Region. *T. L. Wilson, D. A. Boboltz, R. A. Gaume, & S. T. Megeath.* 597, 434 (2003)

See Matheson, T., et al. Photometry and Spectroscopy of GRB 030329 and Its Associated Supernova 2003dh: The First Two Months.

Meier, David L. The Magnetorotational Instability in Core-Collapse Supernova Explosions. *Shizuka Akiyama, J. Craig Wheeler, David L. Meier, & Itamar Lichtenstadt.* 584, 954 (2003)

Constrained Transport Algorithms for Numerical Relativity. I. Development of a Finite-Difference Scheme. *David L. Meier.* 595, 980 (2003)

Meier, David S. Molecular Gas and the Nuclear Star Cluster in IC 342: Sufficient Inflow for Recurring Star Formation Events? *Eva Schinnerer, Torsten Böker, & David S. Meier.* 591, L115 (2003)

Meijer, Gerard. Laboratory Infrared Spectroscopy of Cationic Polycyclic Aromatic Hydrocarbon Molecules. *Jos Oomens, A. G. G. M. Tielens, Boris G. Sartakov, Gert von Helden, & Gerard Meijer.* 591, 968 (2003)

Meiksin, Avery. See Glazebrook, Karl, et al. The Sloan Digital Sky Survey: The Cosmic Spectrum and Star Formation History.

See Szalay, Alexander S., et al. Karhunen-Loève Estimation of the Power Spectrum Parameters from the Angular Distribution of Galaxies in Early Sloan Digital Sky Survey Data.

Meinel, R. Relativistic Dyson Rings and Their Black Hole Limit. *M. Ansorg, A. Kleinwächter, & R. Meinel.* 582, L87 (2003)

Meintjes, P. J. See Bersier, D., et al. The Unusual Optical Afterglow of the Gamma-Ray Burst GRB 021004: Color Changes and Short-Timescale Variability.

Meištas, E. G. See Mukadem, Anjum S., et al. Constraining the Evolution of ZZ Ceti.

Meixner, M. Discovery of Multiple Molecular Shells in the Outer Envelope of IRC +10216. *D. Fong, M. Meixner, & R. Y. Shah.* 582, L39 (2003)

Meixner, Margaret. 2-Dust: A Dust Radiative Transfer Code for an Axisymmetric System. *Toshiya Ueta & Margaret Meixner.* 586, 1338 (2003)

The Dust Ring of Luminous Blue Variable Candidate HD 168625: Infrared Observations and Model Calculations. *Timothy B. O'Hara, Margaret Meixner, Angela K. Speck, Toshiya Ueta, & Matthew Bobrowsky.* 598, 1255 (2003)

Mejía, Annie C. The Thermal Regulation of Gravitational Instabilities in Protoplanetary Disks. *Brian K. Pickett, Annie C. Mejía, Richard H.*

Durisen, Patrick M. Cassen, Donald K. Berry, & Robert P. Link. 590, 1060 (2003)

MELCHIORRI, A. See BATTISTELLI, E. S., et al. Triple Experiment Spectrum of the Sunyaev-Zel'dovich Effect in the Coma Cluster: H_0.

See RUHL, J. E., et al. Improved Measurement of the Angular Power Spectrum of Temperature Anisotropy in the Cosmic Microwave Background from Two New Analyses of BOOMERANG Observations.

MELCHIORRI, ALESSANDRO. Cosmological Contraints from a Combined Analysis of the Cluster Mass Function and Microwave Background Anisotropies. *Alessandro Melchiorri, Paul Bode, Neta A. Bahcall, & Joseph Silk.* 586, L1 (2003)

MELCHIORRI, F. See BATTISTELLI, E. S., et al. Triple Experiment Spectrum of the Sunyaev-Zel'dovich Effect in the Coma Cluster: H_0.

MELÉNDEZ, JORGE. See BARBUY, BEATRIZ, et al. Oxygen Abundance in the Template Halo Giant HD 122563.

MELIA, FULVIO. Diffuse X-Rays from a Distributed Component of Dark Surrounding Sagittarius A*. *Martin Pessah & Fulvio Melia.* 585, L29 (2003)

Shadowing of the Nascent Jet in NGC 4261 by a Line-Emitting Supersonic Accretion Disk. *Siming Liu, Michael J. Fromerth, & Fulvio Melia.* 596, 879 (2003)

A Kinsip between the EGRET Supernova Remnants and Sagittarius A East. *Marco Fatuzzo & Fulvio Melia.* 596, 1035 (2003)

MELLIER, YANNICK. Detection of Dark Matter Skewness in the VIRMOS-DESCART Survey: Implications for Ω_0. *Ue-Li Pen, Tongjie Zhang, Ludovic van Waerbeke, Yannick Mellier, Pengjie Zhang, & John Dubinski.* 592, 664 (2003)

MELLON, RICHARD R. The Spatial, Ionization, and Kinematic Conditions of the $z = 1.39$ Damped Lyα Absorber in Q0957+561 A,B. *Christopher W. Churchill, Richard R. Mellon, Jane C. Charlton, & Steven S. Vogt.* 593, 203 (2003)

MELNICK, GARY J. A Survey of 557 GHz Water Vapor Emission in the NGC 1333 Molecular Cloud. *Edwin A. Bergin, Michael J. Kaufman, Gary J. Melnick, Ronald L. Snell, & John E. Howe.* 582, 830 (2003)

Detections of OH toward the Extreme Carbon Star IRC +10216. *K. E. Saavik Ford, David A. Neufeld, Paul F. Goldsmith, & Gary J. Melnick.* 589, 430 (2003)

Submillimeter Wave Astronomy Satellite Mapping Observations of Water Vapor around Sagittarius B2. *David A. Neufeld, Edwin A. Bergin, Gary J. Melnick, & Paul F. Goldsmith.* 590, 882 (2003)

MELNIKOV, V. F. Optically Thick Gyrosynchrotron Emission from Anisotropic Electron Distributions. *G. D. Fleishman & V. F. Melnikov.* 584, 1071 (2003)

Gyrosynchrotron Emission from Anisotropic Electron Distributions. *G. D. Fleishman & V. F. Melnikov.* 587, 823 (2003)

Optically Thick Gyrosynchrotron Emission from Anisotropic Electron Distributions: Erratum (ApJ, 584, 1071 [2003]). *G. D. Fleishman & V. F. Melnikov.* 593, 597 (2003) (Orig. paper in 584, 1071 (2003))

Gyrosynchrotron Emission from Anisotropic Electron Distributions: Erratum (ApJ, 587, 823 [2003]). *G. D. Fleishman & V. F. Melnikov.* 593, 598 (2003) (Orig. paper in 587, 823 (2003))

MELOTT, ADRIAN. Universal Behavior of Phase Correlations in Nonlinear Gravitational Clustering. *Peter Watts, Peter Coles, & Adrian Melott.* 589, L61 (2003)

MELOTT, ADRIAN L. Eccentricity Evolution in Simulated Galaxy Clusters. *Stephan N. Floor, Adrian L. Melott, Christopher J. Miller, & Greg L. Bryan.* 591, 741 (2003)

Optimal Moments for the Analysis of Peculiar Velocity Surveys. II. Testing. *Hume A. Feldman, Richard Watkins, Adrian L. Melott, & Scott W. Chambers.* 599, 820 (2003)

MENANTEAU, F. Quasars Clustering at $z \approx 3$ on Scales $\lesssim 10\ h^{-1}$ Mpc. *L. Infante, J. Varela, M. Moles, G. Hertling, A. García, & F. Menanteau.* 588, 90 (2003)

See BOUWENS, R. J., et al. Star Formation at $z \sim 6$: i-Dropouts in the Advanced Camera for Surveys Guaranteed Time Observation Fields.

See BLAKESLEE, JOHN P., et al. Advanced Camera for Surveys Photometry of the Cluster RDCS 1252.9−2927: The Color-Magnitude Relation at $z = 1.24$.

See MEURER, GERHARDT R., et al. The Discovery of Globular Clusters in the Protospiral Galaxy NGC 2915: Implications for Hierarchical Galaxy Evolution.

MENANTEAU, FELIPE. See BLAKESLEE, JOHN P., et al. Discovery of Two Distant Type Ia Supernovae in the Hubble Deep Field–North with the Advanced Camera for Surveys.

MÉNARD, FRANÇOIS. *Hubble Space Telescope* WFPC2 Imaging of the Disk and Jet of HV Tauri C. *Karl R. Stapelfeldt, François Ménard, Alan M. Watson, John E. Krist, Catherine Dougados, Deborah L. Padgett, & Wolfgang Brandner.* 589, 410 (2003)

MENCI, N. A European Southern Obseratory Very Large Telescope Survey of Near-Infrared ($Z \leq 25$) Selected Galaxies at Redshifts $4.5 < z < 6$: Constraining the Cosmic Star Formation Rate near the Reionization Epoch. *A. Fontana, F. Poli, N. Menci, M. Nonino, E. Giallongo, S. Cristiani, & S. D'Odorico.* 587, 544 (2003)

Quasar Evolution Driven by Galaxy Encounters in Hierarchical Structures. *N. Menci, A. Cavaliere, A. Fontana, E. Giallongo, F. Poli, & V. Vittorini.* 587, L63 (2003)

See POLI, F., et al. The Evolution of the Galaxy Luminosity Function in the Rest-Frame Blue Band up to $z = 3.5$.

See FONTANA, A., et al. The Assembly of Massive Galaxies from Near-Infrared Observations of the Hubble Deep Field–South.

MENDEZ, J. See KNOP, R. A., et al. New Constraints on Ω_M, Ω_Λ, and w from an Independent Set of 11 High-Redshift Supernovae Observed with the *Hubble Space Telescope*.

MÉNDEZ, M. See MILLER J. M., et al. *XMM-Newton* Spectroscopy of the Accretion-driven Millisecond X-Ray Pulsar XTE J1751−305 in Outburst.

MENDEZ, MARIANO. The Atoll Source States of 4U 1608−52. *Steve van Straaten, Michiel van der Klis, & Mariano Méndez.* 596, 1155 (2003)

Chandra Observations of the Faintest Low-Mass X-Ray Binaries. *Colleen A. Wilson, Sandeep K. Patel, Chryssa Kouveliotou, Peter G. Jonker, Michiel van der Klis, Walter H. G. Lewin, Tomaso Belloni, & Mariano Méndez.* 596, 1220 (2003)

MÉNDEZ, RENÉ A. See DINESCU, DANA I., et al. Absolute Proper Motions to $B \sim 22.5$. V. Detection of Sagittarius Dwarf Spheroidal Debris in the Direction of the Galactic Anticenter: Erratum (ApJ, 575, L67 [2002]).

MENDONÇA, J. T. Cyclotron Maser Radiation from Astrophysical Shocks. *R. Bingham, B. J. Kellett, R. A. Cairns, J. Tonge, & J. T. Mendonça.* 595, 279 (2003)

MENG, X. R. See AMENOMORI, M., et al. Multi-TeV Gamma-Ray Flares from Markarian 421 in 2000 and 2001 Observed with the Tibet Air Shower Array.

MENGONI, A. See REIFARTH, R., et al. Stellar Neutron Capture on Promethium: Implications for the s-Process Neutron Density.

See SONNABEND, K., et al. The s-Process Branching at ^{185}W.

MENNA, M. T. Coupling between Periodic and Aperiodic Variability in SAX J1808.4−3658. *M. T. Menna, L. Burderi, L. Stella, N. Robba, & M. van der Klis.* 589, 503 (2003)

MENNELLA, V. The Effects of Ion Irradiation on the Evolution of the Carrier of the 3.4 Micron Interstellar Absoprtion Band. *V. Mennella, G. A. Baratta, A. Esposito, G. Ferini, & Y. J. Pendleton.* 587, 727 (2003)

MENNESSON, B. See COLAVITA, M., et al. Observations of DG Tauri with the Keck Interferometer.

See SWAIN, MARK, et al. Interferometer Observations of Subparsec-Scale Infrared Emission in the Nucleus of NGC 4151.

MENOU, KRISTEN. Dynamic Habitability of Known Extrasolar Planetary Systems. *Kristen Menou & Serge Tabachnik.* 583, 473 (2003)

"Weather" Variability of Close-in Extrasolar Giant Planets. *Kristen Menou, James Y-K. Cho, Sara Seager, & Bradley M. S. Hansen.* 587, L113 (2003)

The Changing Face of the Extrasolar Giant Planet HD 209458b. *Kristen Menou, James Y-K. Cho, Bradley M. S. Hansen, & Sara Seager.* 587, L117 (2003)

Black Hole Accretion Disks On The Edge. *Kristen Menou.* 596, 414 (2003)

Chandra Observations of the Dwarf Nova WX Hydri in Quiescence. *Rosalba Perna, Jonathan McDowell, Kristen Menou, John Raymond, & Mikhail V. Medvedev.* 598, 545 (2003)

MENTEN, K. Massive Quiescent Cores in Orion. I. Temperature Structure. *D. Li, P. F. Goldsmith, & K. Menten.* 587, 262 (2003)

MENTEN, K. M. A High Spectral Resolution VLBI Study of the 12 GHz Methanol Masers in W3(OH): Their Submilliarcsecond Structure and Clues on Saturation. *L. Moscadelli, K. M. Menten, C. M. Walmsley, & M. J. Reid.* 583, 776 (2003)

Detection of HCN Direct l-Type Transitions Probing Hot Molecular Gas in the Proto–Planetary Nebula CRL 618. *S. Thorwirth, F. Wyrowski, P. Schilke, K. M. Menten, S. Brünken, H. S. P. Müller, & G. Winnewisser.* 586, 338 (2003)

Physical Conditions in the Proto–Planetary Nebula CRL 618 Derived from Observations of Vibrationally Excited HC_3N. *F. Wyrowski, P. Schilke, S. Thorwirth, K. M. Menten, & G. Winnewisser.* 586, 344 (2003)

The Position of Sagittarius A*. II. Accurate Positions and Proper Motions of Stellar SiO Masers near the Galactic Center. *M. J. Reid, K. M. Menten, R. Genzel, T. Ott, R. Schödel, & A. Eckart.* 587, 208 (2003)

The Flaring H_2O Megamaser and Conpact Radio Source in Markarian 348. *A. B. Peck, C. Henkel, J. S. Ulvestad, A. Brunthaler, H. Falcke, M. Elitzur, K. M. Menten, & J. F. Gallimore.* 590, 149 (2003)

MENTEN, KARL M. Detection of a Second, Strong Submillimeter HCN Laser Line toward Carbon Stars. *Peter Schilke & Karl M. Menten.* 583, 446 (2003)

A Class of Interstellar OH Masers Associated with Protostellar Outflows. *Alice L. Argon, Mark J. Reid, & Karl M. Menten.* 593, 925 (2003)

Interstellar Hydroxyl Masers in the Galaxy. II. Zeeman Pairs and the Galactic Magnetic Field. *Vincent L. Fish, Mark J. Reid, Alice L. Argon, & Karl M. Menten.* 596, 328 (2003)

MENZIES, J. See FIELDS, DALE L., et al. High-Precision Limb-Darkening Measurement of a K3 Giant Using Microlensing.

MEREGHETTI, S. See ISRAEL, G. L., et al. The Infrared Counterpart to the Anomalous X-Ray Pulsar 1RXS J170849−400910.

Integral and *XMM-Newton* Observations of the Weak Gamma-Ray Burst GRB 030227. *S. Mereghetti, D. Götz, A. Tiengo, V. Beckmann, J. Borkowski, T.J.-L. Courvoisier, A. von Kienlin, V. Schoenfelder, J. P. Roques, L. Bouchet, P. Ubertini, A. Castro-Tirado, F. Lebrun, J. Paul, N. Lund, J. M. Mas-Hesse, W. Hermsen, P. R. den Hartog, & C. Winkler.* 590, L73 (2003)

See WOODS, P. M., et al. The 2001 April Burst Activation of SGR 1900+14: Pulse Properties and Torque.

See FEROCI, M., et al. The 2001 April Burst Activation of SGR 1900+14: X-Ray Afterglow Emission.

See ISRAEL, G. L., et al. Unveiling the Nature of the 321 Second Modulation in RX J0806.3+1527: Near-Simultaneous *Chandra* and Very Large Telescope Observations.

MEREGHETTI, SANDRO. Evidence of a Cyclotron Feature in the Spectrum of the Anomalous X-Ray Pulsar 1RXS J170849−400910. *Nanda Rea, Gian Luca Israel, Luigi Stella, Tim Oosterbroek, Sandro Mereghetti, Lorella Angelini, Sergio Campana, & Stefano Covino.* 586, L65 (2003)

MERLUZZI, P. Age, Metallicity, and Star Formation History of Cluster Galaxies at $z \sim 0.3$. *P. Merluzzi, F. La Barbera, M. Massarotti, G. Busarello, & M. Capaccioli.* 589, 147 (2003)

On the Invariant Distribution of Galaxies in the r_e-$\langle\mu\rangle_e$ Plane out to $z = 0.64$. *F. La Barbera, G. Busarello, P. Merluzzi, M. Massarotti, & M. Capaccioli.* 595, 127 (2003)

MERRALL, THOMAS E. C. Relaxation of a Collisionless System and the Transition to a New Equilibrium Velocity Distribution. *Thomas E. C. Merrall & Richard N. Henriksen.* 595, 43 (2003)

MERRIFIELD, M. R. See MARCONI, A., et al. Is There Really a Black Hole at the Center of NGC 4041? Constraints from Gas Kinematics.

MERRITT, DAVID. Long-Term Evolution of Massive Black Hole Binaries. *Miloš Milosavljević & David Merritt.* 596, 860 (2003)

MÉSZÁROS, P. Collapsar Uncorking and Jet Eruption in Gamma-Ray Bursts. *E. Waxman & P. Mészáros.* 584, 390 (2003)

See SCHAEFER, BRADLEY E., et al. GRB 021004: A Massive Progenitor Star Surrounded by Shells.

Gamma-Ray Bursts as X-Ray Depth Gauges of the Universe. *P. Mészáros & M. J. Rees.* 591, L91 (2003)

Iron K Lines from Gamma-Ray Bursts. *T. R. Kallman, P. Mészáros, & M. J. Rees.* 593, 946 (2003)

High-Energy Neutrinos from Magnetars. *Bing Zhang, Z. G. Dai, P. Mészáros, E. Waxman, & A. K. Harding.* 595, 346 (2003)

MÉSZÁROS, PETER. Polarized Gravitational Waves from Gamma-Ray Bursts. *Shiho Kobayashi & Peter Mészáros.* 585, L89 (2003)

Neutrino-driven Explosions in Gamma-Ray Bursts and Hypernovae. *Chris L. Fryer & Peter Mészáros.* 588, L25 (2003)

Gravitational Radiation from Gamma-Ray Burst Progenitors. *Shiho Kobayashi & Peter Mészáros.* 589, 861 (2003)

Gamma-Ray Burst Early Optical Afterglows: Implications for the Initial Lorentz Factor and the Central Engine. *Bing Zhang, Shiho Kobayashi, & Peter Mészáros.* 595, 950 (2003)

METCALF, THOMAS R. *TRACE* and *Yohkoh* Observations of a White-Light Flare. *Thomas R. Metcalf, David Alexander, Hugh S. Hudson, & Dana W. Longcope.* 595, 483 (2003)

The Relationship Between X-Ray Radiance and Magnetic Flux. *Alexei A. Pevtsov, George H. Fisher, Loren W. Acton, Dana W. Longcope, Christopher M. Johns-Krull, Charles C. Kankelborg, & Thomas R. Metcalf.* 598, 1387 (2003)

METCALFE, T. S. See MUKADEM, ANJUM S., et al. Constraining the Evolution of ZZ Ceti.

METCALFE, TRAVIS S. White Dwarf Asteroseismology and the $^{12}C(\alpha, \gamma)^{16}O$ Rate. *Travis S. Metcalfe.* 587, L43 (2003)

METCHEV, STANIMIR A. Adaptive Optics Observations of Vega: Eight Detected Sources and Upper Limits to Planetary-Mass Companions. *Stanimir A. Metchev, Lynne A. Hillenbrand, & Russel J. White.* 582, 1102 (2003)

MEURER, G. R. See TRAN, H. D., et al. Advanced Camera for Surveys Observations of Young Star Clusters in the Interacting Galaxy UGC 10214.

See BOUWENS, R. J., et al. Star Formation at $z \sim 6$: i-Dropouts in the Advanced Camera for Surveys Guaranteed Time Observation Fields.

See BLAKESLEE, JOHN P., et al. Advanced Camera for Surveys Photometry of the Cluster RDCS 1252.9−2927: The Color-Magnitude Relation at $z = 1.24$.

MEURER, GERHARDT R. See BLAKESLEE, JOHN P., et al. Discovery of Two Distant Type Ia Supernovae in the Hubble Deep Field–North with the Advanced Camera for Surveys.

The Discovery of Globular Clusters in the Protospiral Galaxy NGC 2915: Implications for Hierarchical Galaxy Evolution. *Gerhardt R. Meurer, J. P. Blakeslee, M. Sirianni, H. C. Ford, G. D. Illingworth, N. Benítez, M. Clampin, F. Menanteau, H. D. Tran, R. A. Kimble, G. F. Hartig, D. R. Ardila, F. Bartko, R. J. Bouwens, T. J. Broadhurst, R. A. Brown, C. J. Burrows, E. S. Cheng, N. J. G. Cross, P. D. Feldman, D. A. Golimowski, C. Gronwall, L. Infante, J. E. Krist, M. P. Lesser, A. R. Martel, G. K. Miley, M. Postman, P. Rosati, W. B. Sparks, Z. I. Tsvetanov, R. L. White, & W. Zheng.* 599, L83 (2003)

MEWALDT, R. A. See SLOCUM, P. L., et al. Elemental Fractionation in Small Solar Energetic Particle Events.

MEWE, R. X-Ray–Extreme Ultraviolet Simultaneous Observations of NGC 5548: Fast Extreme Ultraviolet Dip without X-Ray Variation. *Y. Haba, H. Kunieda, K. Misaki, Y. Terashima, J. S. Kaastra, R. Mewe, A. C. Fabian, & K. Iwasawa.* 599, 949 (2003)

MEYER, DAVID M. Origins of the Highly Ionized Gas along the Line of Sight toward HD 116852. *Andrew J. Fox, Blair D. Savage, Kenneth R. Sembach, Dirk Fabian, Philipp Richter, David M. Meyer, James Lauroesch, & J. Christopher Howk.* 582, 793 (2003)

Variable Na I Absorption toward ρ Leonis: Biased Neutral Formation in the Diffuse Interstellar Medium? *J. T. Lauroesch & David M. Meyer.* 591, L123 (2003)

On the Origin of the High-Ionization Intermediate-Velocity Gas toward HD 14434. *David C. Knauth, J. Christopher Howk, Kenneth R. Sembach, James T. Lauroesch, & David M. Meyer.* 592, 964 (2003)

The Homogeneity of Interstellar Krypton in the Galactic Disk. *Stefan I. B. Cartledge, David M. Meyer, & J. T. Lauroesch.* 597, 408 (2003)

MEYER, M. R. Gravity Indicators in the Near-Infrared Spectra of Brown Dwarfs. *N. I. Gorlova, M. R. Meyer, G. H. Rieke, & J. Liebert.* 593, 1074 (2003)

MEYER, MICHAEL. See KAROVSKA, MARGARITA, et al. Spatially Resolved Circumnuclear Dust in Centaurus A.

MEYER, MICHAEL R. A Resolved Circumstellar Disk around the Herbig Ae Star HD 00546 in the Thermal Infrared. *Wilson M. Liu, Philip M. Hinz, Michael R. Meyer, Eric E. Mamajek, William F. Hoffman, & Joseph L. Hora.* 598, L111 (2003)

MEYER, RICHARD. Three Emission-Line Galaxies at $z \sim 2.4$. *Richard Meyer, David Thompson, & Filippo Mannucci.* 585, 73 (2003)

MEYER, S. S. See BENNETT, C. L., et al. The *Microwave Anisotropy Probe* Mission.

See PAGE, L., et al. The Optical Design and Characterization of the *Microwave Anisotropy Probe*.

See JAROSIK, N., et al. Design, Implementation, and Testing of the *Microwave Anisotropy Probe* Radiometers.

See BENNETT, C. L., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Preliminary Maps and Basic Results.

See JAROSIK, N., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: On-Orbit Radiometer Characterization.

See PAGE, L., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Beam Profiles and Window Functions.

See Barnes, C., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Galactic Signal Contamination from Sidelobe Pickup.
See Hinshaw, G., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Data Processing Methods and Systematic Errors Limits.
See Bennett, C. L., et al. First-Year *Wilkinson Microwave Anisotrophy Probe* (*WMAP*) Observations: Foreground Emission.
See Komatsu, E., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Tests of Gaussianity.
See Hinshaw, G., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: The Angular Power Spectrum.
See Kogut, A., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Temperature-Polarization Correlation.
See Spergel, D. N., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Determination of Cosmological Parameters.
See Verde, L., et al. First-Year *Wilkinson Microwave Anisotrophy Probe* (*WMAP*) Observations: Parameter Estimation Methodology.
See Peiris, H. V., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Implications for Inflation.
See Page, L., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Interpretation of the TT and TE Angular Power Spectrum Peaks.
See Aguirre, J. E., et al. The Spectrum of Integrated Millimeter Flux of the Magellanic Clouds and 30 Doradus from TopHat and DIRBE Data.

Meza, Andrés. Simulations of Galaxy Formation in a ΛCDM Universe. III. The Dissipative Formation of an Elliptical Galaxy. *Andrés Meza, Julio F. Navarro, Matthias Steinmetz, & Vincent R. Eke.* 590, 619 (2003)
On the Nature of the Ringlike Structure in the Outer Galactic Disk. *Amina Helmi, Julio F. Navarro, Andrés Meza, Matthias Steinmetz, & Vincent R. Eke.* 592, L25 (2003)

Mezzacappa, A. A New $^{17}F(p, \gamma)^{18}Ne$ Reaction Rate and Its Implications for Nova Nucleosynthesis. *S. Parete-Koon, W. R. Hix, M. S. Smith, S. Starrfield, D. W. Bardayan, M. W. Guidry, & A. Mezzacappa.* 598, 1239 (2003)

Mezzacappa, Anthony. Stability of Standing Accretion Shocks, with an Eye toward Core-Collapse Supernovae. *John M. Blondin, Anthony Mezzacappa, & Christine DeMarino.* 584, 971 (2003)

Miaja, L. A Polarization Survey of SiO Maser Variability in Evolved Stars. *J. Glenn, P. R. Jewell, R. Fourre, & L. Miaja.* 588, 478 (2003)

Miccolis, D. Influence of Photospheric Magnetic Fields and Dynamics on Chromospheric K-Line Emission. *J. K. Lawrence, A. C. Cadavid, D. Miccolis, T. E. Berger, & A. Ruzmaikin.* 597, 1178 (2003)

Micela, G. *Chandra* X-Ray Observation of the Orion Nebula Cluster. I. Detection, Identification, and Determination of X-Ray Luminosities. *E. Flaccomio, F. Damiani, G. Micela, S. Sciortino, F. R. Harnden, Jr., S. S. Murray, & S. J. Wolk.* 582, 382 (2003)
Chandra X-Ray Observation of the Orion Nebula Cluster. II. Relationship between X-Ray Activity Indicators and Stellar Parameters. *E. Flaccomio, F. Damiani, G. Micela, S. Sciortino, F. R. Harnden, Jr., S. S. Murray, & S. J. Wolk.* 582, 398 (2003)
Chandra Observations of the Young Open Cluster NGC 2516. *F. Damiani, E. Flaccomio, G. Micela, S. Sciortino, F. R. Harnden, Jr., S. S. Murray, S. J. Wolk, & R. D. Jeffries.* 588, 1009 (2003)

Miceli, Antonino. See Szkody, Paula, et al. Two Rare Magnetic Cataclysmic Variables with Extreme Cyclotron Features Identified in the Sloan Digital Sky Survey.

Michael, B. P. Zinc Crystal Growth in Microgravity. *B. P. Michael, Joseph A. Nuth III, & Lembit U. Lilleleht.* 590, 579 (2003)

Michael, Eli. *Hubble Space Telescope* Observations of High-Velocity Lyα and Hα Emission from Supernova Remnant 1987A: The Structure and Development of the Reverse Shock. *Eli Michael, Richard McCray, Roger Chevalier, Alexei V. Filippenko, Peter Lundqvist, Peter Challis, Ben Sugerman, Stephen Lawrence, C. S. J. Pun, Peter Garnavich, Robert Kirshner, Arlin Crotts, Claes Fransson, Weidong Li, Nino Panagia, Mark Phillips, Brian Schmidt, George Sonneborn, Nicholas Suntzeff, Lifan Wang, & J. Craig Wheeler.* 593, 809 (2003)

Michael, Ernest A. Laboratory Spectrum of the $1_{11}–2_{02}$ Rotational Transition of CH_2. *Ernest A. Michael, Frank Lewen, Gisbert Winnewisser, Hiroyuki Ozeki, Hideta Habara, & Eric Herbst.* 596, 1356 (2003)

Michalek, G. A New Method for Estimating Widths, Velocities, and Source Location of Halo Coronal Mass Ejections. *G. Michalek, N. Gopalswamy, & S. Yashiro.* 584, 472 (2003)

Michelson, P. F. Variability of EGRET Gamma-Ray Sources. *P. L. Nolan, W. F. Tompkins, I. A. Grenier, & P. F. Michelson.* 597, 615 (2003)

Michelson, Peter F. The Gamma-Ray Blazar Content of the Northern Sky. *David Sowards-Emmerd, Roger W. Romani, & Peter F. Michelson.* 590, 109 (2003)

Michielsen, D. The Puzzlingly Large Ca II Triplet Absorption in Dwarf Elliptical Galaxies. *D. Michielsen, S. De Rijcke, H. Dejonghe, W. W. Zeilinger, & G. K. T. Hau.* 597, L21 (2003)

Michtchenko, T. A. Extrasolar Planets in Mean-Motion Resonance: Apses Alignment and Asymmetric Stationary Solutions. *C. Beaugé, S. Ferraz-Mello, & T. A. Michtchenko.* 593, 1124 (2003)

Mieksin, Avery. See Blanton, Michael R., et al. The Galaxy Luminosity Function and Luminosity Density at Redshift $z = 0.1$.

Miesch, Mark S. Numerical Modeling of the Solar Tachocline. II. Forced Turbulence with Imposed Shear. *Mark S. Miesch.* 586, 663 (2003)

Migenes, Victor. See Imai, Hiroshi, et al. The Three-dimensional Kinematics of Water Masers around the Semiregular Variable RT Virginis.

Miglio, L. See Crill, B. P., et al. BOOMERANG: A Balloon-Borne Millimeter-Wave Telescope and Total Power Receiver for Mapping Anisotropy in the Cosmic Microwave Background.

Mignani, R. See Israel, G. L., et al. The Infrared Counterpart to the Anomalous X-Ray Pulsar 1RXS J170849−400910.

Mignani, R. P. Search for the Optical Counterpart of the Vela Pulsar X-Ray Nebula. *R. P. Mignani, A. De Luca, O. Kargaltsev, G. G. Pavlov, S. Zaggia, P. A. Caraveo, & W. Becker.* 594, 419 (2003)

Mignani, Roberto. See Becker, Werner, et al. *Chandra X-Ray Observatory* Observations of the Globular Cluster M28 and Its Millisecond Pulsar PSR 1821−24.

Mignani, Roberto P. Search for the Optical Counterpart of the Nearby Pulsar J0108−1431. *Roberto P. Mignani, Richard N. Manchester, & George G. Pavlov.* 582, 978 (2003)

Mignoli, M. See Gilli, R., et al. Tracing the Large-Scale Structure in the *Chandra* Deep Field South.
See Poli, F., et al. The Evolution of the Galaxy Luminosity Function in the Rest-Frame Blue Band up to $z = 3.5$.

Mihajlov, A. A. Symmetrical Chemi-Ionization and Chemi-Recombination Processes in Low-Temperature Layers of Helium-rich DB White Dwarf Atmospheres. *A. A. Mihajlov, Lj. M. Ignjatović, M. S. Dimitrijević, & Z. Djurić.* 147, 369 (2003)

Mihos, J. Christopher. Kinematics of Planetary Nebulae in M51's Tidal Debris. *Patrick R. Durrell, J. Christopher Mihos, John J. Feldmeier, George H. Jacoby, & Robin Ciardullo.* 582, 170 (2003)

Mikic, Z. Coronal Mass Ejection: Initiation, Magnetic Helicity, and Flux Ropes. I. Boundary Motion–driven Evolution. *T. Amari, J. F. Luciani, J. J. Aly, Z. Mikic, & J. Linker.* 585, 1073 (2003)
Coronal Mass Ejection: Initiation, Magnetic Helicity, and Flux Ropes. II. Turbulent Diffusion–driven Evolution. *T. Amari, J. F. Luciani, J. J. Aly, Z. Mikic, & J. Linker.* 595, 1231 (2003)

Mikles, Valerie J. Red Galaxy Clustering in the NOAO Deep Wide-Field Survey. *Michael J. I. Brown, Arjun Dey, Buell T. Jannuzi, Tod R. Lauer, Glenn P. Tiede, & Valerie J. Mikles.* 597, 225 (2003)

Miley, G. See Tran, H. D., et al. Advanced Camera for Surveys Observations of Young Star Clusters in the Interacting Galaxy UGC 10214.

Miley, G. K. See Bouwens, R. J., et al. Star Formation at $z \sim 6$: i-Dropouts in the Advanced Camera for Surveys Guaranteed Time Observation Fields.
See Blakeslee, John P., et al. Advanced Camera for Surveys Photometry of the Cluster RDCS 1252.9−2927: The Color-Magnitude Relation at $z = 1.24$.
See Meurer, Gerhardt R., et al. The Discovery of Globular Clusters in the Protospiral Galaxy NGC 2915: Implications for Hierarchical Galaxy Evolution.

Miley, George. See Blakeslee, John P., et al. Discovery of Two Distant Type Ia Supernovae in the Hubble Deep Field–North with the Advanced Camera for Surveys.
See Reuland, Michiel, et al. Giant Lyα Nebulae Associated with High-Redshift Radio Galaxies.

Milgrom, Mordehai. Modified Newtonian Dynamics and the "Dearth of Dark Matter in Ordinary Elliptical Galaxies." *Mordehai Milgrom & Robert H. Sanders.* 599, L25 (2003)

Millan-Gabet, R. See Colavita, M., et al. Observations of DG Tauri with the Keck Interferometer.

See SWAIN, MARK, et al. Interferometer Observations of Subparsec-Scale Infrared Emission in the Nucleus of NGC 4151.

MILLAR, T. J. Enhanced Deuterium Fractionation in Dense Interstellar Cores Resulting from Multiply Deuterated H_3^+. *Helen Roberts, Eric Herbst, & T. J. Millar.* 591, L41 (2003)

MILLER, A. D. The MAT/TOCO Measurement of the Angular Power Spectrum of the Cosmic Microwave Background at 30 and 40 GHz. *M. R. Nolta, M. J. Devlin, W. B. Dorwart, A. D. Miller, L. A. Page, J. Puchalla, E. Torbet, & H. T. Tran.* 598, 97 (2003)

MILLER, AMBER D. See LAROQUE, SAMUEL J., et al. Sunyaev-Zeldovich Effect Imaging of MACS Galaxy Clusters at $z > 0.5$.

MILLER, B. A. Does the Energy Supplied to Low-l Solar p-Modes Vary over the Activity Cycle? *W. J. Chaplin, Y. Elsworth, G. R. Isaak, B. A. Miller, R. New, & T. Toutain.* 582, L115 (2003)

MILLER, C. J. See HOPKINS, A. M., et al. Star Formation Rate Indicators in the Sloan Digital Sky Survey.

MILLER, CHRIS. See BAHCALL, NETA A., et al. The Cluster Mass Function from Early Sloan Digital Sky Survey Data: Cosmological Implications.

See BAHCALL, NETA A., et al. A Merged Catalog of Clusters of Galaxies from Early Sloan Digital Sky Survey Data.

MILLER, CHRISTOPHER J. Eccentricity Evolution in Simulated Galaxy Clusters. *Stephan N. Floor, Adrian L. Melott, Christopher J. Miller, & Greg L. Bryan.* 591, 741 (2003)

The Environment of Active Galactic Nuclei in the Sloan Digital Sky Survey. *Christopher J. Miller, Robert C. Nichol, Percy L. Gómez, Andrew M. Hopkins, & Mariangela Bernardi.* 597, 142 (2003)

MILLER, CHRISTOPHER L. See GOMEZ, PERCY L., et al. Galaxy Star Formation as a Function of Environment in the Early Data Release of the Sloan Digital Sky Survey.

MILLER, DOUG. See CLOSE, LAIRD M., et al. Mid-Infrared Imaging of the Post–Asymptotic Giant Branch Star AC Herculis with the Multiple Mirror Telescope Adaptive Optics System.

See CLOSE, LAIRD M., et al. High-Resolution Images of Orbital Motion in the Trapezium Cluster: First Scientific Results from the Multiple Mirror Telescope Deformable Secondary Mirror Adaptive Optics System.

MILLER, H. R. See BÖTTCHER, M., et al. Coordinated Multiwavelength Observations of BL Lacertae in 2000.

MILLER, J. NGC 4261 and NGC 4697: Rejuvenated Elliptical Galaxies. *A. Zezas, L. Hernquist, G. Fabbiano, & J. Miller.* 599, L73 (2003)

MILLER, J. M. X-Ray Emission from the Jets of XTE J1550−564. *P. Kaaret, S. Corbel, J. A. Tomsick, R. Fender, J. M. Miller, J. A. Orosz, T. Tzioumis, & R. Wijnands.* 582, 945 (2003)

XMM-Newton Spectroscopy of the Accretion-driven Millisecond X-Ray Pulsar XTE J1751−305 in Outburst. *J. M. Miller, R. Wijnands, M. Méndez, E. Kendziorra, A. Tiengo, M. van der Klis, D. Chakrabarty, B. M. Gaensler, & W. H. G. Lewin.* 583, L99 (2003)

X-Ray Spectroscopic Evidence for Intermediate-Mass Black Holes: Cool Accretion Disks in Two Ultraluminous X-Ray Sources. *J. M. Miller, G. Fabbiano, M. C. Miller, & A. C. Fabian.* 585, L37 (2003)

X-Ray Temporal Properties of XTE J1650−500 during Outburst Decay. *E. Kalemci, J. A. Tomsick, R. E. Rothschild, K. Pottschmidt, S. Corbel, R. Wijnands, J. M. Miller, & P. Kaaret.* 586, 419 (2003)

Resolved Jets and Long-Period Black Hole X-Ray Novae. *M. R. Garcia, J. M. Miller, J. E. McClintock, A. R. King, & J. Orosz.* 591, 388 (2003)

Untwisting the Tornado: X-Ray Imaging and Spectroscopy of G357.7−0.1. *B. M. Gaensler, J. K. J. Fogel, P. O. Slane, J. M. Miller, R. Wijnands, S. S. Eikenberry, & W. H. G. Lewin.* 594, L35 (2003)

MILLER, J. S. Keck Spectroscopy of Four Quasi-stellar Object Host Galaxies. *J. S. Miller & A. I. Sheinis.* 588, L9 (2003)

MILLER, JON M. X-Ray Jet Emission from the Black Hole X-Ray Binary XTE J1550−564 with *Chandra* in 2000. *John A. Tomsick, Stéphane Corbel, Rob Fender, Jon M. Miller, Jerome A. Orosz, Tasso Tzioumis, Rudy Wijnands, & Philip Kaaret.* 582, 933 (2003)

High-Frequency Quasi-Periodic Oscillations in the Black Holes X-Ray Transient XTE J1650−500. *Jeroen Homan, Marc Klein-Wolt, Sabrina Rossi, Jon M. Miller, Rudy Wijnands, Tomaso Belloni, Michiel van der Klis, & Walter H. G. Lewin.* 586, 1262 (2003)

A *Chandra* Observation of the Neutron Star X-Ray Transient and Eclipsing Binary MXB 1659−29 in Quiescence. *Rudy Wijnands, Mike Nowak, Jon M. Miller, Jeroen Homan, Stefanie Wachter, & Walter H. H. Lewin.* 594, 952 (2003)

See TOMSICK, JOHN A., et al. *Chandra* Detections of Two Quiescent Black Hole X-Ray Transients.

MILLER, L. R. See MATHESON, T., et al. Photometry and Spectroscopy of GRB 03029 and Its Associated Supernova 2003dh: The First Two Months.

MILLER, M. C. X-Ray Spectroscopic Evidence for Intermediate-Mass Black Holes: Cool Accretion Disks in Two Ultraluminous X-Ray Sources. *J. M. Miller, G. Fabbiano, M. C. Miller, & A. C. Fabian.* 585, L37 (2003)

MILLER, NATHAN A. High-Resolution *Chandra* Spectroscopy of τ Scorpii: A Narrow-Line X-Ray Spectrum from a Hot Star. *David H. Cohen, Geneviève E. de Messières, Joseph J. MacFarlane, Nathan A. Miller, Joseph P. Cassinelli, Stanley P. Owocki, & Duane A. Liedahl.* 586, 495 (2003)

MILLER, NEAL A. *Chandra* Observations of Point Sources in A2255. *David S. Davis, Neal A. Miller, & Richard F. Mushotzky.* 597, 202 (2003)

MILLER, R. S. See ATKINS, R., et al. The High-Energy Gamma-Ray Fluence and Energy Spectrum of GRB 970417A from Observations with Milagrito.

See FALCONE, A., et al. Observation of GeV Solar Energetic Particles from the 1997 November 6 Event Using Milagrito.

See ATKINS, R., et al. Observation of TeV Gamma Rays from the Crab Nebula with Milagro Using a New Background Rejection Technique.

MILLER, SCOTT T. Extraplanar Emission-Line Gas in Edge-on Spiral Galaxies. II. Optical Spectroscopy. *Scott T. Miller & Sylvain Veilleux.* 592, 79 (2003)

Extraplanar Emission-Line Gas in Edge-On Spiral Galaxies. I. Deep Emission-Line Imaging. *Scott T. Miller & Sylvain Veilleux.* 148, 383 (2003)

MILLER, T. C. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

MILLER, WARNER A. Off-Axis Neutrino Scattering in Gamma-Ray Burst Central Engines. *Warner A. Miller, Nathan D. George, Arkady Kheyfets, & John M. McGhee.* 583, 833 (2003)

MILNE, PETER. See BUTT, YOUSAF M., et al. *Chandra*/Very Large Array Follow-up of TeV J2032+4131, the Only Unidentified TeV Gamma-Ray Source.

MILOSAVLJEVIĆ, MILOŠ. The Need for a Second Black Hole at the Galactic Center. *Brad M. S. Hansen & Miloš Milosavljević.* 593, L77 (2003)

Long-Term Evolution of Massive Black Hole Binaries. *Miloš Milosavljević & David Merritt.* 596, 860 (2003)

MILSOM, JOHN A. Modeling the Formation of Clouds in Brown Dwarf Atmospheres. *Curtis S. Cooper, David Sudarsky, John A. Milsom, Jonathan I. Lunine, & Adam Burrows.* 586, 1320 (2003)

Modeling the Formation of Clouds in Brown Dwarf Atmospheres: Erratum (ApJ, 586, 1320 [2003]). *Curtis S. Cooper, David Sudarsky, John A. Milsom, Jonathan I. Lunine, & Adam Burrows.* 595, 573 (2003) (Orig. paper in 586, 1320 (2003))

MILSTER, SCOTT. ι Cassiopeiae: Orbit, Masses, and Photometry from Adaptive Optics Imaging in the I and H Bands. *Jack Drummond, Scott Milster, Patrick Ryan, & Lewis C. Roberts, Jr.* 585, 1007 (2003)

MINAEVA, Y. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

MINCER, A. I. See ATKINS, R., et al. The High-Energy Gamma-Ray Fluence and Energy Spectrum of GRB 970417A from Observations with Milagrito.

See FALCONE, A., et al. Observation of GeV Solar Energetic Particles from the 1997 November 6 Event Using Milagrito.

See ATKINS, R., et al. Observation of TeV Gamma Rays from the Crab Nebula with Milagro Using a New Background Rejection Technique.

MINCHIN, ROBERT F. See PRITZL, BARTON J., et al. Anomalous Evolution of the Dwarf Galaxy HIPASS J1321−31.

MINESHIGE, S. Spectra from a Magnetic Reconnection–heated Corona in Active Galactic Nuclei. *B. F. Liu, S. Mineshige, & K. Ohsuga.* 587, 571 (2003)

MINESHIGE, SHIN. A New Method to Map Flares in Quasars. *Atsunori Yonehara, Shin Mineshige, Yoh Takei, George Chartas, & Edwin L. Turner.* 594, 107 (2003)

Model for Relaxation Oscillations of a Luminous Accretion Disk in GRS 1915+105: Variable Inner Edge. *Ken-ya Watarai & Shin Mineshige.* 596, 421 (2003)

Spectral Energy Distribution in Supercritical Disk Accretion Flows through Photon-trapping Effects. *Ken Ohsuga, Shin Mineshige, & Ken-ya Watarai.* 596, 429 (2003)

MINEZAKI, TAKEO. See YOSHII, YUZURU, et al. The Optical/Near-Infrared Light Curves of SN 2002ap for the First 140 Days after Discovery.

MINIATI, FRANCESCO. See BUTT, YOUSAF M., et al. *Chandra*/Very Large Array Follow-up of TeV J2032+4131, the Only Unidentified TeV Gamma-Ray Source.

MININNI, PABLO D. Role of the Hall Current in Magnetohydrodynamic Dynamos. *Pablo D. Mininni, Daniel O. Gómez, & Swadesh M. Mahajan.* 584, 1120 (2003)

Dynamo Action in Magnetohydrodynamics and Hall-Magnetohydrodynamics. *Pablo D. Mininni, Daniel O. Gómez, & Swadesh M. Mahajan.* 587, 472 (2003)

MINNITI, D. The EXPLORE Project. I. A Deep Search for Transiting Extrasolar Planets. *G. Mallén-Ornelas, S. Seager, H. K. C. Yee, D. Minniti, Michael D. Gladders, G. M. Mallén-Fullerton, & T. M. Brown.* 582, 1123 (2003)

See ALCOCK, C., et al. The MACHO Project Large Magellanic Cloud Variable Star Inventory. XI. Frequency Analysis of the Fundamental Mode RR Lyrae Stars.

See MATHESON, T., et al. Photometry and Spectroscopy of GRB 03029 and Its Associated Supernova 2003dh: The First Two Months.

MINOWA, YOSUKE. See GOTO, MIWA, et al. Spatially Resolved 3 Micron Spectroscopy of IRAS 22272+5435: Formation and Evolution of Aliphatic Hydrocarbon Dust in Proto–Planetary Nebulae.

See PYO, TAE-SOO, et al. Adaptive Optics Spectroscopy of the [Fe II] Outflow from DG Tauri.

See GOTO, MIWA, et al. Carbon Isotope Ratio in $^{12}CO/^{13}CO$ toward Local Molecular Clouds with Near-Infrared High-Resolution Spectroscopy of Vibrational Transition Bands.

MIOCINOVIĆ, P. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

MIRABAL, N. High-Resolution Grating Spectroscopy of GRB 020405 with the *Chandra* Low Energy Transmission Grating Spectrometer. *N. Mirabal, F. Paerels, & J. P. Halpern.* 587, 128 (2003)

Search for a Point-Source Counterpart of the Unidentified Gamma-Ray Source TeV J2032+4130 in Cygnus. *R. Mukherjee, J. P. Halpern, E. V. Gotthelf, M. Eracleous, & N. Mirabal.* 589, 487 (2003)

GRB 021004: A Possible Shell Nebula around a Wolf-Rayet Star Gamma-Ray Burst Progenitor. *N. Mirabal, J. P. Halpern, Ryan Chornock, Alexei V. Filippenko, D. M. Terndrup, E. Armstrong, J. Kemp, J. R. Thorstensen, M. Tavarez, & C. Espaillat.* 595, 935 (2003)

MIRALDA-ESCUDÉ, JORDI. The Lyα Forest Flux Distribution at $z \sim 5.2$ and the Evolution of the Ionizing Background: Erratum (ApJ, 549, L11 [2001]). *Patrick McDonald & Jordi Miralda-Escudé.* 595, L67 (2003) (Orig. paper in 549, L11 (2001))

On the Evolution of the Ionizing Emissivity of Galaxies and Quasars Required by the Hydrogen Reionization. *Jordi Miralda-Escudé.* 597, 66 (2003)

A Measurement of the Temperature-Density Relation in the Intergalactic Medium Using a New Lyα Absorption Line Fitting Method: Erratum (ApJ, 562, 52 [2001]). *Patrick McDonald, Jordi Miralda-Escudé, Michael Rauch, Wallace L. W. Sargent, Tom A. Barlow, & Renyue Cen.* 598, 712 (2003) (Orig. paper in 562, 52 (2001))

MIRANDA, P. See WATANABE, K., et al. Solar Neutron Event in Association with a Large Solar Flare on 2000 November 24.

MIROSHNICHENKO, ANATOLY S. Spectroscopic and Spectropolarimetric Observations of V838 Monocerotis. *John P. Wisniewski, Nancy D. Morrison, Karen S. Bjorkman, Anatoly S. Miroshnichenko, Amanda C. Gault, Jennifer L. Hoffman, Marilyn R. Meade, & Jason M. Nett.* 588, 486 (2003)

MISAKI, K. X-Ray–Extreme Ultraviolet Simultaneous Observations of NGC 5548: Fast Extreme Ultraviolet Dip without X-Ray Variation. *Y. Haba, H. Kunieda, K. Misaki, Y. Terashima, J. S. Kaastra, R. Mewe, A. C. Fabian, & K. Iwasawa.* 599, 949 (2003)

MISAO, Y. Discovery of Bright Variable X-Ray Sources in NGC 569 with *Chandra*. *K. Heike, H. Awaki, Y. Misao, K. Hayashida, & K. A. Weaver.* 591, L99 (2003)

MISCH, ANTHONY A. See FISCHER, DEBRA A., et al. A Planetary Companion to HD 40979 and Additional Planets Orbiting HD 12661 and HD 38529.

MISHUROV, YU. N. Corotation, Stellar Wandering, and Fine Structure of the Galactic Abundance Pattern. *J. R. D. Lépine, I. A. Acharova, & Yu. N. Mishurov.* 589, 210 (2003)

MISKEY, CHERIE L. Binarity in Brown Dwarfs: T Dwarf Binaries Discovered with the *Hubble Space Telescope* Wide Field Planetary Camera 2. *Adam J. Burgasser, J. Davy Kirkpatrick, I. Neill Reid, Michael E. Brown, Cherie L. Miskey, & John E. Gizis.* 586, 512 (2003)

MISRA, R. Flux Enhancement in the Inner Region of a Geometrically and Optically Thick Accretion Disk. *R. Misra & K. Sriram.* 584, 981 (2003)

A Continuous Injection Plasma Model for the X-Ray/Radio Knots in Kiloparsec-Scale Jets of Active Galactic Nuclei. *S. Sahayanathan, R. Misra, A. K. Kembhavi, & C. L. Kaul.* 588, L77 (2003)

The Effect of Nonthermal Protons on the High-Energy Spectra of Black Hole Binaries. *S. Bhattacharyya, N. Bhatt, R. Misra, & C. L. Kaul.* 595, 317 (2003)

MISRA, RANJEEV. Pseudo-Newtonian Potentials to Describe the Temporal Effects on Relativistic Accretion Disks around Rotating Black Holes and Neutron Stars. *Banibrata Mukhopadhyay & Ranjeev Misra.* 582, 347 (2003)

MISSELT, K. A. Dust Grain Size Distributions from MRN to MEM. *Geoffrey C. Clayton, Michael J. Wolff, Ulysses J. Sofia, K. D. Gordon, & K. A. Misselt.* 588, 871 (2003)

A Quantitative Comparison of Small Magellanic Cloud, Large Magellanic Cloud, and Milky Way Ultraviolet to Near-Infrared Extinction Curves. *Karl D. Gordon, Geoffrey C. Clayton, K. A. Misselt, Arlo U. Landolt, & Michael J. Wolff.* 594, 279 (2003)

MITCHELL, G. F. Neutral Hydrogen Associated with NGC 7129. *H. E. Matthews, C. R. Purton, R. S. Roger, P. E. Dewdney, & G. F. Mitchell.* 592, 176 (2003)

MITCHELL, GEORGE F. See GOTO, MIWA, et al. Carbon Isotope Ratio in $^{12}CO/^{13}CO$ toward Local Molecular Clouds with Near-Infrared High-Resolution Spectroscopy of Vibrational Transition Bands.

MITO, H. See URATA, Y., et al. Multiband Optical Follow-up Observations of GRB 020813 at the Kiso and Bisei Observatories.

MITRA, SANJIT. Multitransonic Black Hole Accretion Disks with Isothermal Standing Shocks. *Tapas K. Das, Jayant K. Pendharkar, & Sanjit Mitra.* 592, 1078 (2003)

MITROFANOV, I. See PRICE, P. A., et al. Discovery of GRB 020405 and Its Late Red Bump.

See GREINER, J., et al. GRB 011121: A Collimated Outflow into Wind-blown Surroundings.

MITROFANOV, IGOR G. Comparison of Redshift-known Gamma-Ray Bursts with the Main Groups of Bright BATSE Events. *Igor G. Mitrofanov, Anton B. Sanin, Dmitrij S. Anfimov, Maxim L. Litvak, Michael S. Briggs, William S. Paciesas, Geoffrey N. Pendleton, Robert D. Preece, & Charles A. Meegan.* 584, 904 (2003)

MIVILLE-DESCHÊNES, M.-A. On the Use of Fractional Brownian Motion Simulations to Determine the Three-dimensional Statistical Properties of Interstellar Gas. *M.-A. Miville-Deschênes, F. Levrier, & E. Falgarone.* 593, 831 (2003)

MIYAGOSHI, TAKEHIRO. Magnetohydrodynamic Numerical Simulations of Solar X-Ray Jets Based on the Magnetic Reconnection Model That Includes Chromospheric Evaporation. *Takehiro Miyagoshi & Takaaki Yokoyama.* 593, L133 (2003)

MIYAJI, TAKAMITSU. Cosmological Evolution of the Hard X-Ray Active Galactic Nucleus Luminosity Function and the Origin of the Hard X-Ray Background. *Yoshihiro Ueda, Masayuki Akiyama, Kouji Ohta, & Takamitsu Miyaji.* 598, 886 (2003)

MIYAKE, HIDEAKI. Pion Production in the Inner Disk Around Cygnus X-1. *Cesar Meirelles Filho, Celso L. Lima, Hideaki Miyake, & Varese Timoteo.* 595, 322 (2003)

MIYATA, T. See URATA, Y., et al. Multiband Optical Follow-up Observations of GRB 020813 at the Kiso and Bisei Observatories.

MIYATA, TAKASHI. K3-50A: An Ultracompact H II Region Ionized by a Massive Stellar Cluster. *Yoshiko K. Okamoto, Hirokazu Kataza, Takuya Yamashita, Takashi Miyata, Shigeyuki Sako, Shinya Takubo, Mitsuhiko Honda, & Takashi Onaka.* 584, 368 (2003)

Detection of Crystalline Silicates around the T Tauri Star Hen 3-600A. *Mitsuhiko Honda, Hirokazu Kataza, Yoshiko K. Okamoto, Takashi Miyata, Takuya Yamashita, Shigeyuki Sako, Shinya Takubo, & Takashi Onaka.* 585, L59 (2003)

MIYAZAKI, M. See SHIMASAKU, K., et al. Subaru Deep Survey. IV. Discovery of a Large-Scale Structure at Redshift $\simeq$5.

MIYAZAKI, MASAYUKI. See OUCHI, MASAMI, et al. Subaru Deep Survey. II. Luminosity Functions and Clustering Properties of Lyα Emitters at $z = 4.86$ in the Subaru Deep Field.

MIYAZAKI, S. See SHIMASAKU, K., et al. Subaru Deep Survey. IV. Discovery of a Large-Scale Structure at Redshift $\simeq$5.

MIYAZAKI, SATOSHI. See OUCHI, MASAMI, et al. Subaru Deep Survey. II. Luminosity Functions and Clustering Properties of Lyα Emitters at $z = 4.86$ in the Subaru Deep Field.

See KOMIYAMA, YUTAKA, et al. Discovery of Latent Star Formation in the Extended H I Gas around the Local Group Dwarf Irregular Galaxy NGC 6822.

See IYE, MASANORI, et al. ERO R1 in the Field of Cl 0939+4713: Evidence for an S0-Like Galaxy at $z \sim 1.5$.

See HAMANA, TAKASHI, et al. Cosmic Shear Statistics in the Suprime-Cam 2.1 Square Degree Field: Constraints on Ω_m and Σ_8.

MIYOSHI, MAKOTO. See IMAI, HIROSHI, et al. The Three-dimensional Kinematics of Water Masers around the Semiregular Variable RT Virginis.

MIZUMOTO, Y. See ENOMOTO, R., et al. Search for TeV Gamma Rays from SN 1987A in 2001.

See KAWABATA, K. S., et al. On the Spectrum and Spectropolarimetry of Type Ic Hypernova SN 2003dh/GRB 030329.

MIZUNO, A. High-Latitude Molecular Clouds in an H I Filament toward the MBM 53, 54, and 55 Complex: Existence of an H_2 Cloud with Low CO Intensity. *H. Yamamoto, T. Onishi, A. Mizuno, & Y. Fukui.* 592, 217 (2003)

MIZUNO, TSUNEFUMI. Accretion Disk Spectra of Ultraluminous X-Ray Sources in Nearby Spiral Galaxies and Galactic Superluminal Jet Sources. *Ken Ebisawa, Piotr Życki, Aya Kubota, Tsunefumi Mizuno, & Ken-ya Watarai.* 597, 780 (2003)

MIZUTA, A. Explosive Nucleosynthesis Associated with Formation of Jet-induced Gamma-Ray Bursts in Massive Stars. *S. Nagataki, A. Mizuta, S. Yamada, H. Takabe, & K. Sato.* 596, 401 (2003)

MIZUTANI, ARIHIRO. Kinematics of Tidal Debris from ω Centauri's Progenitor Galaxy. *Arihiro Mizutani, Masashi Chiba, & Tsuyoshi Sakamoto.* 589, L89 (2003)

MIZUTANI, K. See AMENOMORI, M., et al. Multi-TeV Gamma-Ray Flares from Markarian 421 in 2000 and 2001 Observed with the Tibet Air Shower Array.

MO, H. J. Mass and Redshift Dependence of Dark Halo Structure. *D. H. Zhao, Y. P. Jing, H. J. Mo, & G. Börner.* 597, L9 (2003)

MOBASHER, B. Dependence of Dust Obscuration on Star Formation Rates in Galaxies. *J. Afonso, A. Hopkins, B. Mobasher, & C. Almeida.* 597, 269 (2003)

MOBASHER, BAHRAM. A Photometric and Spectroscopic Study of Dwarf and Giant Galaxies in the Coma Cluster. IV. The Luminosity Function. *Bahram Mobasher, Matthew Colless, Dave Carter, Bianca M. Poggianti, Terry J. Bridges, Kelly Kranz, Y. Komiyama, N. Kashikawa, M. Yagi, & S. Okamura.* 587, 605 (2003)

MOCHEJSKA, B. See BERSIER, D., et al. The Unusual Optical Afterglow of the Gamma-Ray Burst GRB 021004: Color Changes and Short-Timescale Variability.

MOCHIDA, DAISAKU. See IWAMURO, FUMIHIDE, et al. Infrared Spectroscopy of 15 Radio Galaxies at $2 < z < 2.6$.

MOCHIZUKI, YUKO. Global Anisotrophy versus Small-Scale Fluctuations in Neutrino Flux in Core-Collapse Supernova Explosions. *Hideki Madokoro, Tetsuya Shimizu, & Yuko Mochizuki.* 592, 1035 (2003)

MOCK, P. C. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

MOEKETSI, D. M. Solar Wind Effects on the Transport of 3–10 MeV Cosmic-Ray Electrons from Solar Minimum to Solar Maximum. *S. E. S. Ferreira, M. S. Potgieter, D. M. Moeketsi, B. Heber, & H. Fichtner.* 594, 552 (2003)

MÖLLENHOFF, C. Internal Kinematics of Spiral Galaxies in Distant Clusters. *B. L. Ziegler, A. Böhm, K. Jäger, J. Heidt, & C. Möllenhoff.* 598, L87 (2003)

MÖLLER, OLE. Lensing Effects of Misaligned Disks in Dark Matter Halos. *Ryan Quadri, Ole Möller, & Priyamvada Natarajan.* 597, 659 (2003)

MOFFAT, A. F. J. An X-Ray Investigation of the NGC 346 Field in the Small Magellanic Cloud. II. The Field Population. *Y. Nazé, J. M. Hartwell, I. R. Stevens, J. Manfroid, S. Marchenko, M. F. Corcoran, A. F. J. Moffat, & G. Skalkowski.* 586, 983 (2003)

See MARCHENKO, S. V., et al. The Unusual 2001 Periastron Passage in the "Clockwork" Colliding-Wind Binary WR 140.

MOFFAT, ANTHONY F. J. See COLLEY, WESLEY N., et al. Around-the-Clock Observations of the Q9057+561A,B Gravitationally Lensed Quasar. II. Results for the Second Observing Season.

Discovery of Highly Dynamic Matter Enhancements along the Polar Axis and Equatorial Plane in the Luminous Blue Variable Binary HD 5980. *A. Villar-Sbaffi, Anthony F. J. Moffat, & N. St-Louis.* 590, 483 (2003)

MOHAMED, S. Rotational Spectra of the Nitrogen-Sulfur Carbon NC_nS, $n = 1$–7. *M. C. McCarthy, A. L. Cooksy, S. Mohamed, V. D. Gordon, & P. Thaddeus.* 144, 287 (2003)

MOHAN, A. On the Extreme-Ultraviolet/Ultraviolet Plasma Diagnostics for Nitrogen-like Ions from Spectra Obtained by *SOHO*/SUMER. *A. Mohan, E. Landi, & B. N. Dwivedi.* 582, 1162 (2003)

MOHANTY, G. See AKERLOF, C. W., et al. A Search for Correlations of TeV Gamma Rays with Ultra–High-Energy Cosmic Rays.

MOHANTY, SUBHANJOY. Rotation and Activity in Mid-M to L Field Dwarfs. *Subhanjoy Mohanty & Gibor Basri.* 583, 451 (2003)

Evidence for a T Tauri Phase in Young Brown Dwarfs. *Ray Jayawardhana, Subhanjoy Mohanty, & Gibor Basri.* 592, 282 (2003)

Magellan Echelle Spectroscopy of TW Hydrae Brown Dwarfs. *Subhanjoy Mohanty, Ray Jayawardhana, & David Barrado y Navascues.* 593, L109 (2003)

MOHR, JOSEPH J. Cosmological Implications of the BIMA 30 GHz Sunyaev-Zeldovich Effect Galaxy Cluster Survey. *Yen-Ting Lin & Joseph J. Mohr.* 582, 574 (2003)

Importance of Cluster Structural Evolution in Using X-Ray and Sunyaev-Zeldovich Effect Galaxy Cluster Surveys to Study Dark Energy. *Subhabrata Majumdar & Joseph J. Mohr.* 585, 603 (2003)

Near-Infrared Properties of Galaxy Clusters: Luminosity as a Binding Mass Predictor and the State of Cluster Baryons. *Yen-Ting Lin, Joseph J. Mohr, & S. A. Stanford.* 591, 749 (2003)

MOHR, P. See SONNABEND, K., et al. The s-Process Branching at ^{185}W.

MOILANEN, M. See BÖTTCHER, M., et al. Coordinated Multiwavelength Observations of BL Lacertae in 2000.

MOIN, PARVIZ. Thermal Conduction in Magnetized Turbulent Gas. *Jungyeon Cho, A. Lazarian, Albert Honein, Bernard Knaepen, Stavros Kassinos, & Parviz Moin.* 589, L77 (2003)

MOISEEV, A. V. The Leo I Cloud: Secular Nuclear Evolution of NGC 3379, NGC 3384, and NGC 3368? *O. K. Sil'chenko, A. V. Moiseev, V. L. Afanasiev, V. H. Chavushyan, & J. R. Valdes.* 591, 185 (2003)

MOLENDI, SILVANO. SMAUG: A New Technique for the Deprojection of Galaxy Clusters. *Fabio Pizzolato, Silvano Molendi, Simona Ghizzardi, & Sabrina De Grandi.* 592, 62 (2003)

MOLES, M. Quasars Clustering at $z \approx 3$ on Scales $\lesssim 10\ h^{-1}$ Mpc. *L. Infante, J. Varela, M. Moles, G. Hertling, A. García, & F. Menanteau.* 588, 90 (2003)

MOLINA, A. Irregular Particles in Comet C/1995 O1 Hale-Bopp Inferred from Its Mid-Infrared Spectrum. *F. Moreno, O. Muñoz, R. Vilaplana, & A. Molina.* 595, 522 (2003)

MOLLER, P. See HJORTH, J., et al. Very High Column Density and Small Reddening toward GRB 020124 at $z = 3.20$.

MOLNAR, SANDOR M. Determining Tangential Peculiar Velocities of Clusters of Galaxies Using Gravitational Lensing. *Sandor M. Molnar & Mark Birkinshaw.* 586, 731 (2003)

MOMJIAN, EMMANUEL. Very Long Baseline Array Continuum and H I Absorption Observations of the Ultraluminous Infrared Galaxy IRAS 17208−0014. *Emmanuel Momjian, Jonathan D. Romney, Christopher L. Carilli, Thomas H. Troland, & Gregory B. Taylor.* 587, 160 (2003)

Sensitive VLBI Continuum and H I Absorption Observations of NGC 7474: First Scientific Observations with the Combined Array VLBA, VLA, and Arecibo. *Emmanuel Momjian, Jonathan D. Romney, Christopher L. Carilli, & Thomas H. Troland.* 597, 809 (2003)

MOMOSE, MUNETAKE. High Angular Resolution, Sensitive CS $J = 2$–1 and $J = 3$–2 Imaging of the Protostar L1551 NE: Evidence for Outflow-Triggered Star Formation? *Sozo Yokogawa, Yoshimi Kitamura, Munetake Momose, & Ryohei Kawabe.* 595, 266 (2003)

MONACO, LORENZO. Blue Horizontal-Branch Stars in the Sagittarius Dwarf Spheroidal Galaxy. *Lorenzo Monaco, Michele Bellazzini, Francesco R. Ferraro, & Elena Pancino.* 597, L25 (2003)

MONCUQUET, M. A Search for Small Kuiper Belt Objects by Stellar Occultations. *F. Roques, M. Moncuquet, N. Lavillonière, M. Auvergne, M. Chevreton, F. Colas, & J. Lecacheux.* 594, L63 (2003)

MONDAL, SOUMEN. Possible Photometric Evidence of Ejection of Bullet-like Features in the Relativistic Jet Source SS 433. *Sandip K. Chakrabarti, S. Pal, A. Nandi, B. G. Anandarao, & Soumen Mondal.* 595, L45 (2003)

MONIER, ERIC M. *Chandra* ACIS-S Observations of Three Quasars with Low-Redshift Damped Lyα Absorption: Constraints on the Cosmic Neutral Gas-Phase Metallicity at Redshift $z \approx 0.4$. *David A. Turnshek, Sandhya M. Rao, Andrew F. Ptak, Richard E. Griffiths, & Eric M. Monier.* 590, 730 (2003)

Low-Redshift Damped Lyα Galaxies toward the Quasars B2 0827+243, PKS 0952+179, PKS 1127−145, and PKS 1629+120. *Sandhya M. Rao, Daniel B. Nestor, David A. Turnshek, Wendy M. Lane, Eric M. Monier, & Jacqueline Bergeron.* 595, 94 (2003)

MONNELLY, G. See CREW, G. B., et al. *HETE-2* Localization and Observation of the Bright, X-Ray–rich Gamma-Ray Burst GRB 021211.

MONNIER, J. See COLAVITA, M., et al. Observations of DG Tauri with the Keck Interferometer.

See SWAIN, MARK, et al. Interferometer Observations of Subparsec-Scale Infrared Emission in the Nucleus of NGC 4151.

MONTAGNI, F. See BÖTTCHER, M., et al. Coordinated Multiwavelength Observations of BL Lacertae in 2000.

MONTANARI, E. See PRICE, P. A., et al. Discovery of GRB 020405 and Its Late Red Bump.

MONTES, MARCOS J. Radio Emission from SN 2001gd in NGC 5033. *Christopher J. Stockdale, Kurt W. Weiler, Schuyler D. Van Dyk, Marcos J. Montes, Nino Panagia, Richard A. Sramek, M. A. Perez-Torres, & J. M. Marcaide.* 592, 900 (2003)

MONTMERLE, T. Spatial Study with the Very Large Telescope of a New Resolved Edge-on Circumstellar Dust Disk Discovered at the Periphery of the ρ Ophiuchi Dark Cloud. *N. Grosso, J. Alves, K. Wood, R. Neuhäuser, T. Montmerle, & J. E. Bjorkman.* 586, 296 (2003)

MONTMERLE, THIERRY. 10 MK Gas in M17 and the Rosette Nebula: X-Ray Flows in Galactic H II Regions. *Leisa K. Townsley, Eric D. Feigelson, Thierry Montmerle, Patrick S. Broos, You-Hua Chu, & Gordon P. Garmire.* 593, 874 (2003)

MONTOYA, MANNY. See CLOSE, LAIRD M., et al. High-Resolution Images of Orbital Motion in the Trapezium Cluster: First Scientific Results from the Multiple Mirror Telescope Deformable Secondary Mirror Adaptive Optics System.

MONTROY, T. See CRILL, B. P., et al. BOOMERANG: A Balloon-Borne Millimeter-Wave Telescope and Total Power Receiver for Mapping Anisotropy in the Cosmic Microwave Background.

See RUHL, J. E., et al. Improved Measurement of the Angular Power Spectrum of Temperature Anisotropy in the Cosmic Microwave Background from Two New Analyses of BOOMERANG Observations.

MOON, DAE-SIK. SMC X-1 as an Intermediate-Stage Flaring X-Ray Pulsar. *Dae-Sik Moon, Stephen S. Eikenberry, & Ira M. Wasserman.* 582, L91 (2003)

The Evolution of LMC X-4 Flares: Evidence for Super Eddington Radiation Oosing through Inhomogeneous Polar Cap Accretion Flows? *Dae-Sik Moon, Stephen S. Eikenberry, & Ira M. Wasserman.* 586, 1280 (2003)

MOON, Y.-J. Sympathetic Coronal Mass Ejections. *Y.-J. Moon, G. S. Choe, Haimin Wang, & Y. D. Park.* 588, 1176 (2003)

Observations of the Failed Eruption of a Filament. *Haisheng Ji, Haimin Wang, Edward J. Schmahl, Y.-J. Moon, & Yunchun Jiang.* 595, L135 (2003)

Flux Rope Acceleration and Enhanced Magnetic Reconnection Rate. *C. Z. Cheng, Y. Ren, G. S. Choe, & Y.-J. Moon.* 596, 1341 (2003)

MOORE, J. See COLAVITA, M., et al. Observations of DG Tauri with the Keck Interferometer.

MOORE, M. H. Solid-Phase Formation of Interstellar Vinyl Alchohol. *R. L. Hudson & M. H. Moore.* 586, L107 (2003)

MOORE, MARLA H. Side Group Addition to the Polycyclic Aromatic Hydrocarbon Coronene by Proton Irradiation in Cosmic Ice Analogs. *Max P. Bernstein, Marla H. Moore, Jamie E. Elsila, Scott A. Sandford, Louis J. Allamandola, & Richard N. Zare.* 582, L25 (2003)

Photodestruction of Relevant Interstellar Molecules in Ice Mixtures. *Hervé Cottin, Marla H. Moore, & Yves Bénilan.* 590, 874 (2003)

MOORE, R. L. Solar Coronal Heating and the Magnetic Flux Content of the Network. *D. A. Falconer, R. L. Moore, J. G. Porter, & D. H. Hathaway.* 593, 549 (2003)

MOORE, RONALD L. Tether-cutting Energetics of a Solar Quiet-Region Prominence Eruption. *Alphonse C. Sterling & Ronald L. Moore.* 599, 1418 (2003)

MOORE, WILLIAM B. Stable 1:2 Resonant Periodic Orbits in Elliptic Three-Body Systems. *Nader Haghighipour, Jocelyn Couetdic, Ferenc Varadi, & William B. Moore.* 596, 1332 (2003)

MOORWOOD, A. F. M. See DADDI, E., et al. Detection of Strong Clustering of Red *K*-selected Galaxies at $2 < z_{\rm phot} < 4$ in the Hubble Deep Field–South.

MOORWOOD, ALAN. See FRANX, MARIJN, et al. A Significant Population of Red, Near-Infrared–selected High-Redshift Galaxies.

See VAN DOKKUM, PIETER G., et al. Spectroscopic Confirmation of a Substantial Population of Luminous Red Galaxies at Redshifts $z \gtrsim 2$.

See LABBÉ, IVO, et al. Large Disklike Galaxies at High Redshift.

See RUDNICK, GREGORY, et al. The Rest-Frame Optical Luminosity Density, Color, and Stellar Mass Density of the Universe from $z = 0$ to $z = 3$.

MOORWOOD, ALAN F. M. Hα Spectroscopy of Galaxies at $z > 2$: Kinematics and Star Formation. *Dawn K. Erb, Alice E. Shapley, Charles C. Steidel, Max Pettini, Kurt L. Adelberger, Matthew P. Hunt, Alan F. M. Moorwood, & Jean-Gabriel Cuby.* 591, 101 (2003)

MOOS, H. W. See WAKKER, B. P., et al. The *Far Ultraviolet Spectroscopic Explorer* Survey of O VI Absorption in and near the Galaxy.

See SAVAGE, B. D., et al. Distribution and Kinematics of O VI in the Galactic Halo.

See SEMBACH, K. R., et al. Highly Ionized High-Velocity Gas in the Vicinity of the Galaxy.

See ANDRÉ, M. K., et al. Oxygen Gas-Phase Abundance Revisited.

Far Ultraviolet Spectroscopic Explorer Survey of the Local Interstellar Medium within 200 Parsecs. *N. Lehner, E. B. Jenkins, C. Gry, H. W. Moos, P. Chayer, & S. Lacour.* 595, 858 (2003)

MOOS, H. WARREN. Deuterium toward Two Milky Way Disk Stars: Probing Extended Sight Lines with the *Far Ultraviolet Spectroscopic Explorer*. *Charles G. Hoopes, Kenneth R. Sembach, Guillaume Hébrard, H. Warren Moos, & David C. Knauth.* 586, 1094 (2003)

Interstellar Deuterium, Nitrogen, and Oxygen Abundances toward GD 246, WD 2331−475, HZ 21, and Lanning 23: Results from the *FUSE* Mission. *Cristina M. Oliveira, Guillaume Hébrard, J. Christopher Howk, Jeffrey W. Kruk, Pierre Chayer, & H. Warren Moos.* 587, 235 (2003)

Potential Variations in the Interstellar N I Abundance. *David C. Knauth, B-G Andersson, Stephan R. McCandliss, & H. Warren Moos.* 596, L51 (2003)

The Deuterium-to-Oxygen Ratio in the Interstellar Medium. *Guillaume Hébrard & H. Warren Moos.* 599, 296 (2003)

MORALES, M. F. See ATKINS, R., et al. The High-Energy Gamma-Ray Fluence and Energy Spectrum of GRB 970417A from Observations with Milagrito.

See FALCONE, A., et al. Observation of GeV Solar Energetic Particles from the 1997 November 6 Event Using Milagrito.

See ATKINS, R., et al. Observation of TeV Gamma Rays from the Crab Nebula with Milagro Using a New Background Rejection Technique.

MORAN, J. M. The Discovery of H_2O Maser Emission in Seven Active Galactic Nuclei and at High Velocities in the Circinus Galaxy. *L. J. Greenhill, P. T. Kondrakto, J. E. J. Lovell, T. B. H. Kuiper, J. M. Moran, D. L. Jauncey, & G. P. Baines.* 582, L11 (2003)

See GREENHILL, L. J., et al. A Warped Accretion Disk and Wide-Angle Outflow in the Inner Parsec of the Circinus Galaxy.

MORAN, THOMAS G. Test for Alfvén Wave Signatures in a Solar Coronal Hole. *Thomas G. Moran.* 598, 657 (2003)

MORENO, EDMUNDO. Nonlinear Effects in Models of the Galaxy. I. Midplane Stellar Orbits in the Presence of Three-Dimensional Spiral Arms. *Bárbara Pichardo, Marco Martos, Edmundo Moreno, & Julia Espresate.* 582, 230 (2003)

MORENO, F. Irregular Particles in Comet C/1995 O1 Hale-Bopp Inferred from Its Mid-Infrared Spectrum. *F. Moreno, O. Muñoz, R. Vilaplana, & A. Molina.* 595, 522 (2003)

MORETTI, A. The Resolved Fraction of the Cosmic X-Ray Background. *A. Moretti, S. Campana, D. Lazzati, & G. Tagliaferri.* 588, 696 (2003)

MORETTI, P. F. Detection of Photospheric Impacts from Chromospheric Impulsive Events. *P. F. Moretti, F. Berrilli, A. Sebastianelli, C. Briand, & E. Pietropaolo.* 589, L109 (2003)

MORETTI, PIER-FRANCESCO. How Well Can We Infer the Properties of the Solar Acoustic Sources? *Stuart M. Jefferies, Giuseppe Severino, Pier-Francesco Moretti, Maurizio Oliviero, & Cynthia Giebink.* 596, L117 (2003)

MORGAN, CHRISTOPHER W. Transit Target Selection Using Reduced Proper Motions. *Andrew Gould & Christopher W. Morgan.* 585, 1056 (2003)

MORGAN, E. See CREW, G. B., et al. *HETE-2* Localization and Observation of the Bright, X-Ray–rich Gamma-Ray Burst GRB 021211.

MORGAN, H. L. Cold Dust in Kepler's Supernova Remnant. *H. L. Morgan, L. Dunne, S. A. Eales, R. J. Ivison, & M. G. Edmunds.* 597, L33 (2003)

MORGANTI, R. The Nuclear Accretion in the FR I Radio Galaxy IC 4296 from *Chandra* and Very Long Baseline Array Observations. *S. Pellegrini, T. Venturi, A. Comastri, G. Fabbiano, F. Fiore, C. Vignali, R. Morganti, & G. Trinchieri.* 585, 677 (2003)

Fast Outflow of Neutral Hydrogen in the Radio Galaxy 3C 293. *R. Morganti, T. A. Oosterloo, B. H. C. Emonts, J. M. van der Hulst, & C. N. Tadhunter.* 593, L69 (2003)

MORGANTI, RAFFAELLA. Detection of X-Ray Emission from the Eastern Radio Lobe of Pictor A. *Paola Grandi, Matteo Guainazzi, Laura Maraschi, Raffaella Morganti, Roberto Fusco-Femiano, Mariateresa Fiocchi, Lucia Ballo, & Fabrizio Tavecchio.* 586, 123 (2003)

MORI, KAYA. Isolated Magnetar Spin-Down, Soft X-Ray Emission, and RX J1856.5−3754. *Kaya Mori & Malvin A. Ruderman.* 592, L75 (2003)

MORI, KOJI. Coronal X-Ray Emission from an Intermediate-Age Brown Dwarf. *Yohko Tsuboi, Yoshitomo Maeda, Eric D. Feigelson, Gordon P. Garmire, George Chartas, Koji Mori, & Steven H. Pravdo.* 587, L51 (2003)

MORI, M. See ENOMOTO, R., et al. Search for TeV Gamma Rays from SN 1987A in 2001.

MORI, MASAKI. Dense Gas Clouds and the Unidentified EGRET Sources. *Mark Walker, Masaki Mori, & Michiko Ohishi.* 589, 810 (2003)

MORI, MASAO. Protoquasars: Physical States and Observable Properties. *Nozomu Kawakatu, Masayuki Umemura, & Masao Mori.* 583, 85 (2003)

MORI, W. B. Interpenetrating Plasma Shells: Near-Equipartition Magnetic Field Generation and Nonthermal Particle Acceleration. *L. O. Silva, R. A. Fonseca, J. W. Tonge, J. M. Dawson, W. B. Mori, & M. V. Medvedev.* 596, L121 (2003)

MORIARTY, P. See HOLDER, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.

See HALL, T. A., et al. Search for TeV Emissions from Pulsars in Binary Systems.

See DE LA CALLE PÉREZ, I., et al. Search for High-Energy Gamma Rays from an X-Ray–Selected Blazar Sample.

MORIARTY-SCHIEVEN, G. H. See FOX, D. W., et al. Discovery of Early Optical Emission from GRB 021211.

See FRAIL, D. A., et al. The Broadband Afterglow of GRB 980703.

MORITA, UMEYO. See WATANABE, SHIN, et al. Detection of a Fully Resolved Compton Shoulder of the Iron Kα Line in the *Chandra* X-Ray Spectrum of GX 301-2.

MORO, H. See ENOMOTO, R., et al. Search for TeV Gamma Rays from SN 1987A in 2001.

MORO-MARTÍN, A. Warm Molecular Hydrogen and Ionized Neon in the HH 2 Outflow. *B. LeFloch, J. Cernicharo, S. Cabrit, A. Noriega-Crespo, A. Moro-Martín, & D. Cesarsky.* 590, L41 (2003)

MORRIS, M. An Icy, Bipolar Proto–Planetary Nebula with Knotty Jets: IRAS 22036+5306. *R. Sahai, A. Zijlstra, C. Sánchez Contreras, & M. Morris.* 586, L81 (2003)

See GHEZ, A. M., et al. The First Measurement of Spectral Lines in a Short-Period Star Bound to the Galaxy's Central Black Hole: A Paradox of Youth.

See BAGANOFF, F. K., et al. *Chandra* X-Ray Spectroscopic Imaging of Sagittarius A* and the Central Parsec of the Galaxy.

MORRIS, M. R. See MUNO, M. P., et al. A Deep *Chandra* Catalog of X-Ray Point Sources toward the Galactic Center.

MORRIS, MARK. Evidence for Grain Growth in the Protostellar Disks of Orion. *R. Y. Shuping, John Bally, Mark Morris, & Henry Throop.* 587, L109 (2003)

Sqeezars: Tidally Powered Stars Orbiting a Massive Black Hole. *Tal Alexander & Mark Morris.* 590, L25 (2003)

Dynamical Friction on Star Clusters near the Galactic Center. *Sungsoo S. Kim & Mark Morris.* 597, 312 (2003)

See FIGER, DONALD F., et al. High-Precision Stellar Radial Velocities in the Galactic Center.

X-Ray Emission from the Pre–Planetary Nebula Henize 3-1475. *Raghvendra Sahai, Joel H. Kastner, Adam Frank, Mark Morris, & Eric G. Blackman.* 599, L87 (2003)

MORRISON, G. E. Radio-selected Galaxis in Very Rich Clusters at $z \leq 0.25$. I. Multiwavelength Observations and Data Reduction Techniques. *G. E. Morrison, F. N. Owen, M. J. Ledlow, W. C. Keel, J. M. Hill, W. Voges, & T. Herter.* 146, 267 (2003)

MORRISON, HEATHER L. Andromeda VIII: A New Tidally Distorted Satellite of M31. *Heather L. Morrison, Paul Harding, Denise Hurley-Keller, & George Jacoby.* 596, L183 (2003)

MORRISON, N. See LOBEL, A., et al. High-Resolution Spectroscopy of the Yellow Hypergiant ρ Cassiopeiae from 1993 through the Outburst of 2000–2001.

MORRISON, NANCY D. Spectroscopic and Spectropolarimetric Observations of V838 Monocerotis. *John P. Wisniewski, Nancy D. Morrison, Karen S. Bjorkman, Anatoly S. Miroshnichenko, Amanda C. Gault, Jennifer L. Hoffman, Marilyn R. Meade, & Jason M. Nett.* 588, 486 (2003)

MORSE, JON A. Numerous Proplyd Candidates in the Harsh Environment of the Carina Nebula. *Nathan Smith, John Bally, & Jon A. Morse.* 587, L105 (2003)

MORSE, R. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

MORSINK, SHARON M. Saturation of the r-Mode Instability. *Phil Arras, Eanna E. Flanagan, Sharon M. Morsink, A. Katrin Schenk, Saul A. Teukolsky, & Ira Wasserman.* 591, 1129 (2003)

MORTLOCK, DANIEL J. Spectroscopic Detection of Type Ia Supernovae in the Sloan Digital Sky Survey. *Darren S. Madgwick, Paul C. Hewett, Daniel J. Mortlock, & Lifan Wang.* 599, L33 (2003)

MORTON, DONALD C. High-Resolution Observations of Interstellar Ca I Absorption—Implications for Depletions and Electron Densities in Diffuse Clouds. *Daniel E. Welty, L. M. Hobbs, & Donald C. Morton.* 147, 61 (2003)

Atomic Data for Resonance Absorption Lines. III. Wavelengths Longward of the Lyman Limit for the Elements Hydrogen to Gallium. *Donald C. Morton.* 149, 203 (2003)

MORY, MATTHEW P. Radio Galaxy Redshift–Angular Size Data Constraints on Dark Energy. *Silviu Podariu, Ruth A. Daly, Matthew P. Mory, & Bharat Ratra.* 584, 577 (2003)

MOSCADELLI, L. A High Spectral Resolution VLBI Study of the 12 GHz Methanol Masers in W3(OH): Their Submilliarcsecond Structure and Clues on Saturation. *L. Moscadelli, K. M. Menten, C. M. Walmsley, & M. J. Reid.* 583, 776 (2003)

MOSCARDINI, L. High-Resolution Simulations of Non-Gaussian Cosmic Microwave Background Maps in Spherical Coordinates. *M. Liguori, S. Matarrese, & L. Moscardini.* 597, 57 (2003)

MOSKALENKO, IGOR V. Challenging Cosmic-Ray Propagation with Antiprotons: Evidence for a "Fresh" Nuclei Component? *Igor V. Moskalenko, Andrew W. Strong, Stepan G. Mashnik, & Jonathan F. Ormes.* 586, 1050 (2003)

MOSKALIK, P. See MUKADEM, ANJUM S., et al. Constraining the Evolution of ZZ Ceti.

MOTCH, C. See ISRAEL, G. L., et al. The Infrared Counterpart to the Anomalous X-Ray Pulsar 1RXS J170849−400910.

MOTOHARA, K. A SCUBA Galaxy in the Protocluster around 53W002 at $z = 2.4$. *Ian Smail, R. J. Ivison, D. G. Gilbank, J. S. Dunlop, W. C. Keel, K. Motohara, & J. A. Stevens.* 583, 551 (2003)

MOTOHARA, KENTARO. See IWAMURO, FUMIHIDE, et al. Infrared Spectroscopy of 15 Radio Galaxies at $2 < z < 2.6$.

MOTTE, F. From Massive Protostars to a Giant H II Region: Submillimeter Imaging of the Galactic Ministarburst W43. *F. Motte, P. Schilke, & D. C. Lis.* 582, 277 (2003)

MOUAWAD, N. Stellar Dynamics in the Central Arcsecond of Our Galaxy. *R. Schödel, T. Ott, R. Genzel, A. Eckart, N. Mouawad, & T. Alexander.* 596, 1015 (2003)

MOULD, JEREMY. A Model for *SIRTF* Galaxy Counts. *Jeremy Mould.* 587, L93 (2003)

MOURI, HIDEAKI. Orbital Decay and Tidal Disruption of a Star Cluster: Analytical Calculation. *Hideaki Mouri & Yoshiaki Taniguchi.* 585, 250 (2003)

MSEZANE, A. Z. Energy Levels, Radiative Rates, and Collision Strengths for Transitions in Fe XVII. *K. M. Aggarwal, F. P. Keenan, & A. Z. Msezane.* 144, 169 (2003)

MU, J. See AMENOMORI, M., et al. Multi-TeV Gamma-Ray Flares from Markarian 421 in 2000 and 2001 Observed with the Tibet Air Shower Array.

MUDERS, D. Two Molecular Clouds near M17. *T. L. Wilson, M. M. Hanson, & D. Muders.* 590, 895 (2003)

MÜLLER, A. See SAVIN, D. W., et al. Dielectronic Recombination of the Fe XXI and Fe XXII via $N = 2 \rightarrow N' = 2$ Core Excitations.

MÜLLER, CHRISTIAN M. Early Quintessence in Light of the *Wilkinson Microwave Anisotropy Probe*. *Robert R. Caldwell, Michael Doran, Christian M. Müller, Gregor Schäfer, & Christof Wetterich.* 591, L75 (2003)

MÜLLER, D. See HOLDER, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.

See DE LA CALLE PÉREZ, I., et al. Search for High-Energy Gamma Rays from an X-Ray–Selected Blazar Sample.

MÜLLER, EWALD. Three-dimensional Simulations of Relativistic Precessing Jets Probing the Structure of Superluminal Sources. *Miguel-Ángel Aloy, José-María Martí, José-Luís Gómez, Iván Agudo, Ewald Müller, & José-María Ibáñez.* 585, L109 (2003)

MÜLLER, H. S. P. A Concise New Look at the *l*-Type Spectrum of $H^{12}C^{14}N$. *S. Thorwirth, H. S. P. Müller, F. Lewen, S. Brünken, V. Ahrens, & G. Winnewisser.* 585, L163 (2003)

Detection of HCN Direct *l*-Type Transitions Probing Hot Molecular Gas in the Proto–Planetary Nebula CRL 618. *S. Thorwirth, F. Wyrowski, P. Schilke, K. M. Menten, S. Brünken, H. S. P. Müller, & G. Winnewisser.* 586, 338 (2003)

MUELLER, HANS-REINHARD. A Search for Lyα Emission from the Astrosphere of 40 Eridani A. *Brian E. Wood, Jeffrey L. Linsky, Hans-Reinhard Mueller, & Gary P. Zank.* 591, 1210 (2003)

MÜLLER, HOLGER S. P. Laboratory Precision Measurements of the Rotational Spectrum of $^{12}C^{17}O$ and $^{13}C^{17}O$. *Gabriele Klapper, Leonid Surin, Frank Lewen, Holger S. P. Müller, Igor Pak, & Gisbert Winnewisser.* 582, 262 (2003)

MÜLLER, M. See MUKADEM, ANJUM S., et al. Constraining the Evolution of ZZ Ceti.

MUELLER, P. On Large-Scale Magnetic Field Reversals in the Outer Galaxy. *J. C. Brown, A. R. Taylor, R. Wielebinski, & P. Mueller.* 592, L29 (2003)

MUELLER, PETER J. A Bayesian Analysis of the Cepheid Distance Scale. *Thomas G. Barnes III, W. H. Jefferys, J. O. Berger, Peter J. Mueller, K. Orr, & R. Rodriguez.* 592, 539 (2003)

MUENCH, A. A. A Census of the Young Cluster IC 348. *K. L. Luhman, John R. Stauffer, A. A. Muench, G. H. Rieke, E. A. Lada, J. Bouvier, & C. J. Lada.* 593, 1093 (2003)

MÚJICA, R. See STEPANIAN, J. A., et al. A Multiwavelength Study of Narrow-Line Seyfert 1 Galaxies from the Second Byurakan Survey.

Early Star Formation Traced by the Highest Redshift Quasars. *R. Maiolino, Y. Juarez, R. Mujica, N. M. Nagar, & E. Oliva.* 596, L155 (2003)

MUJICA, RAUL. See COLLEY, WESLEY N., et al. Around-the-Clock Observations of the Q9057+561A,B Gravitationally Lensed Quasar. II. Results for the Second Observing Season.

MUKADAM, A. See SMITH, D. A., et al. ROTSE-III Observations of the Early Afterglow from GRB 030329.

MUKADEM, ANJUM S. Constraining the Evolution of ZZ Ceti. *Anjum S. Mukadem, S. O. Kepler, D. E. Winget, R. E. Nather, M. Kilic, F. Mullally, T. von Hippel, S. J. Kleinman, A. Nitta, J. A. Guzik, P. A. Bradley, J. Matthews, K. Sekiguchi, D. J. Sullivan, T. Sullivan, R. R. Shobbrook, P. Birch, X. J. Jiang, D. W. Xu, S. Joshi, B. N. Ashoka, P. Ibbetson, E. Leibowitz, E. O. Ofek, E. G. Meištas, R. Janulis, D. Ališauskas, R. Kalytis, G. Handler, D. Kilkenny, D. O'Donoghue, D. W. Kurtz, M. Müller, P. Moskalik, W. Ogłoza, S. Zola, J. Krzesiński, F. Johannessen, J. M. Gonzalez-Perez, J. -E. Solheim, R. Silvotti, S. Bernabei, G. Vauclair, N. Dolez, J. N. Fu, M. Chevreton, M. Manteiga, O. Suárez, A. Ulla, M. S. Cunha, T. S. Metcalfe, A. Kanaan, L. Fraga, A. F. M. Costa, O. Giovannini, G. Fontaine, P. Bergeron, M. S. O'Brien, D. Sanwal, M. A. Wood, T. J. Ahrens, N. Silvestri, E. W. Klumpe, S. D. Kawaler, R. Riddle, M. D. Reed, & T. K. Watson.* 594, 961 (2003)

MUKAI, K. *Chandra* Observation of Luminous and Ultraluminous X-Ray Binaries in M101. *K. Mukai, W. D. Pence, S. L. Snowden, & K. D. Kuntz.* 582, 184 (2003)

See DRAKE, JEREMY J., et al. The Extraordinary X-Ray Light Curve of the Classical Nova V1494 Aquilae (1999 No. 2) in Outburst: The Discovery of Pulsations and a "Burst."

Diffuse X-Ray Emission from M101. *K. D. Kuntz, S. L. Snowden, W. D. Pence, & K. Mukai.* 588, 264 (2003)

The Origin of Soft X-Rays in DQ Herculis. *K. Mukai, M. Still, & F. A. Ringwald.* 594, 428 (2003)

See NESS, J.-U., et al. A *Chandra* Low Energy Transmission Grating Spectrometer Observation of V4743 Sagittarii: A Supersoft X-Ray Source and a Violently Variable Light Curve.

X-Ray Variability of the Magnetic Cataclysmic Variable V1432 Aquilae and the Seyfert Galaxy NGC 6814. *K. Mukai, C. Hellier, G. Madejski, J. Patterson, & D. R. Skillman.* 597, 479 (2003)

MUKAI, KOJI. Two Types of X-Ray Spectra in Cataclysmic Variables. *Koji Mukai, A. Kinkhabwala, J. R. Peterson, S. M. Kahn, & F. Paerels.* 586, L77 (2003)

MUKHERJEE, PIA. Galactic Foreground Constraints from the Python V Cosmic Microwave Background Anisotropy Data. *Pia Mukherjee, Kim Coble, Mark Dragovan, Ken Ganga, John Kovac, Bharat Ratra, & Tarun Souradeep.* 592, 692 (2003)

Wavelet Band Powers of the Primordial Power Spectrum from Cosmic Microwave Background Data. *Pia Mukherjee & Yun Wang.* 593, 38 (2003)

COBE DMR–normalized Dark Energy Cosmogony. *Pia Mukherjee, A. J. Banday, Alain Riazuelo, Krzysztof M. Górski, & Bharat Ratra.* 598, 767 (2003)

Direct Wavelet Expansion of the Primordial Power Spectrum. *Pia Mukherjee & Yun Wang.* 598, 779 (2003)

Model-Independent Reconstruction of the Primordial Power Spectrum from *Wilkinson Microwave Anisotropy Probe* Data. *Pia Mukherjee & Yun Wang.* 599, 1 (2003)

MUKHERJEE, R. Search for a Point-Source Counterpart of the Unidentified Gamma-Ray Source TeV J2032+4130 in Cygnus. *R. Mukherjee, J. P. Halpern, E. V. Gotthelf, M. Eracleous, & N. Mirabal.* 589, 487 (2003)

MUKHOPADHYAY, BANIBRATA. Pseudo-Newtonian Potentials to Describe the Temporal Effects on Relativistic Accretion Disks around Rotating Black Holes and Neutron Stars. *Banibrata Mukhopadhyay & Ranjeev Misra.* 582, 347 (2003)

Origin and Interpretation of Kilohertz Quasi-periodic Oscillations from Strange Stars in an X-Ray Binary Systems: Theoretical Hydrodynamical Description. *Banibrata Mukhopadhyay, Subharthi Ray, Jishnu Dey, & Mira Dey.* 584, L83 (2003)

Stability of Accretion Disk around Rotating Black Holes: A Pseudo–General-Relativistic Fluid Dynamical Study. *Banibrata Mukhopadhyay.* 586, 1268 (2003)

MULCHAEY, JOHN S. An X-Ray Atlas of Groups of Galaxies. *John S. Mulchaey, David S. Davis, Richard F. Mushotzky, & David Burstein.* 145, 39 (2003)

Circumnuclear Dust in Nearby Active and Inactive Galaxies. II. Bars, Nuclear Spirals, and the Fueling of Active Galactic Nuclei. *Paul Martini, Michael W. Regan, John S. Mulchaey, & Richard W. Pogge.* 589, 774 (2003)

Circumnuclear Dust in Nearby Active and Inactive Galaxies. I. Data. *Paul Martini, Michael W. Regan, John S. Mulchaey, & Richard W. Pogge.* 146, 353 (2003)

MULLALLY, F. See MUKADEM, ANJUM S., et al. Constraining the Evolution of ZZ Ceti.

MULLAN, D. J. Short-Period Magnetic Fluctuations in *Advanced Composition Explorer* Solar Wind Data: Evidence for Anticorrelation with Alfvén Speed. *D. J. Mullan, C. W. Smith, N. F. Ness, & R. M. Skoug.* 583, 496 (2003)

Onset of Mass Loss in Red Giants: Association with an Evolutionary Event. *D. J. Mullan & J. MacDonald.* 591, 1203 (2003)

Onset of Shear Instability in Rotating Red Giants. *J. MacDonald & D. J. Mullan.* 598, 560 (2003)

MULLER, D. See HALL, T. A., et al. Search for TeV Emissions from Pulsars in Binary Systems.

MULLIS, C. R. *Chandra* X-Ray Analysis of the Massive High-Redshift Galaxy Clusters Cl J1113.1−2615 and Cl J0152.7−1357. *B. J. Maughan, L. R. Jones, H. Ebeling, E. Perlman, P. Rosati, C. Frye, & C. R. Mullis.* 587, 589 (2003)

See VIKHLININ, A., et al. Cosmological Constraints from the Evolution of the Cluster Baryon Mass Function at $z \sim 0.5$.

The 160 Square Degree *ROSAT* Survey: The Revised Catalog of 201 Clusters with Spectroscopic Redshifts. *C. R. Mullis, B. R. McNamara, H. Quintana, A. Vikhlinin, J. P. Henry, I. M. Gioia, A. Hornstrup, W. Forman, & C. Jones.* 594, 154 (2003)

The *ROSAT* North Ecliptic Pole Survey: The Optical Identifications. *I. M. Gioia, J. P. Henry, C. R. Mullis, H. Böhringer, U. G. Briel, W. Voges, & J. P. Huchra.* 149, 29 (2003)

MUNARI, U. See ISRAEL, G. L., et al. Unveiling the Nature of the 321 Second Modulation in RX J0806.3+1527: Near-Simultaneous *Chandra* and Very Large Telescope Observations.

MUNDELL, C. See MCDOWELL, J. C., et al. *Chandra* Observations of Extended X-Ray Emission in Arp 220.

MUNDELL, C. G. The Nuclear Regions of the Seyfert Galaxy NGC 4151: Parsec-Scale H I Absorption and a Remarkable Radio Jet. *C. G. Mundell, J. M. Wrobel, A. Pedlar, & J. F. Gallimore.* 583, 192 (2003)

MUNDT, REINHARD. Natural Coronagraphics Observations of the Eclipsing T Tauri System KH 15D: Evidence of Accretion and Bipolar Outflow in a Weak-Line T Tauri Star. *Catrina M. Hamilton, William Herbst, Reinhard Mundt, Coryn A. L. Bailer-Jones, & Christopher M. Johns-Krull.* 591, L45 (2003)

MUNDY, LEE G. Envelope Emission in Young Stellar Systems: A Subarcsecond Survey of Circumstellar Structure. *Leslie W. Looney, Lee G. Mundy, & W. J. Welch.* 592, 255 (2003)

MUNEER, S. Spectroscopic Studies of the Solar Corona. IV. Physical Properties of Coronal Structure. *Jagdev Singh, Kiyoshi Ichimoto, Takashi Sakurai, & S. Muneer.* 585, 516 (2003)

MUNN, JEFFREY A. See EISENSTEIN, DANIEL J., et al. Average Spectra of Massive Galaxies in the Sloan Digital Sky Survey.

See SZALAY, ALEXANDER S., et al. Karhunen-Loève Estimation of the Power Spectrum Parameters from the Angular Distribution of Galaxies in Early Sloan Digital Sky Survey Data.

See BLANTON, MICHAEL R., et al. The Galaxy Luminosity Function and Luminosity Density at Redshift $z = 0.1$.

See BLANTON, MICHAEL R., et al. The Broadband Optical Properties of Galaxies with Redshifts $0.02 < z < 0.22$.

See SCHMIDT, GARY D., et al. Magnetic White Dwarfs from the Sloan Digital Sky Survey: The First Data Release.

MUNO, M. P. A Deep *Chandra* Catalog of X-Ray Point Sources toward the Galactic Center. *M. P. Muno, F. K. Baganoff, M. W. Bautz, W. N. Brandt, P. S. Broos, E. D. Feigelson, G. P. Garmire, M. R. Morris, G. R. Ricker, & L. K. Townsley.* 589, 225 (2003)

The X-Ray Binary GRS 1741.9−2853 in Outburst and Quiescence. *M. P. Muno, F. K. Baganoff, & J. S. Arabadjis.* 598, 474 (2003)

X-Ray Sources with Periodic Variability in a Deep *Chandra* Image of the Galactic Center. *M. P. Muno, F. K. Baganoff, M. W. Bautz, W. N. Brandt, G. P. Garmire, & G. R. Ricker.* 599, 465 (2003)

MUNO, MICHAEL P. Eddington-limited X-Ray Bursts as Distance Indicators. I. Systematic Trends and Spherical Symmetry in Bursts from 4U 1728−34. *Duncan K. Galloway, Dimitrios Psaltis, Deepto Chakrabarty, & Michael P. Muno.* 590, 999 (2003)

The Energy Dependence of Millisecond Oscillations in Thermonuclear X-Ray Bursts. *Michael P. Muno, Feryal Oezel, & Deepto Chakrabarty.* 595, 1066 (2003)

MUÑOZ, J. A. See RUSIN, D., et al. The Evolution of a Mass-selected Sample of Early-Type Field Galaxies.

The Redshift Distribution of Flat-Spectrum Radio Sources. *J. A. Muñoz, E. E. Falco, C. S. Kochanek, J. Lehár, & E. Mediavilla.* 594, 684 (2003)

MUÑOZ, JOSÉ. See COLLEY, WESLEY N., et al. Around-the-Clock Observations of the Q9057+561A,B Gravitationally Lensed Quasar. II. Results for the Second Observing Season.

MUÑOZ, O. Irregular Particles in Comet C/1995 O1 Hale-Bopp Inferred from Its Mid-Infrared Spectrum. *F. Moreno, O. Muñoz, R. Vilaplana, & A. Molina.* 595, 522 (2003)

MUÑOZ-TUÑÓN, C. On the Rapidly Cooling Interior of Supergalactic Winds. *S. Silich, G. Tenorio-Tagle, & C. Muñoz-Tuñón.* 590, 791 (2003)

MUÑOZ-TUÑÓN, CASIANA. Deep Near-Infrared Mapping of Young and Old Stars in Blue Compact Dwarf Galaxies. *Luz M. Cairós, Nicola Caon, Polychronis Papaderos, Kai Noeske, Jose M. Vílchez, Begoña García Lorenzo, & Casiana Muñoz-Tuñón.* 593, 312 (2003)

Supergalactic Winds Driven by Multiple Super–Star Clusters. *Guillermo Tenorio-Tagle, Sergiy Silich, & Casiana Muñoz-Tuñon.* 597, 279 (2003)

MUNSHI, DIPAK. How Sensitive Are Weak Lensing Statistics to Dark Energy Content? *Dipak Munshi & Yun Wang.* 583, 566 (2003)

MURAISHI, H. See ENOMOTO, R., et al. Search for TeV Gamma Rays from SN 1987A in 2001.

MURAKAMI, K. See WATANABE, K., et al. Solar Neutron Event in Association with a Large Solar Flare on 2000 November 24.

MURAKAMI, T. The Quiescent Counterpart of the Soft Gamma-Ray Repeater SGR 0526−66. *S. R. Kulkarni, D. L. Kaplan, H. L. Marshall, D. A. Frail, T. Murakami, & D. Yonetoku.* 585, 948 (2003)

MURAKI, Y. See SUMI, T., et al. Microlensing Optical Depth toward the Galactic Bulge from Microlensing Observations during 2000 with Difference Image Analysis.

See ENOMOTO, R., et al. Search for TeV Gamma Rays from SN 1987A in 2001.

See WATANABE, K., et al. Solar Neutron Event in Association with a Large Solar Flare on 2000 November 24.

MURANTE, GIUSEPPE. Mass of Clusters in Simulations. *Andrea V. Macciò, Giuseppe Murante, & Silvio P. Bonometto.* 588, 35 (2003)

MURATA, YASUHIRO. See IMAI, HIROSHI, et al. The Three-dimensional Kinematics of Water Masers around the Semiregular Variable RT Virginis.

MURAYAMA, TAKASHI. See TANIGUCHI, YOSHIAKI, et al. The Discovery of a Very Narrow Line Star-forming Object at a Redshift of 5.66.

See FUJITA, SHINOBU S., et al. The Hα Luminosity Function and Star Formation Rate at $z \approx 0.24$ Based on Subaru Deep Imaging Data.

See OHYAMA, YOUICHI, et al. On the Origin of Lyα Blobs at High Redshift: Kinematic Evidence of a Hyperwind Galaxy at $z = 3.1$.

MURPHY, B. W. The Dynamics of M15: Observations of the Velocity Dispersion Profile and Fokker-Planck Models: Addendum (ApJ, 481, 267 [1997]). *J. D. Dull, H. N. Cohn, P. M. Lugger, B. W. Murphy, P. O. Seitzer, P. J. Callanan, R. G. M. Rutten, & P. A. Charles.* 585, 598 (2003) (Orig. paper in 481, 267 (1997))

MURPHY, D. C. Infrared Photometry of Starless Dense Cores. *D. C. Murphy & P. C. Myers.* 591, 1034 (2003)

MURPHY, E. M. See WAKKER, B. P., et al. The *Far Ultraviolet Spectroscopic Explorer* Survey of O VI Absorption in and near the Galaxy.

Probing O VI Emission in the Halos of Edge-On Spiral Galaxies. *B. Otte, E. M. Murphy, J. C. Howk, Q. D. Wang, W. R. Oegerle, & K. R. Sembach.* 591, 821 (2003)

MURPHY, R. J. See LIN, R. P., et al. *RHESSI* Observations of Particle Acceleration and Energy Release in an Intense Solar Gamma-Ray Line Flare.

High-Resolution Spectroscopy of Gamma-Ray Lines from the X-Class Solar Flare of 2002 July 23. *D. M. Smith, G. H. Share, R. J. Murphy, R. A. Schwartz, A. Y. Shih, & R. P. Lin.* 595, L81 (2003)

Physical Implications of *RHESSI* Neutron-Capture Line Measurements. *R. J. Murphy, G. H. Share, X.-M. Hua, R. P. Lin, D. M. Smith, & R. A. Schwartz.* 595, L93 (2003)

MURPHY, RONALD J. See SHARE, GERALD H., et al. High-Resolution Observation of the Solar Positron-Electron Annihilation Line.

Directionality of Flare-accelerated α-Particles at the Sun. *Gerald H. Share, Ronald J. Murphy, David M. Smith, Robert P. Lin, Brian R. Dennis, & Richard A. Schwartz.* 595, L89 (2003)

MURPHY, THOMAS. See SZKODY, PAULA, et al. Two Rare Magnetic Cataclysmic Variables with Extreme Cyclotron Features Identified in the Sloan Digital Sky Survey.

MURRAY, N. Planet Migration and Binary Companions: The Case of HD 80606b. *Y. Wu & N. Murray.* 589, 605 (2003)

MURRAY, NORMAN. Halting Planet Migration by Photoevaporation from the Central Source. *Isamu Matsuyama, Doug Johnstone, & Norman Murray.* 585, L143 (2003)

MURRAY, S. D. Star Formation and Feedback in Dwarf Galaxies. *Shawfeng Dong, D. N. C. Lin, & S. D. Murray.* 596, 930 (2003)

MURRAY, S. S. *Chandra* X-Ray Observation of the Orion Nebula Cluster. I. Detection, Identification, and Determination of X-Ray Luminosities. *E. Flaccomio, F. Damiani, G. Micela, S. Sciortino, F. R. Harnden, Jr., S. S. Murray, & S. J. Wolk.* 582, 382 (2003)

Chandra X-Ray Observation of the Orion Nebula Cluster. II. Relationship between X-Ray Activity Indicators and Stellar Parameters. *E. Flaccomio, F. Damiani, G. Micela, S. Sciortino, F. R. Harnden, Jr., S. S. Murray, & S. J. Wolk.* 582, 398 (2003)

A New Technique for Determining the Number of X-Ray Sources per Flux Density Interval. *A. T. Kenter & S. S. Murray.* 584, 1016 (2003)

Chandra Observations of the Galaxy Cluster A478: The Interaction of Hot Gas and Radio Plasma in the Core, and an Improved Determination of the Compton y-Parameter. *M. Sun, C. Jones, S. S. Murray, S. W. Allen, A. C. Fabian, & A. C. Edge.* 587, 619 (2003)

Chandra Observations of the Young Open Cluster NGC 2516. *F. Damiani, E. Flaccomio, G. Micela, S. Sciortino, F. R. Harnden, Jr., S. S. Murray, S. J. Wolk, & R. D. Jeffries.* 588, 1009 (2003)

X-Ray Emission from the Hot Interstellar Medium and Southwest Radio Lobe of the Nearby Radio Galaxy Centaurus A. *R. P. Kraft, S. E. Vázquez, W. R. Forman, C. Jones, S. S. Murray, M. J. Hardcastle, D. M. Worrall, & E. Churazov.* 592, 129 (2003)

Radio and X-Ray Observations of the Jet in Centaurus A. *M. J. Hardcastle, D. M. Worrall, R. P. Kraft, W. R. Forman, C. Jones, & S. S. Murray.* 593, 169 (2003)

Chandra Observations of the X-Ray–luminous Star-forming Galaxy Merger Arp 299. *A. Zezas, M. J. Ward, & S. S. Murray.* 594, L31 (2003)

Chandra Observation of 3C 212: A New Look at the X-Ray and Ultraviolet Absorbers. *T. L. Aldcroft, A. Siemiginowska, M. Elvis, S. Mathur, F. Nicastro, & S. S. Murray.* 597, 751 (2003)

Chandra Observations of the NGC 1550 Galaxy Group: Implication for the Temperature and Entropy Profiles of 1 keV Galaxy Groups. *M. Sun, W. Forman, A. Vikhlinin, A. Hornstrup, C. Jones, & S. S. Murray.* 598, 250 (2003)

A *Chandra* X-Ray Study of the Globular Cluster M80. *C. O. Heinke, J. E. Grindlay, P. M. Lugger, H. N. Cohn, P. D. Edmonds, D. A. Lloyd, & S. S. Murray.* 598, 516 (2003)

X-Ray Point Sources in the Sombrero Galaxy: Supersoft Sources, the Globular Cluster/Low-Mass X-Ray Binary Connection, and an Overview. *R. DiStefano, A. K. H. Kong, M. L. VanDalfsen, W. E. Harris, S. S. Murray, & K. M. Delain.* 599, 1067 (2003)

MURRAY, STEPHEN D. Supernova Enrichment of Dwarf Spheroidal Galaxies. *P. Chris Fragile, Stephen D. Murray, Peter Anninos, & Douglas N. C. Lin.* 590, 778 (2003)

Cosmos: A Radiation-Chemo-Hydrodynamics Code for Astrophysical Problems. *Peter Anninos, P. Chris Fragile, & Stephen D. Murray.* 147, 177 (2003)

Roche Lobe Overflow from Dwarf Stellar Systems. *Stephen D. Murray, Shawfeng Dong, & Douglas N. C. Lin.* 593, 301 (2003)

MURRAY, STEPHEN S. Multiwavelength Spectrum of the Black Hole XTE J1118+480 in Quiescence. *Jeffrey E. McClintock, Ramesh Narayan, Michael R. Garcia, Jerome A. Orosz, Ronald A. Remillard, & Stephen S. Murray.* 593, 435 (2003)

See SIEMIGINOWSKA, ANETA, et al. *Chandra* Discovery of an X-Ray Jet and Extended X-Ray Structure in $z = 0.63$ Quasar B2 0738+313.

MUSAEV, F. See LOBEL, A., et al. High-Resolution Spectroscopy of the Yellow Hypergiant ρ Cassiopeiae from 1993 through the Outburst of 2000–2001.

MUSHOTZKY, R. The *XMM-Newton* View of the Nucleus of NGC 4261. *R. M. Sambruna, M. Gliozzi, M. Eracleous, W. N. Brandt, & R. Mushotzky.* 586, L37 (2003)

MUSHOTZKY, R. F. Imaging Large-Scale Structure in the X-Ray Sky. *Yuxuan Yang, R. F. Mushotzky, A. J. Barger, L. L. Cowie, D. B. Sanders, & A. T. Steffen.* 585, L85 (2003)

Elemental Abundances in NGC 3516. *T. J. Turner, S. B. Kraemer, R. F. Mushotzky, I. M. George, & J. R. Gabel.* 594, 128 (2003)

The Changing Active Galactic Nucleus Population. *A. T. Steffen, A. J. Barger, L. L. Cowie, R. F. Mushotzky, & Y. Yang.* 596, L23 (2003)

MUSHOTZKY, RICHARD. A Warm/Hot Intergalactic Medium toward 3C 120? *Barry McKernan, Tahir Yaqoob, Richard Mushotzky, Ian M. George, & T. Jane Turner.* 598, L83 (2003)

MUSHOTZKY, RICHARD F. See GABEL, JACK R., et al. The Ionized Gas and Nuclear Environment in NGC 3783. II. Averaged *Hubble Space Telescope*/STIS and *Far Ultraviolet Spectroscopic Explorer* Spectra.

An X-Ray Atlas of Groups of Galaxies. *John S. Mulchaey, David S. Davis, Richard F. Mushotzky, & David Burstein.* 145, 39 (2003)

Discovery of X-Ray Quasi-periodic Oscillations from an Ultraluminous X-Ray Source in M82: Evidence against Beaming. *Tod E. Strohmayer & Richard F. Mushotzky.* 586, L61 (2003)

See GABEL, JACK R., et al. The Ionized Gas and Nuclear Environment in NGC 3783. III. Detection of a Decreasing Radial Velocity in an Intrinsic Ultraviolet Absorber.

Chandra Observations of Point Sources in A2255. *David S. Davis, Neal A. Miller, & Richard F. Mushotzky.* 597, 202 (2003)

MUSIELAK, Z. E. *Chandra* Observations of Magnetic White Dwarfs and Their Theoretical Implications. *Z. E. Musielak, M. Noble, J. G. Porter, & D. E. Winget.* 593, 481 (2003)

MUSLIMOV, ALEX G. Extended Acceleration in Slot Gaps and Pulsar High-Energy Emission. *Alex G. Muslimov & Alice K. Harding.* 588, 430 (2003)

MUTCHLER, MAX. Space Telescope Imaging Spectrograph Slitless Observations of Small Magellanic Cloud Planetary Nebulae: A Study on Morphology, Emission-Line Intensity, and Evolution. *Letizia Stanghellini, Richard A. Shaw, Bruce Balick, Max Mutchler, J. Chris Blades, & Eva Villaver.* 596, 997 (2003)

Hubble Space Telescope Observations of Three Very Young Star Clusters in the Small Magellanic Cloud. *Letizia Stanghellini, Eva Villaver, Richard A. Shaw, & Max Mutchler.* 598, 1000 (2003)

MUTHU, C. Multiple Molecular H_2 Outflows in AFGL 618. *P. Cox, P. J. Huggins, J.-P. Maillard, C. Muthu, R. Bachiller, & T. Forveille.* 586, L87 (2003)

MUTSCHKE, H. New Laboratory Spectra of Isolated β-SiC Nanoparticles: Comparison with Spectra Taken by the *Infrared Space Observatory*. *D. Clément, H. Mutschke, R. Klein, & Th. Henning.* 594, 642 (2003)

Infrared Properties of Solid Titanium Oxides: Exploring Potential Primary Dust Condensates. *T. Posch, F. Kerschbaum, D. Fabian, H. Mutschke, J. Dorschner, A. Tamanai, & T. Henning.* 149, 437 (2003)

MUZEROLLE, JAMES. A Comprehensive Study of the L1551 IRS 5 Binary System. *Mayra Osorio, Paolo D'Alessio, James Muzerolle, Nuria Calvet, & Lee Hartmann.* 586, 1148 (2003)

Accretion in Young Stellar/Substellar Objects. *James Muzerolle, Lynne Hillenbrand, Nuria Calvet, César Briceño, & Lee Hartmann.* 592, 266 (2003)

Indications for Grain Growth and Mass Decrease in Cold Dust Disks around Classical T Tauri Stars in the MBM 12 Young Association. *Michiel R. Hogerheijde, Doug Johnstone, Isamu Matsuyama, Ray Jayawardhana, & James Muzerolle.* 593, L101 (2003)

Unveiling the Inner Disk Structure of T Tauri Stars. *James Muzerolle, Nuria Calvet, Lee Hartmann, & Paola D'Alessio.* 597, L149 (2003)

MYERS, P. C. Precise Millimeter-Wave Laboratory Frequences for CS and $C^{34}S$. *C. A. Gottlieb, P. C. Myers, & P. Thaddeus.* 588, 655 (2003)

Infrared Photometry of Starless Dense Cores. *D. C. Murphy & P. C. Myers.* 591, 1034 (2003)

MYERS, PHILIP C. Inner Structures of Protostellar Collapse Candidate B335 Derived from Millimeter-Wave Interferometry. *Daniel W. A. Harvey, David J. Wilner, Philip C. Myers, Mario Tafalla, & Diego Mardones.* 583, 809 (2003)

Disk Properties and Density Structure of the Star-Forming Dense Core B335. *Daniel W. A. Harvey, David J. Wilner, Philip C. Myers, & Mario Tafalla.* 596, 383 (2003)

Inner Structure of Starless Core L694-2 Derived from Millimeter-Wave Interferometry. *Daniel W. A. Harvey, David J. Wilner, Philip C. Myers, & Mario Tafalla.* 597, 424 (2003)

Envelope Structure of Starless Core L694-2 Derived from a Near-Infrared Extinction Map. *Daniel W. A. Harvey, David J. Wilner, Charles J. Lada, Philip C. Myers, & Joao F. Alves.* 598, 1112 (2003)

MYERS, S. T. See MASON, B. S., et al. The Anisotropy of the Microwave Background to $l = 3500$: Deep Field Observatons with the Cosmic Background Imager.

See PEARSON, T. J., et al. The Anisotropy of the Microwave Background to $l = 3500$: Mosaic Observations with the Cosmic Background Imager.

A Fast Gridded Method for the Estimation of the Power Spectrum of the Cosmic Microwave Background from Interferometer Data with Application to the Cosmic Background Imager. *S. T. Myers, C. R. Contaldi, J. R. Bond, U.-L. Pen, D. Pogosyan, S. Prunet, J. L. Sievers, B. S. Mason, T. J. Pearson, A. C. S. Readhead, & M. C. Shepherd.* 591, 575 (2003)

See SIEVERS, J. L., et al. Cosmological Parameters from Cosmic Background Imager Observations and Comparisons with BOOMERANG, DASI, and MAXIMA.

NAAB, THORSTEN. Statistical Properties of Collisionless Equal- and Unequal-Mass Merger Remnants of Disk Galaxies. *Thorsten Naab & Andreas Burkert.* 597, 893 (2003)

NADALIN, I. Intrinsic Properties of the Young Stellar Object SU Aurigae. *L. E. DeWarf, J. F. Sepinsky, E. F. Guinan, I. Ribas, & I. Nadalin.* 590, 357 (2003)

NAGAI, DAISUKE. See LAROQUE, SAMUEL J., et al. Sunyaev-Zeldovich Effect Imaging of MACS Galaxy Clusters at $z > 0.5$.

Cold Fronts in Cold Dark Matter Clusters. *Daisuke Nagai & Andrey V. Kravtsov.* 587, 514 (2003)

Effect of Internal Flows on Sunyaev-Zeldovich Measurements of Cluster Peculiar Velocities. *Daisuke Nagai, Andrey V. Kravtsov, & Arthur Kosowsky.* 587, 524 (2003)

NAGAI, T. N. See HOLDER, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.

See DE LA CALLE PÉREZ, I., et al. Search for High-Energy Gamma Rays from an X-Ray–Selected Blazar Sample.

NAGAMINE, KENTARO. The Probability Distribution Function of Light in the Universe: Results from Hydrodynamic Simulations. *Jeremiah P. Ostriker, Kentaro Nagamine, Renyue Cen, & Masataka Fukugita.* 597, 1 (2003)

NAGAO, TOHRU. See TANIGUCHI, YOSHIAKI, et al. The Discovery of a Very Narrow Line Star-forming Object at a Redshift of 5.66.
See FUJITA, SHINOBU S., et al. The Hα Luminosity Function and Star Formation Rate at $z \approx 0.24$ Based on Subaru Deep Imaging Data.
See OHYAMA, YOUICHI, et al. On the Origin of Lyα Blobs at High Redshift: Kinematic Evidence of a Hyperwind Galaxy at $z = 3.1$.

NAGAR, N. M. Early Star Formation Traced by the Highest Redshift Quasars. *R. Maiolino, Y. Juarez, R. Mujica, N. M. Nagar, & E. Oliva.* 596, L155 (2003)

NAGAR, NEIL M. See STORCHI-BERGMANN, THAISA, et al. Evolution of the Nuclear Accretion Disk Emission in NGC 1097: Getting Closer to the Black Hole.

NAGASAWA, M. Eccentricity Evolution of Extrasolar Multiple Planetary Systems Due to the Depletion of Nascent Protostellar Disks. *M. Nagasawa, D. N. C. Lin, & S. Ida.* 586, 1374 (2003)

NAGASE, FUMIAKI. See WATANABE, SHIN, et al. Detection of a Fully Resolved Compton Shoulder of the Iron Kα Line in the *Chandra* X-Ray Spectrum of GX 301-2.

NAGASHIMA, CHIE. See JIANG, ZHIBO, et al. A Near-Infrared Study of the Star-Forming Region S269.

NAGASHIMA, MASAHIRO. Environmental Effects on Evolution of Cluster Galaxies in a Λ-dominated Cold Dark Matter Universe. *Takashi Okamoto & Masahiro Nagashima.* 587, 500 (2003)

NAGATA, SHIN'ICHI. Spatial and Temporal Properties of Hot and Cool Coronal Loops. *Shin'ichi Nagata, Hirohisa Hara, Ryouhei Kano, Ken Kobayashi, Taro Sakao, Toshifumi Shimizu, Saku Tsuneta, Tsuyoshi Yoshida, & Joseph B. Gurman.* 590, 1095 (2003)

NAGATA, TETSUYA. Simultaneous Optical and Near-Infrared Spectropolorimetry of Type 2 Seyfert Galaxies. *Makoto Watanabe, Tetsuya Nagata, Shuji Sato, Hidehiko Nakaya, & J. H. Hough.* 591, 714 (2003)
See JIANG, ZHIBO, et al. A Near-Infrared Study of the Star-Forming Region S269.

NAGATAKI, S. Explosive Nucleosynthesis Associated with Formation of Jet-induced Gamma-Ray Bursts in Massive Stars. *S. Nagataki, A. Mizuta, S. Yamada, H. Takabe, & K. Sato.* 596, 401 (2003)

NAGATAKI, SHIGEHIRO. Small-Scale Clustering in Isotropic Arrival Distribution of Ultra–High-Energy Cosmic Rays and Implications for Their Source Candidates. *Hiroyuki Yoshiguchi, Shigehiro Nagataki, Sin-ya Tsubaki, & Katsuhiko Sato.* 586, 1211 (2003)
Arrival Distribution of Ultra–High-Energy Cosmic Rays: Prospects for the Future. *Hiroyuki Yoshiguchi, Shigehiro Nagataki, & Katsuhiko Sato.* 592, 311 (2003)
A New Method for Calculating Arrival Distribution of Ultra–High-Energy Cosmic Rays above 10^{19} eV with Modifications by the Galactic Magnetic Field. *Hiroyuki Yoshiguchi, Shigehiro Nagataki, & Katsuhiko Sato.* 596, 1044 (2003)

NAGAYAMA, TAKAHIRO. See JIANG, ZHIBO, et al. A Near-Infrared Study of the Star-Forming Region S269.

NAGHIGHIPOUR, NADER. On Pressure Gradients and Rapid Migration of Solids in a Nonuniform Solar Nebula. *Nader Naghighipour & Alan P. Boss.* 583, 996 (2003)

NAHAR, S. Measurements and Calculations of Photoionization Cross Sections of Multiply Charged Ions in Ground and Metastable States along the Isonuclear Series of Oxygen: O^{2+} to O^{4+}. *J.-P. Champeaux, J.-M. Bizau, D. Cubaynes, C. Blancard, S. Nahar, D. Hitz, J. Bruneau, & F. J. Wuilleumier.* 148, 583 (2003)

NAHAR, S. N. See AGUILAR, A., et al. Absolute Photoionization Cross Section Measurements of O II Ions from 29.7 to 46.2 eV.

NAHAR, SULTANA N. Electron-Ion Recombination Rate Coefficients and Photoionization Cross Sections for Astrophysically Abundant Elements. VII. Relativistic Calculations for O VI and O VII for Ultraviolet and X-Ray Modeling. *Sultana N. Nahar & Anil K. Pradhan.* 149, 237 (2003)

NAIK, S. On the Origin of the Various Types of Radio Emission in GRS 1915+105. *S. V. Vadawale, A. R. Rao, S. Naik, J. S. Yadav, C. H. Ishwara-Chandra, A. Pramesh Rao, & G. G. Pooley.* 597, 1023 (2003)

NAIR, PREETHI. A New Approach to Galaxy Morphology. I. Analysis of the Sloan Digital Sky Survey Early Data Release. *Roberto G. Abraham, Sidney van den Bergh, & Preethi Nair.* 588, 218 (2003)

NAITO, T. See ENOMOTO, R., et al. Search for TeV Gamma Rays from SN 1987A in 2001.

NAJITA, JOAN. A Survey for Circumstellar Disks around Young Substellar Objects. *Michael C. Liu, Joan Najita, & Alan T. Tokunaga.* 585, 372 (2003)
Gas in the Terrestrial Planet Region of Disks: CO Fundamental Emission from T Tauri Stars. *Joan Najita, John S. Carr, & Robert D. Mathieu.* 589, 931 (2003)

NAKADA, Y. Discovery of Dust Trail of *STARDUST* Comet Sample Return Mission Target: 81P/Wild 2. *M. Ishiguro, S. M. Kwon, Y. Sarugaku, S. Hasegawa, F. Usui, S. Nishiura, Y. Nakada, & H. Yano.* 589, L101 (2003)
See URATA, Y., et al. Multiband Optical Follow-up Observations of GRB 020813 at the Kiso and Bisei Observatories.

NAKAGAWA, TAKAO. X-Ray Evidence of a Buried Active Galactic Nucleus in UGC 5101. *Masatoshi Imanishi, Yuichi Terashima, Naohisa Anabuki, & Takao Nakagawa.* 596, L167 (2003)

NAKAI, HIROSHI. The Librating Companions in HD 37124, HD 12661, HD 82943, 47 Ursa Majoris, and GJ 876: Alignment or Antialignment? *Jianghui Ji, Lin Liu, Hiroshi Kinoshita, Jilin Zhou, Hiroshi Nakai, & Guangyu Li.* 591, L57 (2003)

NAKAJIMA, TADASHI. Transition from L to T Dwarfs of the Color-Magnitude Diagram. *Takashi Tsuji & Tadashi Nakajima.* 585, L151 (2003)

NAKAJIMA, YASUSHI. See JIANG, ZHIBO, et al. A Near-Infrared Study of the Star-Forming Region S269.

NAKAKUBO-MARIMOTO, K. Variation of X-Ray Bright Point Number over the Solar Activity Cycle. *H. Hara & K. Nakakubo-Marimoto.* 589, 1062 (2003)

NAKAMOTO, TAISHI. A Spectrophotometric Method to Determine the Inclination of Class I Objects. *Takeshi Nakazato, Taishi Nakamoto, & Masayuki Umemura.* 583, 322 (2003)

NAKAMURA, FUMITAKA. Fragmentation of Magnetically Subcritical Clouds into Multiple Supercritical Cores and the Formation of Small Stellar Groups: Erratum (ApJ, 578, 256 [2002]). *Zhi-Yun Li & Fumitaka Nakamura.* 583, 1063 (2003) (Orig. paper in 578, 256 (2002))
Binary and Multiple Star Formation in Magnetic Clouds: Bar Growth and Fragmentation. *Fumitaka Nakamura & Zhi-Yun Li.* 594, 363 (2003)

NAKAMURA, OSAMU. See EISENSTEIN, DANIEL J., et al. Average Spectra of Massive Galaxies in the Sloan Digital Sky Survey.

NAKAMURA, RYOSUKE. Saturated Hydrocarbons in Comet 153P/Ikeya-Zhang: Ethane, Methane, and Monodeuterio-Methane. *Hideyo Kawakita, Jun-ichi Watanabe, Daisuke Kinoshita, Masateru Ishiguro, & Ryosuke Nakamura.* 590, 573 (2003)

NAKAMURA, T. See SUMI, T., et al. Microlensing Optical Depth toward the Galactic Bulge from Microlensing Observations during 2000 with Difference Image Analysis.

NAKAMURA, TAKASHI. Delayed Flashes from Counterjets of Gamma-Ray Bursts. *Ryo Yamazaki, Kunihito Ioka, & Takashi Nakamura.* 591, 283 (2003)
Cosmological X-Ray Flashes in the Off-Axis Jet Model. *Ryo Yamazaki, Kunihito Ioka, & Takashi Nakamura.* 593, 941 (2003)
An Off-Axis Jet Model for GRB 980425 and Low-Energy Gamma-Ray Bursts. *Ryo Yamazaki, Daisuke Yonetoku, & Takashi Nakamura.* 594, L79 (2003)
Wave Effects in the Gravitational Lensing of Gravitational Waves from Chirping Binaries. *Ryuichi Takahashi & Takashi Nakamura.* 595, 1039 (2003)
The Decihertz Laser Interferometer Can Determine the Position of the Coalescing Binary Neutron Stars within an Arcminute a Week before the Final Merging Event to the Black Hole. *Ryuichi Takahashi & Takashi Nakamura.* 596, L231 (2003)

NAKANISHI, KOUICHIRO. See ITOH, YOICHI, et al. Interferometric Observations of the T Tauri Stars in the MBM 12 Cloud.
See OHTA, KOUJI, et al. Optical Identification of the *ASCA* Lynx Deep Survey: An Association of Quasi-Stellar Objects and a Supercluster at $z = 1.3$?

NAKANO, HIDEYUKI. Evaporation of Interstellar Organic Materials in the Solar Nebula. *Hideyuki Nakano, Akira Kouchi, Shogo Tachibana, & Akira Tsuchiyama.* 592, 1252 (2003)

NAKAR, E. Modeling Fluctuations in the Gamma-Ray Burst Afterglow Light Curves. *E. Nakar & T. Piran.* 598, 400 (2003)

NAKASATO, NAOHITO. Three-dimensional Simulations of the Chemical and Dynamical Evolution of the Galactic Bulge. *Naohito Nakasato & Ken'ichi Nomoto.* 588, 842 (2003)

NAKASE, T. See ENOMOTO, R., et al. Search for TeV Gamma Rays from SN 1987A in 2001.

NAKATA, F. See SHIMASAKU, K., et al. Subaru Deep Survey. IV. Discovery of a Large-Scale Structure at Redshift ≃5.

The Transformation of Galaxies within the Large-Scale Structure around a $z = 0.41$ Cluster: Erratum (ApJ, 562, L9 [2001]). *T. Kodama, Ian Smail, F. Nakata, S. Okamura, & R. G. Bower.* 591, L169 (2003) (Orig. paper in 562, L9 (2001))

NAKATA, FUMIAKI. See OUCHI, MASAMI, et al. Subaru Deep Survey. II. Luminosity Functions and Clustering Properties of Lyα Emitters at $z = 4.86$ in the Subaru Deep Field.

See KOMIYAMA, YUTAKA, et al. Discovery of Latent Star Formation in the Extended H I Gas around the Local Group Dwarf Irregular Galaxy NGC 6822.

See HAMANA, TAKASHI, et al. Cosmic Shear Statistics in the Suprime-Cam 2.1 Square Degree Field: Constraints on Ω_m and Σ_8.

NAKAYA, HIDEHIKO. Simultaneous Optical and Near-Infrared Spectropolorimetry of Type 2 Seyfert Galaxies. *Makoto Watanabe, Tetsuya Nagata, Shuji Sato, Hidehiko Nakaya, & J. H. Hough.* 591, 714 (2003)

NAKAZATO, TAKESHI. A Spectrophotometric Method to Determine the Inclination of Class I Objects. *Takeshi Nakazato, Taishi Nakamoto, & Masayuki Umemura.* 583, 322 (2003)

NANCE, C. See COLAVITA, M., et al. Observations of DG Tauri with the Keck Interferometer.

NANDI, A. Possible Photometric Evidence of Ejection of Bullet-like Features in the Relativistic Jet Source SS 433. *Sandip K. Chakrabarti, S. Pal, A. Nandi, B. G. Anandarao, & Soumen Mondal.* 595, L45 (2003)

NANDRA, K. SHEEP: The Search for the High-Energy Extragalactic Population. *K. Nandra, I. Georgantopoulos, A. Ptak, & T. J. Turner.* 582, 615 (2003)

See MARKOWITZ, A., et al. X-Ray Fluctuation Power Spectral Densities of Seyfert 1 Galaxies.

NANDRA, KIRPAL. See GABEL, JACK R., et al. The Ionized Gas and Nuclear Environment in NGC 3783. II. Averaged *Hubble Space Telescope*/STIS and *Far Ultraviolet Spectroscopic Explorer* Spectra.

See GABEL, JACK R., et al. The Ionized Gas and Nuclear Environment in NGC 3783. III. Detection of a Decreasing Radial Velocity in an Intrinsic Ultraviolet Absorber.

See NETZER, HAGAI, et al. The Ionized Gas and Nuclear Environment in NGC 3783. IV. Variability and Modeling of the 900 Kilosecond *Chandra* Spectrum.

NANDY, DIBYENDU. Evidence That a Deep Meridional Flow Sets the Sunspot Cycle Period. *David H. Hathaway, Dibyendu Nandy, Robert M. Wilson, & Edwin J. Reichmann.* 589, 665 (2003)

Detection of a Taylor-like Plasma Relaxation Process in the Sun. *Dibyendu Nandy, Michael Hahn, Richard C. Canfield, & Dana W. Longcope.* 597, L73 (2003)

NANJO, H. See AMENOMORI, M., et al. Multi-TeV Gamma-Ray Flares from Markarian 421 in 2000 and 2001 Observed with the Tibet Air Shower Array.

NAPOLITANO, NICOLA R. Intracluster Stellar Population Properties from *N*-Body Cosmological Simulations. I. Constraints at $z = 0$. *Nicola R. Napolitano, Maurilio Pannella, Magda Arnaboldi, Ortwin Gerhard, J. Alfonso L. Aguerri, Kenneth C. Freeman, Massimo Capaccioli, Sebastiano Ghigna, Fabio Governato, Tom Quinn, & Joachim Stadel.* 594, 172 (2003)

NARAYAN, RAMESH. Models of Galaxy Clusters with Thermal Conduction. *Nadia L. Zakamska & Ramesh Narayan.* 582, 162 (2003)

X-Ray Lines from Gamma-Ray Bursts. *Pawan Kumar & Ramesh Narayan.* 584, 895 (2003)

Three-dimensional Magnetohydrodynamic Simulations of Radiatively Inefficient Accretion Flows. *Igor V. Igumenshchev, Ramesh Narayan, & Marek A. Abramowicz.* 592, 1042 (2003)

Multiwavelength Spectrum of the Black Hole XTE J1118+480 in Quiescence. *Jeffrey E. McClintock, Ramesh Narayan, Michael R. Garcia, Jerome A. Orosz, Ronald A. Remillard, & Stephen S. Murray.* 593, 435 (2003)

Nonaxisymmetric g-Mode and p-Mode Instability in a Hydrodynamic Thin Accretion Disk. *Li-Xin Li, Jeremy Goodman, & Ramesh Narayan.* 593, 980 (2003)

Bondi Accretion and the Problem of the Missing Isolated Neutron Stars. *Rosalba Perna, Ramesh Narayan, George Rybicki, Luigi Stella, & Aldo Treves.* 594, 936 (2003)

Thermal Instability in Clusters of Galaxies with Conduction. *Woong-Tae Kim & Ramesh Narayan.* 596, 889 (2003)

Turbulent Mixing in Clusters of Galaxies. *Woong-Tae Kim & Ramesh Narayan.* 596, L139 (2003)

Nonthermal Electrons in Radiatively Inefficient Accretion Flow Models of Sagittarius A*. *Feng Yuan, Eliot Quataert, & Ramesh Narayan.* 598, 301 (2003)

Thermonuclear Stability of Material Accreting onto a Neutron Star. *Ramesh Narayan & Jeremy S. Heyl.* 599, 419 (2003)

NARAYANAN, VIJAY. See SZKODY, PAULA, et al. Two Rare Magnetic Cataclysmic Variables with Extreme Cyclotron Features Identified in the Sloan Digital Sky Survey.

See SZALAY, ALEXANDER S., et al. Karhunen-Loève Estimation of the Power Spectrum Parameters from the Angular Distribution of Galaxies in Early Sloan Digital Sky Survey Data.

NARITA, T. X-Ray Dip Monitoring of XB 1916−053. *T. Narita, J. E. Grindlay, P. F. Bloser, & Y. Chou.* 593, 1007 (2003)

NARLIKAR, J. V. Inhomogeneities in the Microwave Background Radiation Interpreted within the Framework of the Quasi–Steady State Cosmology. *J. V. Narlikar, R. G. Vishwakarma, Amir Hajian, Tarun Souradeep, G. Burbridge, & F. Hoyle.* 585, 1 (2003)

NASELSKY, I. P. Ionization History of the Cosmic Plasma in the Light of the Recent Cosmic Background Imager and Future *Planck* Data. *A. G. Doroshkevich, I. P. Naselsky, P. D. Naselsky, & I. D. Novikov.* 586, 709 (2003)

NASELSKY, P. D. Ionization History of the Cosmic Plasma in the Light of the Recent Cosmic Background Imager and Future *Planck* Data. *A. G. Doroshkevich, I. P. Naselsky, P. D. Naselsky, & I. D. Novikov.* 586, 709 (2003)

NASELSKY, PAVEL D. Non-Gaussianity of the Derived Maps from the First-Year *Wilkinson Microwave Anisotropy Probe* Data. *Lung-Yih Chiang, Pavel D. Naselsky, Oleg V. Verkhodanov, & Michael J. Way.* 590, L65 (2003)

Phase Cross-Correlation of the *Wilkinson Microwave Anisotropy Probe* Internal Linear Combination Map and Foregrounds. *Pavel D. Naselsky, Andrey G. Doroshkevich, & Oleg V. Verkhodanov.* 599, L53 (2003)

NASRAOUI, K. The Effect of Background Subtraction on the Temperature of EIT Coronal Loops. *J. T. Schmelz, J. E. Beene, K. Nasraoui, H. T. Blevins, P. C. H. Martens, & J. W. Cirtain.* 599, 604 (2003)

NATARAJAN, PRIYAMVADA. A Wide-Field *Hubble Space Telescope* Study of the Cluster Cl 0024+16 at $z = 0.4$. I. Morphological Distributions to 5 Mpc Radius. *Tommaso Treu, Richard S. Ellis, Jean-Paul Kneib, Alan Dressler, Ian Smail, Oliver Czoske, Augustus Oemler, & Priyamvada Natarajan.* 591, 53 (2003)

Lensing Effects of Misaligned Disks in Dark Matter Halos. *Ryan Quadri, Ole Möller, & Priyamvada Natarajan.* 597, 659 (2003)

See KNEIB, JEAN-PAUL, et al. A Wide-Field *Hubble Space Telescope* Study of the Cluster Cl 0024+1654 at $z = 0.4$. II. The Cluster Mass Distribution.

NATHER, R. E. See MUKADEM, ANJUM S., et al. Constraining the Evolution of ZZ Ceti.

NATTA, A. First Evidence of Dusty Disks around Herbig Be Stars. *A. Fuente, A. Rodríguez-Franco, L. Testi, A. Natta, R. Bachiller, & R. Neri.* 598, L39 (2003)

NAVARRO, J. The Arecibo 430 MHz Intermediate Galactic Latitude Survey: Discovery of Nine Radio Pulsars. *J. Navarro, S. B. Anderson, & P. C. Freire.* 594, 943 (2003)

NAVARRO, JULIO F. The Structural Evolution of Substructure. *Eric Hayashi, Julio F. Navarro, James E. Taylor, Joachim Stadel, & Thomas Quinn.* 584, 541 (2003)

Simulations of Galaxy Formation in a ΛCDM Universe. III. The Dissipative Formation of an Elliptical Galaxy. *Andrés Meza, Julio F. Navarro, Matthias Steinmetz, & Vincent R. Eke.* 590, 619 (2003)

Simulations of Galaxy Formation in a Λ Cold Dark Matter Universe. I. Dynamical and Photometric Properties of a Simulated Disk Galaxy. *Mario G. Abadi, Julio F. Navarro, Matthias Steinmetz, & Vincent R. Eke.* 591, 499 (2003)

On the Nature of the Ringlike Structure in the Outer Galactic Disk. *Amina Helmi, Julio F. Navarro, Andrés Meza, Matthias Steinmetz, & Vincent R. Eke.* 592, L25 (2003)

Simulations of Galaxy Formation in a Λ Cold Dark Matter Universe. II. The Fine Structure of Simulated Galactic Disks. *Mario G. Abadi, Julio F. Navarro, Matthias Steinmetz, & Vincent R. Eke.* 597, 21 (2003)

NAVARRO-GONZÁLEZ, RAFAEL. Oxirane: An Exotic Oxygenated Organic Compound in Titan? *Patrice Coll, Jean-Michel Bernard, Rafael Navarro-González, & François Raulin.* 598, 700 (2003)

NAYFEH, MUNIR H. See HABBAL, SHADIA RIFAI, et al. On the Detection of the Signature of Silicon Nanoparticle Dust Grains in Coronal Holes.

NAZÉ, Y. An X-Ray Investigation of the NGC 346 Field in the Small Magellanic Cloud. II. The Field Population. *Y. Nazé, J. M. Hartwell, I. R. Stevens, J. Manfroid, S. Marchenko, M. F. Corcoran, A. F. J. Moffat, & G. Skalkowski.* 586, 983 (2003)

NEDACHI, KO. See GOTO, MIWA, et al. Carbon Isotope Ratio in $^{12}CO/^{13}CO$ toward Local Molecular Clouds with Near-Infrared High-Resolution Spectroscopy of Vibrational Transition Bands.

NEFF, S. The Multicolored Hot Interstellar Medium of the "Antennae" Galaxies (NGC 4038/4039). *G. Fabbiano, M. Krauss, A. Zezas, A. Rots, & S. Neff.* 598, 272 (2003)

NEFF, S. G. Radio Emission Associated with Ultraluminous X-Ray Sources in the Galaxy Merger NGC 3256. *S. G. Neff, James S. Ulvestad, & S. D. Campion.* 599, 1043 (2003)

NEGUERUELA, I. See ISRAEL, G. L., et al. The Infrared Counterpart to the Anomalous X-Ray Pulsar 1RXS J170849−400910.

See ISRAEL, G. L., et al. Unveiling the Nature of the 321 Second Modulation in RX J0806.3+1527: Near-Simultaneous *Chandra* and Very Large Telescope Observations.

NEGUERUELA, IGNACIO. XTE J1946+271 = GRO J1944+26: An Enigmatic Be/X-Ray Binary. *Colleen A. Wilson, Mark H. Finger, M. J. Coe, & Ignacio Negueruela.* 584, 996 (2003)

NEILSEN, ERIC H. See SCHMIDT, GARY D., et al. Magnetic White Dwarfs from the Sloan Digital Sky Survey: The First Data Release.

NELSON, ANDREW F. On the Early Evolution of Forming Jovian Planets. I. Initial Conditions, Systematics, and Qualitative Comparisons to Theory. *Andrew F. Nelson & Willy Benz.* 589, 556 (2003)

On the Early Evolution of Forming Jovian Planets. II. Analysis of Accretion and Gravitational Torques. *Andrew F. Nelson & Willy Benz.* 589, 578 (2003)

NELSON, BRANT O. A *Hubble Space Telescope*/WFPC2 Snapshot Survey of 2MASS-selected Red QSOs. *Andrew R. Marble, Dean C. Hines, Gary D. Schmidt, Paul S. Smith, Jason A. Surace, Lee Armus, Roc M. Cutri, & Brant O. Nelson.* 590, 707 (2003)

NELSON, C. See ALCOCK, C., et al. The MACHO Project Large Magellanic Cloud Variable Star Inventory. XI. Frequency Analysis of the Fundamental Mode RR Lyrae Stars.

NELSON, CHARLES H. Iron Emission in the $z = 6.4$ Quasar SDSS J114816.64+525150.3. *Aaron J. Barth, Paul Martini, Charles H. Nelson, & Luis C. Ho.* 594, L95 (2003)

NELSON, LORNE A. Theoretical Considerations on the Properties of Accreting Millisecond Pulsars. *Lorne A. Nelson & Saul Rappaport.* 598, 431 (2003)

NEMETHY, P. See ATKINS, R., et al. The High-Energy Gamma-Ray Fluence and Energy Spectrum of GRB 970417A from Observations with Milagrito.

See FALCONE, A., et al. Observation of GeV Solar Energetic Particles from the 1997 November 6 Event Using Milagrito.

See ATKINS, R., et al. Observation of TeV Gamma Rays from the Crab Nebula with Milagro Using a New Background Rejection Technique.

NEMMEN DA SILVA, RODRIGO. See STORCHI-BERGMANN, THAISA, et al. Evolution of the Nuclear Accretion Disk Emission in NGC 1097: Getting Closer to the Black Hole.

NERI, R. Interferometric Observations of Powerful CO Emission from Three Submillimeter Galaxies at $z = 2.39$, 2.51, and 3.35. *R. Neri, R. Genzel, R. J. Ivison, F. Bertoldi, A. W. Blain, S. C. Chapman, P. Cox, T. R. Greve, A. Omont, & D. T. Frayer.* 597, L113 (2003)

First Evidence of Dusty Disks around Herbig Be Stars. *A. Fuente, A. Rodríguez-Franco, L. Testi, A. Natta, R. Bachiller, & R. Neri.* 598, L39 (2003)

NESCI, R. See BÖTTCHER, M., et al. Coordinated Multiwavelength Observations of BL Lacertae in 2000.

NESCI, ROBERTO. Spectral Slope Variability of BL Lacertae Objects in the Optical Band. *Fausto Vagnetti, Dario Trevese, & Roberto Nesci.* 590, 123 (2003)

NESS, J.-U. A *Chandra* Low Energy Transmission Grating Spectrometer Observation of V4743 Sagittarii: A Supersoft X-Ray Source and a Violently Variable Light Curve. *J.-U. Ness, S. Starrfield, V. Burwitz, R. Wichmann, P. Hauschildt, J. J. Drake, R. M. Wagner, H. E. Bond, J. Krautter, M. Orio, M. Hernanz, R. D. Gehrz, C. E. Woodward, Y. Butt, K. Mukai, S. Balman, & J. W. Truran.* 594, L127 (2003)

NESS, JAN-UWE. Modeling the Ne IX Triplet Spectral Region of Capella with the *Chandra* and *XMM-Newton* Gratings. *Jan-Uwe Ness, Nancy S. Brickhouse, Jeremy J. Drake, & David P. Huenemoerder.* 598, 1277 (2003)

NESS, N. F. *Voyager 1* and 2 Observations of Magnetic Fields and Associated Cosmic-Ray Variations from 2000 through 2001: 60–87 AU. *L. F. Burlaga, N. F. Ness, F. B. McDonald, J. D. Richardson, & C. Wang.* 582, 540 (2003)

Short-Period Magnetic Fluctuations in *Advanced Composition Explorer* Solar Wind Data: Evidence for Anticorrelation with Alfvén Speed. *D. J. Mullan, C. W. Smith, N. F. Ness, & R. M. Skoug.* 583, 496 (2003)

Large-Scale Magnetic Field Fluctuations and Development of the 1999–2000 Global Merged Interaction Region: 1–60 AU. *L. F. Burlaga, C. Wang, J. D. Richardson, & N. F. Ness.* 585, 1158 (2003)

Evolution of Magnetic Fields in Corotating Interaction Regions from 1 to 95 AU: Order to Chaos. *L. F. Burlaga, C. Wang, J. D. Richardson, & N. F. Ness.* 590, 554 (2003)

NESTOR, DANIEL B. Low-Redshift Damped Lyα Galaxies toward the Quasars B2 0827+243, PKS 0952+179, PKS 1127−145, and PKS 1629+120. *Sandhya M. Rao, Daniel B. Nestor, David A. Turnshek, Wendy M. Lane, Eric M. Monier, & Jacqueline Bergeron.* 595, 94 (2003)

Damped Lyα Gas Metallicities at Redshifts $z = 0.9$–2.0 from Sloan Digital Sky Survey Spectra. *Daniel B. Nestor, Sandhya M. Rao, David A. Turnshek, & Daniel Vanden Berk.* 595, L5 (2003)

NESVORNÝ, DAVID. Recent Origin of the Solar System Dust Bands. *David Nesvorný, William F. Bottke, Harold F. Levison, & Luke Dones.* 591, 486 (2003)

NETT, JASON M. Spectroscopic and Spectropolarimetric Observations of V838 Monocerotis. *John P. Wisniewski, Nancy D. Morrison, Karen S. Bjorkman, Anatoly S. Miroshnichenko, Amanda C. Gault, Jennifer L. Hoffman, Marilyn R. Meade, & Jason M. Nett.* 588, 486 (2003)

NETTERFIELD, C. B. See CRILL, B. P., et al. BOOMERANG: A Balloon-Borne Millimeter-Wave Telescope and Total Power Receiver for Mapping Anisotropy in the Cosmic Microwave Background.

See RUHL, J. E., et al. Improved Measurement of the Angular Power Spectrum of Temperature Anisotropy in the Cosmic Microwave Background from Two New Analyses of BOOMERANG Observations.

NETZER, HAGAI. See GABEL, JACK R., et al. The Ionized Gas and Nuclear Environment in NGC 3783. II. Averaged *Hubble Space Telescope*/STIS and *Far Ultraviolet Spectroscopic Explorer* Spectra.

The Largest Balck Holes and the Most Luminous Galaxies. *Hagai Netzer.* 583, L5 (2003)

See GABEL, JACK R., et al. The Ionized Gas and Nuclear Environment in NGC 3783. III. Detection of a Decreasing Radial Velocity in an Intrinsic Ultraviolet Absorber.

The Ionized Gas and Nuclear Environment in NGC 3783. IV. Variability and Modeling of the 900 Kilosecond *Chandra* Spectrum. *Hagai Netzer, Shai Kaspi, Ehud Behar, W. N. Brandt, Doron Chelouche, Ian M. George, D. Michael Crenshaw, Jack R. Gabel, Frederick W. Hamann, Steven B. Kraemer, Gerard A. Kriss, Kirpal Nandra, Bradley M. Peterson, Joseph C. Shields, & T. J. Turner.* 599, 933 (2003)

NEUFELD, DAVID A. Detections of OH toward the Extreme Carbon Star IRC +10216. *K. E. Saavik Ford, David A. Neufeld, Paul F. Goldsmith, & Gary J. Melnick.* 589, 430 (2003)

Submillimeter Wave Astronomy Satellite Mapping Observations of Water Vapor around Sagittarius B2. *David A. Neufeld, Edwin A. Bergin, Gary J. Melnick, & Paul F. Goldsmith.* 590, 882 (2003)

NEUGEBAUER, G. See GHEZ, A. M., et al. The First Measurement of Spectral Lines in a Short-Period Star Bound to the Galaxy's Central Black Hole: A Paradox of Youth.

NEUHÄUSER, R. Spatial Study with the Very Large Telescope of a New Resolved Edge-on Circumstellar Dust Disk Discovered at the Periphery of the ρ Ophiuchi Dark Cloud. *N. Grosso, J. Alves, K. Wood, R. Neuhäuser, T. Montmerle, & J. E. Bjorkman.* 586, 296 (2003)

Rotational Periods of Very Young Brown Dwarfs and Very Low-Mass Stars in Chamaeleon I. *V. Joergens, M. Fernández, J. M. Carpenter, & R. Neuhäuser.* 594, 971 (2003)

NEUKIRCH, T. Magnetic Pinching of Hyperbolic Flux Tubes. I. Basic Estimations. *V. S. Titov, K. Galsgaard, & T. Neukirch.* 582, 1172 (2003)

Magnetic Pinching of Hyperbolic Flux Tubes. II. Dynamic Numerical Model. *K. Galsgaard, V. S. Titov, & T. Neukirch.* 595, 506 (2003)

NEUNHÖFFER, T. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

NEVALAINEN, J. Soft X-Ray Excess Emission in Clusters of Galaxies Observed with *XMM-Newton*. *J. Nevalainen, R. Lieu, M. Bonamente, & D. Lumb.* 584, 716 (2003)

NEW, R. Does the Energy Supplied to Low-l Solar p-Modes Vary over the Activity Cycle? *W. J. Chaplin, Y. Elsworth, G. R. Isaak, B. A. Miller, R. New, & T. Toutain.* 582, L115 (2003)

A Comparison of Low-Degree Solar p-Mode Parameters from BiSON and GONG: Underlying Values and Temporal Variations. *R. Howe, W. J. Chaplin, Y. P. Elsworth, F. Hill, R. Komm, G. R. Isaak, & R. New.* 588, 1204 (2003)

NEWBERG, HEIDI JO. Sloan Digital Sky Survey Catalog of Stars in the Draco Dwarf Spheroidal Galaxy. *Heather A. Rave, Chongshan Zhao, Heidi Jo Newberg, Brian Yanny, Donald P. Schneider, J. Brinkman, & Don Q. Lamb.* 145, 245 (2003)

Sagittarius Tidal Debris 90 kiloparsecs from the Galactic Center. *Heidi Jo Newberg, Brian Yanny, Eva K. Grebel, Greg Hennessy, Zeljko Ivezic, David Martinez-Delgado, Michael Odenkirchen, Hans-Walter Rix, Jon Brinkmann, Don Q. Lamb, Donald P. Schneider, & Donald G. York.* 596, L191 (2003)

NEWCOMB, M. See RUNYAN, M. C., et al. ACBAR: The Arcminute Cosmology Bolometer Array Receiver.

See GOLDSTEIN, J. H., et al. Estimates of Cosmological Parameters Using the Cosmic Microwave Background Angular Power Spectrum of ACBAR.

NEWCOMB, M. G. See NOVAK, G., et al. First Results from the Submillimeter Polarimeter for Antarctic Remote Observations: Evidence of Large-Scale Toroidal Magnetic Fields in the Galactic Center.

NEWMAN, JEFFREY A. See MADGWICK, DARREN S., et al. The DEEP2 Galaxy Redshift Survey: Spectral Classification of Galaxies at $z \sim 1$.

NEWMAN, PETER R. See SCHMIDT, GARY D., et al. Magnetic White Dwarfs from the Sloan Digital Sky Survey: The First Data Release.

NEYMAN, C. See COLAVITA, M., et al. Observations of DG Tauri with the Keck Interferometer.

See SWAIN, MARK, et al. Interferometer Observations of Subparsec-Scale Infrared Emission in the Nucleus of NGC 4151.

NEYRINCK, MARK C. See GNEDIN, NICKOLAY Y., et al. Linear Gas Dynamics in the Expanding Universe.

NG, C. K. Modeling Shock-accelerated Solar Energetic Particles Coupled to Interplanetary Alfvén Waves. *C. K. Ng, D. V. Reames, & A. J. Tylka.* 591, 461 (2003)

NG, C.-Y. The Pulsar Wind Nebula Torus of PSR J0538+2817 and the Origin of Pulsar Velocities. *Roger W. Romani & C.-Y. Ng.* 585, L41 (2003)

NG, KIN-WANG. Observational Strategies of Cosmic Microwave Background Temperature and Polarization Interferometry Experiments. *Chan-Gyung Park, Kin-Wang Ng, Changbom Park, Guo-Chin Liu, & Keiichi Umetsu.* 589, 67 (2003)

NG, Y. JACK. Probing Planck-Scale Physics with Extragalactic Sources? *Y. Jack Ng, W. A. Christiansen, & H. van Dam.* 591, L87 (2003)

NGEOW, CHOONG C. The Cepheid Distance to NGC 1637: A Direct Test of the Expanding Photosphere Method Distance to SN 1999em. *Douglas C. Leonard, Shashi M. Kanbur, Choong C. Ngeow, & Nial R. Tanvir.* 594, 247 (2003)

NGEOW, CHOW-CHOONG. Reconstructing Cepheid Light Curve with Fourier Techniques. I. The Fourier Expansion and Interrelations. *Chow-Choong Ngeow, Shashi M. Kanbur, Sergei Nikolaev, Nial R. Tanvir, & Martin A. Hendry.* 586, 959 (2003)

NICASTRO, F. See FABBIANO, G., et al. The X-Ray–faint Emission of the Supermassive Nuclear Black Hole of IC 1459.

Chandra Observation of 3C 212: A New Look at the X-Ray and Ultraviolet Absorbers. *T. L. Aldcroft, A. Siemiginowska, M. Elvis, S. Mathur, F. Nicastro, & S. S. Murray.* 597, 751 (2003)

Toward a Self-Consistent Model of the Ionized Absorber in NGC 3783. *Y. Krongold, F. Nicastro, N. S. Brickhouse, M. Elvis, D. A. Liedahl, & S. Mathur.* 597, 832 (2003)

NICASTRO, FABRIZIO. The Lack of Broad-Line Regions in Low Accretion Rate Active Galactic Nuclei as Evidence of Their Origin in the Accretion Disk. *Fabrizio Nicastro, Andrea Martocchia, & Giorigo Matt.* 589, L13 (2003)

NICASTRO, L. See DE PASQUALE, M., et al. A Comparative Study of the X-Ray Afterglow Properties of Optically Bright and Dark Gamma-Ray Bursts.

NICHOL, R. C. See BLANTON, MICHAEL R., et al. The Galaxy Luminosity Function and Luminosity Density at Redshift $z = 0.1$.

See BLANTON, MICHAEL R., et al. The Broadband Optical Properties of Galaxies with Redshifts $0.02 < z < 0.22$.

See BAHCALL, NETA A., et al. A Merged Catalog of Clusters of Galaxies from Early Sloan Digital Sky Survey Data.

See HOPKINS, A. M., et al. Star Formation Rate Indicators in the Sloan Digital Sky Survey.

NICHOL, ROBERT. See GLAZEBROOK, KARL, et al. The Sloan Digital Sky Survey: The Cosmic Spectrum and Star Formation History.

NICHOL, ROBERT C. See GOMEZ, PERCY L., et al. Galaxy Star Formation as a Function of Environment in the Early Data Release of the Sloan Digital Sky Survey.

See BAHCALL, NETA A., et al. The Cluster Mass Function from Early Sloan Digital Sky Survey Data: Cosmological Implications.

See EISENSTEIN, DANIEL J., et al. Average Spectra of Massive Galaxies in the Sloan Digital Sky Survey.

Measuring σ_8 with Cluster Lensing: Biases from Unrelaxed Clusters. *Graham P. Smith, Alastair C. Edge, Vincent R. Eke, Robert C. Nichol, Ian Smail, & Jean-Paul Kneib.* 590, L79 (2003)

See SZALAY, ALEXANDER S., et al. Karhunen-Loève Estimation of the Power Spectrum Parameters from the Angular Distribution of Galaxies in Early Sloan Digital Sky Survey Data.

The Environment of Active Galactic Nuclei in the Sloan Digital Sky Survey. *Christopher J. Miller, Robert C. Nichol, Percy L. Gómez, Andrew M. Hopkins, & Mariangela Bernardi.* 597, 142 (2003)

NICHOLS, JOY. *Chandra* Observations of Associates of η Carinae. I. Luminosities. *Nancy Remage Evans, Frederick D. Seward, Miriam I. Krauss, Takashi Isobe, Joy Nichols, Eric M. Schlegel, & Scott J. Wolk.* 589, 509 (2003)

NIEMEYER, J. C. On the Small-Scale Stability of Thermonuclear Flames in Type Ia Supernovae. *F. K. Roepke, J. C. Niemeyer, & W. Hillenbrandt.* 588, 952 (2003)

NIESSEN, P. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

NIESSNER, A. See COLAVITA, M., et al. Observations of DG Tauri with the Keck Interferometer.

NIEUWENHUIJZEN, H. See LOBEL, A., et al. High-Resolution Spectroscopy of the Yellow Hypergiant ρ Cassiopeiae from 1993 through the Outburst of 2000–2001.

NIGHTINGALE, RICHARD W. Observational Tests of Damping by Resonant Absorption in Coronal Loop Oscillations. *Markus J. Aschwanden, Richard W. Nightingale, Jesse Andries, Marcel Goossens, & Tom Van Doorsselaere.* 598, 1375 (2003)

NIKOLA, T. CO $J = 7 \rightarrow 6$ Observations of NGC 253: Cosmic-Ray–heated Warm Molecular Gas. *C. M. Bradford, T. Nikola, G. J. Stacey, A. D. Bolatto, J. M. Jackson, M. L. Savage, J. A. Davidson, & S. J. Higdon.* 586, 891 (2003)

NIKOLAEV, SERGEI. Reconstructing Cepheid Light Curve with Fourier Techniques. I. The Fourier Expansion and Interrelations. *Chow-Choong Ngeow, Shashi M. Kanbur, Sergei Nikolaev, Nial R. Tanvir, & Martin A. Hendry.* 586, 959 (2003)

NIKOLASHVILI, M. G. See BÖTTCHER, M., et al. Coordinated Multiwavelength Observations of BL Lacertae in 2000.

NINDOS, A. The Magnetic Helicity Budget of Solar Active Regions and Coronal Mass Ejections. *A. Nindos, J. Zhang, & H. Zhang.* 594, 1033 (2003)

NISENSON, P. Motions of Isolated *G*-Band Bright Points in the Solar Photosphere. *P. Nisenson, A. A. van Ballegooijen, A. G. de Wijn, & P. Suetterlin.* 587, 458 (2003)

NISHI, K. Formation of a Sporadic Plasma Jet from a Disrupting Magnetic Flux Tube. *J. I. Sakai, K. Nishi, & I. V. Sokolov.* 584, 1095 (2003)

NISHI, R. See SUMI, T., et al. Microlensing Optical Depth toward the Galactic Bulge from Microlensing Observations during 2000 with Difference Image Analysis.

NISHIDA, D. See ENOMOTO, R., et al. Search for TeV Gamma Rays from SN 1987A in 2001.

NISHIJIMA, K. See ENOMOTO, R., et al. Search for TeV Gamma Rays from SN 1987A in 2001.

NISHIKAWA, K.-I. Particle Acceleration in Relativistic Jets due to Weibel Instability. *K.-I. Nishikawa, P. Hardee, G. Richardson, R. Preece, H. Sol, & G. J. Fishman.* 595, 555 (2003)

NISHIMURA, TETSUO. See TANIGUCHI, YOSHIAKI, et al. The Discovery of a Very Narrow Line Star-forming Object at a Redshift of 5.66.

NISHIURA, S. Discovery of Dust Trail of *STARDUST* Comet Sample Return Mission Target: 81P/Wild 2. *M. Ishiguro, S. M. Kwon, Y. Sarugaku, S. Hasegawa, F. Usui, S. Nishiura, Y. Nakada, & H. Yano.* 589, L101 (2003)

See URATA, Y., et al. Multiband Optical Follow-up Observations of GRB 020813 at the Kiso and Bisei Observatories.

NISHIZAWA, M. See AMENOMORI, M., et al. Multi-TeV Gamma-Ray Flares from Markarian 421 in 2000 and 2001 Observed with the Tibet Air Shower Array.

NISSEN, P. E. Chemical Abundances of Old Metal-rich Stars in the Solar Neighborhood. *Y. Q. Chen, G. Zhao, P. E. Nissen, G. S. Bai, & H. M. Qiu.* 591, 925 (2003)

NITA, GELU M. HO, Extreme-Ultraviolet, and Microwave Observations of the 2000 March 22 Solar Flare and Spontaneous Magnetic Reconnection. *Jeongwoo Lee, Peter T. Gallagher, Dale E. Gary, Gelu M. Nita, G. S. Choe, Su-Chan Bong, & Hong Sik Yun.* 585, 524 (2003)

Decimetric Spike Bursts versus Microwave Continuum. *Gregory D. Fleishman, Dale E. Gary, & Gelu M. Nita.* 593, 571 (2003)

NITTA, A. See MUKADEM, ANJUM S., et al. Constraining the Evolution of ZZ Ceti.

NITTA, ATSUKO. See SCHMIDT, GARY D., et al. Magnetic White Dwarfs from the Sloan Digital Sky Survey: The First Data Release.

NITTA, NARIAKI V. Low Coronal Signatures of Large Solar Energetic Particle Events. *Nariaki V. Nitta, Edward W. Cliver, & Allan J. Tylka.* 586, L103 (2003)

NOBILI, L. A Disk-Jet Interaction Model for the X-Ray Variability in Microquasars. *L. Nobili.* 582, 954 (2003)

NOBILI, S. See KNOP, R. A., et al. New Constraints on Ω_M, Ω_Λ, and w from an Independent Set of 11 High-Redshift Supernovae Observed with the *Hubble Space Telescope*.

NOBLE, J. C. See BOTTCHER, M., et al. Coordinated Multiwavelength Observations of BL Lacertae in 2000.

NOBLE, M. *Chandra* Observations of Magnetic White Dwarfs and Their Theoretical Implications. *Z. E. Musielak, M. Noble, J. G. Porter, & D. E. Winget.* 593, 481 (2003)

NODA, S. See SUMI, T., et al. Microlensing Optical Depth toward the Galactic Bulge from Microlensing Observations during 2000 with Difference Image Analysis.

NOEL-STORR, JACOB. Space Telescope Imaging Spectrograph Spectroscopy of the Emission-Line Gas in the Nuclei of Nearby FR-I Galaxies. *Jacob Noel-Storr, Stefi A. Baum, Gijs Verdoes Kleijn, Roeland P. van der Marel, Christoper P. O'Dea, Tim de Zeeuw, & C. Marcella Carollo.* 148, 419 (2003)

NOESKE, K. Discovery of a Double Ring in the Dwarf Galaxy Markarian 409. *A. Gil de Paz, B. F. Madore, K. Noeske, L. M. Cairós, P. Papaderos, & S. A. Silich.* 596, L179 (2003)

NOESKE, KAI. Deep Near-Infrared Mapping of Young and Old Stars in Blue Compact Dwarf Galaxies. *Luz M. Cairós, Nicola Caon, Polychronis Papaderos, Kai Noeske, Jose M. Vílchez, Begoña García Lorenzo, & Casiana Muñoz-Tuñón.* 593, 312 (2003)

NOGUCHI, KUNIO. See SATO, BUN'EI, et al. A Planetary Companion to the G-Type Giant Star HD 104985.

NOGUCHI, TAKASHI. See KAMEGAI, KAZUHISA, et al. Distribution of the C I Emission in the ρ Ophiuchi Dark Cloud.

NOLAN, P. L. Variability of EGRET Gamma-Ray Sources. *P. L. Nolan, W. F. Tompkins, I. A. Grenier, & P. F. Michelson.* 597, 615 (2003)

NOLL, K. S. High-Resolution 3 Micron Spectroscopy of Molecules in the Mesosphere and Troposphere of Titan. *T. R. Geballe, S. J. Kim, K. S. Noll, & C. A. Griffith.* 583, L39 (2003)

NOLLETT, KENNETH M. Cool Bottom Processes on the Thermally Pulsing Asymptotic Giant Branch and the Isotopic Composition of Circumstellar Dust Grains. *Kenneth M. Nollett, M. Busso, & G. J. Wasserburg.* 582, 1036 (2003)

NOLTA, M. R. See BENNETT, C. L., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Preliminary Maps and Basic Results.

See BENNETT, C. L., et al. First-Year *Wilkinson Microwave Anisotrophy Probe* (*WMAP*) Observations: Foreground Emission.

See KOMATSU, E., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Tests of Gaussianity.

See SPERGEL, D. N., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Determination of Cosmological Parameters.

See VERDE, L., et al. First-Year *Wilkinson Microwave Anisotrophy Probe* (*WMAP*) Observations: Parameter Estimation Methodology.

See PAGE, L., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Interpretation of the TT and TE Angular Power Spectrum Peaks.

The MAT/TOCO Measurement of the Angular Power Spectrum of the Cosmic Microwave Background at 30 and 40 GHz. *M. R. Nolta, M. J. Devlin, W. B. Dorwart, A. D. Miller, L. A. Page, J. Puchalla, E. Torbet, & H. T. Tran.* 598, 97 (2003)

NOMOTO, K. See KAWABATA, K. S., et al. On the Spectrum and Spectropolarimetry of Type Ic Hypernova SN 2003dh/GRB 030329.

NOMOTO, KEN'ICHI. Three-dimensional Simulations of the Chemical and Dynamical Evolution of the Galactic Bulge. *Naohito Nakasato & Ken'ichi Nomoto.* 588, 842 (2003)

See YOSHII, YUZURU, et al. The Optical/Near-Infrared Light Curves of SN 2002ap for the First 140 Days after Discovery.

A Two-Component Model for the Light Curves of Hypernovae. *Keiichi Maeda, Paolo A. Mazzali, Jingsong Deng, Ken'ichi Nomoto, Yuzuru Yoshii, Hiroyuki Tomita, & Yukiyasu Kobayashi.* 593, 931 (2003)

The r-Process in Supernovae Explosions from the Collapse of O-Ne-Mg Cores. *Shinya Wanajo, Masaya Tamamura, Naoki Itoh, Ken'ichi Nomoto, Yuhri Ishimaru, Timothy C. Beers, & Satoshi Nozawa.* 593, 968 (2003)

Evolution of Rotating Accreting White Dwarfs and the Diversity of Type Ia Supernovae. *Tatsuhiro Uenishi, Ken'ichi Nomoto, & Izumi Hachisu.* 595, 1094 (2003)

Dust in the Early Universe: Dust Formation in the Ejecta of Population III Supernovae. *Takaya Nozawa, Takashi Kozasa, Hideyuki Umeda, Keiichi Maeda, & Ken'ichi Nomoto.* 598, 785 (2003)

Bipolar Supernova Explosions: Nucleosynthesis and Implications for Abundances in Extremely Metal-Poor Stars. *Keiichi Maeda & Ken'ichi Nomoto.* 598, 1163 (2003)

See MAZZALI, PAOLO A., et al. The Type Ic Hypernova SN 2003dh/GRB 030329.

NONINO, M. A European Southern Observatory Very Large Telescope Survey of Near-Infrared ($Z \leq 25$) Selected Galaxies at Redshifts $4.5 < z < 6$: Constraining the Cosmic Star Formation Rate near the Reionization Epoch. *A. Fontana, F. Poli, N. Menci, M. Nonino, E. Giallongo, S. Cristiani, & S. D'Odorico.* 587, 544 (2003)

See WANG, J., et al. A Puzzling X-Ray Source Found in the *Chandra* Deep Field–South.

See GILLI, R., et al. Tracing the Large-Scale Structure in the *Chandra* Deep Field South.

See POLI, F., et al. The Evolution of the Galaxy Luminosity Function in the Rest-Frame Blue Band up to $z = 3.5$.

See FONTANA, A., et al. The Assembly of Massive Galaxies from Near-Infrared Observations of the Hubble Deep Field–South.

NORD, M. Nonthermal Emission from the Arches Cluster (G0.121+0.017) and the Origin of γ-Ray Emission from 3EG J1746−2851. *F. Yusef-Zadeh, M. Nord, M. Wardle, C. Law, C. Lang, & T. J. W. Lazio.* 590, L103 (2003)

NORDGREN, TYLER E. Theoretical Limb Darkening for Classical Cepheids. II. Corrections for the Geometric Baade-Wesselink Method. *Massimo Marengo, Margarita Karovska, Dimitar D. Sasselov, Costas Papaliolios, John T. Armstrong, & Tyler E. Nordgren.* 589, 968 (2003)

NORDLUND, Å. See BOGDAN, T. J., et al. Waves in the Magnetized Solar Atmosphere. II. Waves from Localized Sources in Magnetic Flux Concentrations.

NORDLUND, ÅKE. Structure Function Scaling in the Taurus and Perseus Molecular Cloud Complexes. *Paolo Padoan, Stanislav Boldyrev, William Langer, & Åke Nordlund.* 583, 308 (2003)

What Causes p-Mode Asymmetry Reversal? *Dali Georgobiani, Robert F. Stein, & Åke Nordlund.* 596, 698 (2003)

NORDSIECK, KENNETH H. The Pleiades Reflection Nebula. I. Ultraviolet, Optical, and Far-Infrared Imaging Photometry. *Steven J. Gibson & Kenneth H. Nordsieck.* 589, 347 (2003)

The Pleiades Reflection Nebula. II. Simple Model Constraints on Dust Properties and Scattering Geometry. *Steven J. Gibson & Kenneth H. Nordsieck.* 589, 362 (2003)

The Effect of Multiple Scattering on the Polarization from Binary Star Envelopes. I. Self- and Externally Illuminated Disks. *Jennifer L. Hoffman, Barbara A. Whitney, & Kenneth H. Nordsieck.* 598, 572 (2003)

NORGAARD-NIELSEN, H. U. See AGUIRRE, J. E., et al. The Spectrum of Integrated Millimeter Flux of the Magellanic Clouds and 30 Doradus from TopHat and DIRBE Data.

NORIEGA-CRESPO, A. Warm Molecular Hydrogen and Ionized Neon in the HH 2 Outflow. *B. LeFloch, J. Cernicharo, S. Cabrit, A. Noriega-Crespo, A. Moro-Martín, & D. Cesarsky.* 590, L41 (2003)

NORIMOTO, YUJI. See SATO, BUN'EI, et al. A Planetary Companion to the G-Type Giant Star HD 104985.

NORMAN, C. See WANG, J., et al. A Puzzling X-Ray Source Found in the *Chandra* Deep Field–South.

See Gilli, R., et al. Tracing the Large-Scale Structure in the *Chandra* Deep Field South.

Iron Abundance in the Intracluster Medium at High Redshift. *P. Tozzi, P. Rosati, S. Ettori, S. Borgani, V. Mainieri, & C. Norman.* 593, 705 (2003)

See Grogin, N. A., et al. *Hubble Space Telescope* Imaging in the *Chandra* Deep Field–South. III. Quantitative Morphology of the 1 Million Second *Chandra* Counterparts and Comparison with the Field Population.

Norman, C. A. No X-Ray–bright Type II Quasars among the Lyα Emitters. *S. Malhotra, J. X. Wang, J. E. Rhoads, T. M. Heckman, & C. A. Norman.* 585, L25 (2003)

Norman, Colin. Global Asymptotic Solutions for Relativistic Magnetohydrodynamic Jets and Winds. *Jean Heyvaerts & Colin Norman.* 596, 1240 (2003)

Kinetic Energy Flux versus Poynting Flux in Magnetohydrodynamic Winds and Jets: The Intermediate Regime. *Jean Heyvaerts & Colin Norman.* 596, 1256 (2003)

Global Asymptomatic Solutions for Nonrelativistic Magnetohydrodynamic Jets and Winds. *Jean Heyvaerts & Colin Norman.* 596, 1270 (2003)

Norman, D. The Smallest Mass Ratio Young Star Spectroscopic Binaries: Erratum (ApJ, 569, 863 [2002]). *L. Prato, M. Simon, T. Mazeh, I. S. McLean, D. Norman, & S. Zucker.* 598, 1409 (2003)

Norman, Michael L. Numerical Simulations of High-Redshift Star Formation in Dwarf Galaxies. *Konstantinos Tassis, Tom Abel, Greg L. Bryan, & Michael L. Norman.* 587, 13 (2003)

Beyond Flux-limited Diffusion: Parallel Algorithms for Multidimensional Radiation Hydrodynamics. *John C. Hayes & Michael L. Norman.* 147, 197 (2003)

Norris, John E. See Aoki, Wako, et al. Europium Isotope Ratios in *s*-Process Element-enhanced Metal-poor Stars: A New Probe of the ^{151}Sm Branching.

Norris, R. P. See Corbett, E. A., et al. COLA. II. Radio and Spectroscopic Diagnostics of Nuclear Activity in Galaxies.

See Greenhill, L. J., et al. A Warped Accretion Disk and Wide-Angle Outflow in the Inner Parsec of the Circinus Galaxy.

Norris, Ray P. A Triple Radio Continuum Source Associated with IRAS 16547−4247: A Collimated Stellar Wind Emanating from a Massive Protostar. *Guido Garay, Kate J. Brooks, Diego Mardones, & Ray P. Norris.* 587, 739 (2003)

Noumaru, J. See Kawabata, K. S., et al. On the Spectrum and Spectropolarimetry of Type Ic Hypernova SN 2003dh/GRB 030329.

Nousek, John A. The Radial Structure of Supernova Remnant N103B. *Karen T. Lewis, David N. Burrows, John P. Hughes, Patrick O. Slane, Gordon P. Garmire, & John A. Nousek.* 582, 770 (2003)

X-Ray Emission from Multiphase Shock in the Large Magellanic Cloud Supernova Remnant N49. *Sangwook Park, David N. Burrows, Gordon P. Garmire, John A. Nousek, John P. Hughes, & Rosa Murphy Williams.* 586, 210 (2003)

Detection of Magnesium-rich Ejecta in the Middle-aged Supernova Remnant N49B. *Sangwook Park, John P. Hughes, Patrick O. Slane, David N. Burrows, Jessica S. Warren, Gordon P. Garmire, & John A. Nousek.* 592, L41 (2003)

0103−72.6: A New Oxygen-rich Supernova Remnant in the Small Magellanic Cloud. *Sangwook Park, John P. Hughes, David N. Burrows, Patrick O. Slane, John A. Nousek, & Gordon P. Garmire.* 598, L95 (2003)

Novak, G. First Results from the Submillimeter Polarimeter for Antarctic Remote Observations: Evidence of Large-Scale Toroidal Magnetic Fields in the Galactic Center. *G. Novak, D. T. Chuss, T. Renbarger, G. S. Griffin, M. G. Newcomb, J. B. Peterson, R. F. Loewenstein, D. Pernic, & J. L. Dotson.* 583, L83 (2003)

Novak, Giles. Magnetic Fields in Cool Clouds within the Central 50 Parsecs of the Galaxy. *David T. Chuss, Jacqueline A. Davidson, Jessie L. Dotson, C. Darren Dowell, Roger H. Hildebrand, Giles Novak, & John E. Vaillancourt.* 599, 1116 (2003)

Novicki, Megan C. Small-Scale Structure in the Galactic Interstellar Medium: Implications for Galaxy Cluster Studies. *Joel N. Bregman, Megan C. Novicki, Jessica E. Krick, & John S. Arabadjis.* 597, 399 (2003)

Novikov, I. D. Ionization History of the Cosmic Plasma in the Light of the Recent Cosmic Background Imager and Future *Planck* Data. *A. G. Doroshkevich, I. P. Naselsky, P. D. Naselsky, & I. D. Novikov.* 586, 709 (2003)

Novosyadlyj, B. Acoustic Peaks and Dips in the Cosmic Microwave Background Power Spectrum: Observational Data and Cosmological Constraints. *R. Durrer, B. Novosyadlyj, & S. Apunevych.* 583, 33 (2003)

Nowak, Mike. A *Chandra* Observation of the Neutron Star X-Ray Transient and Eclipsing Binary MXB 1659−29 in Quiescence. *Rudy Wijnands, Mike Nowak, Jon M. Miller, Jeroen Homan, Stefanie Wachter, & Walter H. H. Lewin.* 594, 952 (2003)

Noyes, D. See Atkins, R., et al. Observation of TeV Gamma Rays from the Crab Nebula with Milagro Using a New Background Rejection Technique.

Nozawa, Satoshi. Enhancement of Resonant Thermonuclear Reaction Rates in Extremely Dense Stellar Plasmas. *Naoki Itoh, Nami Tomizawa, Shinya Wanajo, & Satoshi Nozawa.* 586, 1436 (2003)

The *r*-Process in Supernovae Explosions from the Collapse of O-Ne-Mg Cores. *Shinya Wanajo, Masaya Tamamura, Naoki Itoh, Ken'ichi Nomoto, Yuhri Ishimaru, Timothy C. Beers, & Satoshi Nozawa.* 593, 968 (2003)

Nozawa, Takaya. Dust in the Early Universe: Dust Formation in the Ejecta of Population III Supernovae. *Takaya Nozawa, Takashi Kozasa, Hideyuki Umeda, Keiichi Maeda, & Ken'ichi Nomoto.* 598, 785 (2003)

Nucciarelli, G. See Böttcher, M., et al. Coordinated Multiwavelength Observations of BL Lacertae in 2000.

Nugent, P. E. See Knop, R. A., et al. New Constraints on Ω_M, Ω_Λ, and w from an Independent Set of 11 High-Redshift Supernovae Observed with the *Hubble Space Telescope*.

Nugent, Peter. See Kasen, Daniel, et al. Analysis of the Flux and Polarization Spectra of the Type Ia Supernova SN 2001el: Exploring the Geometry of the High-Velocity Ejecta.

Nugent, Peter E. Determination of Primordial Metallicity and Mixing in the Type II-P Supernova 1993W. *E. Baron, Peter E. Nugent, David Branch, Peter H. Hauschildt, M. Turatto, & E. Cappellaro.* 586, 1199 (2003)

See Wang, Lifan, et al. Spectropolarimetry of SN 2001el in NGC 1448: Asphericity of a Normal Type Ia Supernova.

Nuth, Joseph A., III. Zinc Crystal Growth in Microgravity. *B. P. Michael, Joseph A. Nuth III, & Lembit U. Lilleleht.* 590, 579 (2003)

Nuza, Sebastián E. Possible New γ-Ray Pulsar Detections by the *AGILE* and *GLAST* Missions: An Outer Gap Model Look at the Parkes Pulsar Catalog. *Diego F. Torres & Sebastián E. Nuza.* 583, L25 (2003)

Nygren, D. R. See Ahrens, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

Oasa, Yumiko. See Itoh, Yoichi, et al. Interferometric Observations of the T Tauri Stars in the MBM 12 Cloud.

Near-Infrared Imaging of the Circumstellar Disk around Herbig Ae Star HD 150193A. *Misato Fukagawa, Motohide Tamura, Yoichi Itoh, Saeko S. Hayashi, & Yumiko Oasa.* 590, L49 (2003)

O'Brien, K. Dynamical Evidence for a Black Hole in GX 339−4. *R. I. Hynes, D. Steeghs, J. Casares, P. A. Charles, & K. O'Brien.* 583, L95 (2003)

Bowen Flourescence from the Companion Star in X1822−371. *J. Casares, D. Steeghs, R. I. Hynes, P. A. Charles, & K. O'Brien.* 590, 1041 (2003)

O'Brien, M. S. See Mukadem, Anjum S., et al. Constraining the Evolution of ZZ Ceti.

O'Brien, P. T. See Mason, K. O., et al. The X-Ray Spectrum of the Seyfert I Galaxy Markarian 766: Dusty Warm Absorber or Relativistic Emission Lines?

A Massive X-Ray Outflow from the Quasar PDS 456. *J. N. Reeves, P. T. O'Brien, & M. J. Ward.* 593, L65 (2003)

O'Connell, Liam. See Szalay, Alexander S., et al. Karhunen-Loève Estimation of the Power Spectrum Parameters from the Angular Distribution of Galaxies in Early Sloan Digital Sky Survey Data.

O'Connell, Robert W. See Eskridge, Paul B., et al. Ultraviolet-Optical Pixel Maps of Face-on Spiral Galaxies: Clues for Dynamics and Star Formation Histories.

Blue Horizontal-Branch Stars in Old, Metal-rich Stellar Systems. *Ruth C. Peterson, Bruce W. Carney, Ben Dorman, Elizabeth M. Green, Wayne Landsman, James Liebert, Robert W. O'Connell, & Robert T. Rood.* 588, 299 (2003)

Age and Abundance Discrimination in Old Stellar Populations Using Mid-Ultraviolet Colors. *Ben Dorman, Robert W. O'Connell, & Robert T. Rood.* 591, 878 (2003)

O'Dea, Christoper P. Space Telescope Imaging Spectrograph Spectroscopy of the Emission-Line Gas in the Nuclei of Nearby FR-I Galaxies. *Jacob Noel-Storr, Stefi A. Baum, Gijs Verdoes Kleijn, Roeland P. van der Marel,*

Christoper P. O'Dea, Tim de Zeeuw, & C. Marcella Carollo. 148, 419 (2003)

Odegard, N. See Bennett, C. L., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Preliminary Maps and Basic Results.

See Hinshaw, G., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Data Processing Methods and Systematic Errors Limits.

See Bennett, C. L., et al. First-Year *Wilkinson Microwave Anisotrophy Probe* (*WMAP*) Observations: Foreground Emission.

O'Dell, Christopher W. An Instrument for Investigating the Large Angular Scale Polarization of the Cosmic Microwave Background. *Brian G. Keating, Christopher W. O'Dell, Joshua O. Gundersen, Lucio Piccirillo, Nate C. Stebor, & Peter T. Timbie.* 144, 1 (2003)

Odenkirchen, Michael. See Newberg, Heidi Jo, et al. Sagittarius Tidal Debris 90 kiloparsecs from the Galactic Center.

Odenwald, S. Analysis of the Diffuse Near-Infrared Emission from Two-Micron All-Sky Survey Deep Integration Data: Foregrounds versus the Cosmic Infrared Background. *S. Odenwald, A. Kashlinsky, J. C. Mather, M. F. Skrutskie, & R. M. Cutri.* 583, 535 (2003)

Odewahn, S. *Hubble Space Telescope* Images of Submillimeter Sources: Large Irregular Galaxies at High Redshift. *S. C. Chapman, R. Windhorst, S. Odewahn, H. Yan, & C. Conselice.* 599, 92 (2003)

Odewahn, Stephen C. The Infrared Counterparts of the Optically Unidentified Chandra Deep Field–South 1 Ms Sources. *Haojing Yan, Rogier A. Windhorst, Huub J. A. Röttgering, Seth H. Cohen, Stephen C. Odewahn, Scott C. Chapman, & William C. Keel.* 585, 67 (2003)

See Eskridge, Paul B., et al. Ultraviolet-Optical Pixel Maps of Face-on Spiral Galaxies: Clues for Dynamics and Star Formation Histories.

O'Donoghue, D. See Mukadem, Anjum S., et al. Constraining the Evolution of ZZ Ceti.

Oegerle, W. R. See Wakker, B. P., et al. The *Far Ultraviolet Spectroscopic Explorer* Survey of O VI Absorption in and near the Galaxy.

Probing O VI Emission in the Halos of Edge-On Spiral Galaxies. *B. Otte, E. M. Murphy, J. C. Howk, Q. D. Wang, W. R. Oegerle, & K. R. Sembach.* 591, 821 (2003)

Oemler, Augustus. A Wide-Field *Hubble Space Telescope* Study of the Cluster Cl 0024+16 at $z = 0.4$. I. Morphological Distributions to 5 Mpc Radius. *Tommaso Treu, Richard S. Ellis, Jean-Paul Kneib, Alan Dressler, Ian Smail, Oliver Czoske, Augustus Oemler, & Priyamvada Natarajan.* 591, 53 (2003)

Östlin, G. Stellar Masses of Luminous Compact Blue Galaxies at Redshifts $z = 0.4$–1.2. *R. Guzmán, G. Östlin, D. Kunth, M. A. Bershady, D. C. Koo, & M. A. Pahre.* 586, L45 (2003)

Östlin, Göran. The First Deep Advanced Camera for Surveys Lyα Images of Local Starburst Galaxies. *Daniel Kunth, Claus Leitherer, J. Miguel Mas-Hesse, Göran Östlin, & Artashes Petrosian.* 597, 263 (2003)

Özel, Feryal. The Effect of Vacuum Polarization and Proton Cyclotron Resonances on Photon Propagation in Strongly Magnetized Plasmas. *Feryal Özel.* 583, 402 (2003)

The Energy Dependence of Millisecond Oscillations in Thermonuclear X-Ray Bursts. *Michael P. Muno, Feryal Oezel, & Deepto Chakrabarty.* 595, 1066 (2003)

Ofek, E. See Price, P. A., et al. Discovery of GRB 020405 and Its Late Red Bump.

Ofek, E. O. See Mukadem, Anjum S., et al. Constraining the Evolution of ZZ Ceti.

Ofek, Eran O. Time-Delay Measurement of the Lensed Quasar HE 1104−1805. *Eran O. Ofek & Dan Maoz.* 594, 101 (2003)

Ogasaka, Yashushi. See Ohta, Kouji, et al. Optical Identification of the *ASCA* Lynx Deep Survey: An Association of Quasi-Stellar Objects and a Supercluster at $z = 1.3$?

Ogasawara, R. See Kawabata, K. S., et al. On the Spectrum and Spectropolarimetry of Type Ic Hypernova SN 2003dh/GRB 030329.

Ogasawara, Ryusuke. See Taniguchi, Yoshiaki, et al. The Discovery of a Very Narrow Line Star-forming Object at a Redshift of 5.66.

Ögelman, H. See Ahrens, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

Ogilvie, G. I. Saturation of the Corotation Resonance in a Gaseous Disk. *G. I. Ogilvie & S. H. Lubow.* 587, 398 (2003)

Ogio, S. See Watanabe, K., et al. Solar Neutron Event in Association with a Large Solar Flare on 2000 November 24.

Ogle, P. M. See Mason, K. O., et al. The X-Ray Spectrum of the Seyfert I Galaxy Markarian 766: Dusty Warm Absorber or Relativistic Emission Lines?

Ogloza, W. See Mukadem, Anjum S., et al. Constraining the Evolution of ZZ Ceti.

Ogura, Katsuo. See Itoh, Yoichi, et al. Interferometric Observations of the T Tauri Stars in the MBM 12 Cloud.

Oguri, Masamune. Gravitational Lensing Magnification and Time Delay Statistics for Distant Supernovae. *Masamune Oguri, Yasushi Suto, & Edwin L. Turner.* 583, 584 (2003)

Decaying Cold Dark Matter and the Evolution of the Cluster Abundance. *Masamune Oguri, Keitaro Takahashi, Hiroshi Ohno, & Kei Kotake.* 597, 645 (2003)

Arc Statistics in Triaxial Dark Matter Halos: Testing the Collisionless Cold Dark Matter Paradigm. *Masamune Oguri, Jounghun Lee, & Yasasushi Suto.* 599, 7 (2003)

O'Hara, Timothy B. The Dust Ring of Luminous Blue Variable Candidate HD 168625: Infrared Observations and Model Calculations. *Timothy B. O'Hara, Margaret Meixner, Angela K. Speck, Toshiya Ueta, & Matthew Bobrowsky.* 598, 1255 (2003)

Ohashi, Nagayoshi. Interaction between the Outflow and the Core in IRAM 04191+1522. *Shigehisa Takakuwa, Nagayoshi Ohashi, & Naomi Hirano.* 590, 932 (2003)

Molecular Evolution in Collapsing Prestellar Cores. II. The Effect of Grain-Surface Reactions. *Yuri Aikawa, Nagayoshi Ohashi, & Eric Herbst.* 593, 906 (2003)

Ohashi, T. *Chandra* Observation of the Core of the Galaxy Cluster AWM 7. *T. Furusho, N. Y. Yamasaki, & T. Ohashi.* 596, 181 (2003)

Ohishi, M. See Enomoto, R., et al. Search for TeV Gamma Rays from SN 1987A in 2001.

Ohishi, Masatoshi. See Kamegai, Kazuhisa, et al. Distribution of the C I Emission in the ρ Ophiuchi Dark Cloud.

Ohishi, Michiko. Dense Gas Clouds and the Unidentified EGRET Sources. *Mark Walker, Masaki Mori, & Michiko Ohishi.* 589, 810 (2003)

Ohki, K. Cause of Proton Depletion in Solar Impulsive Particle Events. *K. Ohki.* 586, 617 (2003)

Ohmori, N. See Watanabe, K., et al. Solar Neutron Event in Association with a Large Solar Flare on 2000 November 24.

Ohnishi, K. See Sumi, T., et al. Microlensing Optical Depth toward the Galactic Bulge from Microlensing Observations during 2000 with Difference Image Analysis.

See Torii, K., et al. The Earliest Optical Observations of GRB 30329.

Ohnishi, M. See Amenomori, M., et al. Multi-TeV Gamma-Ray Flares from Markarian 421 in 2000 and 2001 Observed with the Tibet Air Shower Array.

Ohno, Hiroshi. Probing Intracluster Magnetic Fields with Cosmic Microwave Background Polarization. *Hiroshi Ohno, Masahiro Takada, Klaus Dolag, Matthias Bartelmann, & Naoshi Sugiyama.* 584, 599 (2003)

Decaying Cold Dark Matter and the Evolution of the Cluster Abundance. *Masamune Oguri, Keitaro Takahashi, Hiroshi Ohno, & Kei Kotake.* 597, 645 (2003)

Ohsuga, K. Spectra from a Magnetic Reconnection–heated Corona in Active Galactic Nuclei. *B. F. Liu, S. Mineshige, & K. Ohsuga.* 587, 571 (2003)

Ohsuga, Ken. Spectral Energy Distribution in Supercritical Disk Accretion Flows through Photon-trapping Effects. *Ken Ohsuga, Shin Mineshige, & Ken-ya Watarai.* 596, 429 (2003)

Ohta, I. See Amenomori, M., et al. Multi-TeV Gamma-Ray Flares from Markarian 421 in 2000 and 2001 Observed with the Tibet Air Shower Array.

Ohta, K. See Shimasaku, K., et al. Subaru Deep Survey. IV. Discovery of a Large-Scale Structure at Redshift $\simeq$5.

Ohta, Kouji. Optical Identification of the *ASCA* Medium Sensitivity Survey in the Northern Sky: Nature of Hard X-Ray–Selected Luminous Active Galactic Nuclei. *Masayuki Akiyama, Yoshihiro Ueda, Kouji Ohta, Tadayuki Takahashi, & Toru Yamada.* 148, 275 (2003)

Optical Identification of the *ASCA* Lynx Deep Survey: An Association of Quasi-Stellar Objects and a Supercluster at $z = 1.3$? *Kouji Ohta, Masayuki Akiyama, Yoshihiro Ueda, Toru Yamada, Kouichiro Nakanishi, Gavin B. Dalton, Yashushi Ogasaka, Tsuneo Kii, & Kiyoshi Hayashida.* 598, 210 (2003)

Cosmological Evolution of the Hard X-Ray Active Galactic Nucleus Luminosity Function and the Origin of the Hard X-Ray Background.

Yoshihiro Ueda, Masayuki Akiyama, Kouji Ohta, & Takamitsu Miyaji. 598, 886 (2003)

OHTA, YASUHIRO. Evolution of the Cosmological Density Distribution Function from the Local Collapse Model. *Yasuhiro Ohta, Issha Kayo, & Atsushi Taruya.* 589, 1 (2003)

OHYAMA, Y. See SHIMASAKU, K., et al. Subaru Deep Survey. IV. Discovery of a Large-Scale Structure at Redshift $\simeq$5.

See KAWABATA, K. S., et al. On the Spectrum and Spectropolarimetry of Type Ic Hypernova SN 2003dh/GRB 030329.

OHYAMA, YOUICHI. On the Origin of Lyα Blobs at High Redshift: Kinematic Evidence of a Hyperwind Galaxy at $z = 3.1$. *Youichi Ohyama, Yoshiaki Taniguchi, Koji S. Kawabata, Yasuhiro Shioya, Takashi Murayama, Tohru Nagao, Tadafumi Takata, Masanori Iye, & Michitoshi Yoshida.* 591, L9 (2003)

OISHI, JEFFREY. Cassiopeia A and Its Clumpy Presupernova Wind. *Roger A. Chevalier & Jeffrey Oishi.* 593, L23 (2003)

OJHA, D. K. A Ring-Shaped Embedded Young Stellar (Proto)Cluster. *M. S. Nanda Kumar, D. K. Ojha, & C. J. Davis.* 598, 1107 (2003)

OKA, T. See THORBURN, J. A., et al. Some Diffuse Interstellar Bands Related to Interstellar C_2 Molecules.

OKA, TAKESHI. Observations of C_3 In Translucent Sight Lines. *Takeshi Oka, Julie A. Thorburn, Benjamin J. McCall, Scott D. Friedman, Lewis M. Hobbs, Paule Sonnentrucker, Daniel E. Welty, & Donald G. York.* 582, 823 (2003)

OKA, TOMOHARU. See KAMEGAI, KAZUHISA, et al. Distribution of the C I Emission in the ρ Ophiuchi Dark Cloud.

OKABE, NOBUHIRO. Spontaneous Generation of the Magnetic Field and Suppression of the Heat Conduction in Cold Fronts. *Nobuhiro Okabe & Makoto Hattori.* 599, 964 (2003)

OKADA, N. See BÖTTCHER, M., et al. Coordinated Multiwavelength Observations of BL Lacertae in 2000.

OKADA, NORIO. See KOMIYAMA, YUTAKA, et al. Discovery of Latent Star Formation in the Extended H I Gas around the Local Group Dwarf Irregular Galaxy NGC 6822.

See HAMANA, TAKASHI, et al. Cosmic Shear Statistics in the Suprime-Cam 2.1 Square Degree Field: Constraints on Ω_m and Σ_8.

See SATO, BUN'EI, et al. A Planetary Companion to the G-Type Giant Star HD 104985.

OKADA, TAKAFUMI. See SATO, BUN'EI, et al. A Planetary Companion to the G-Type Giant Star HD 104985.

OKADA, YOKO. Detection of Far-Infrared Features in Star-forming Regions. *Takashi Onaka & Yoko Okada.* 585, 872 (2003)

OKAJIMA, TAKASHI. A Stringent Limit on the Accretion Luminosity of the Possible Central Black Hole in the Globular Cluster M15. *Luis C. Ho, Yuichi Terashima, & Takashi Okajima.* 587, L35 (2003)

OKAMOTO, I. Global Asymptotic Solutions for Magnetohydrodynamic Jets and Winds. *I. Okamoto.* 589, 671 (2003)

OKAMOTO, TAKASHI. Environmental Effects on Evolution of Cluster Galaxies in a Λ-dominated Cold Dark Matter Universe. *Takashi Okamoto & Masahiro Nagashima.* 587, 500 (2003)

Cluster Morphology as a Test of Different Cosmological Models. *Tamon Suwa, Asao Habe, Kohji Yoshikawa, & Takashi Okamoto.* 588, 7 (2003)

OKAMOTO, Y. See TORII, K., et al. The Earliest Optical Observations of GRB 30329.

OKAMOTO, YOSHIKO K. K3-50A: An Ultracompact H II Region Ionized by a Massive Stellar Cluster. *Yoshiko K. Okamoto, Hirokazu Kataza, Takuya Yamashita, Takashi Miyata, Shigeyuki Sako, Shinya Takubo, Mitsuhiko Honda, & Takashi Onaka.* 584, 368 (2003)

Detection of Crystalline Silicates around the T Tauri Star Hen 3-600A. *Mitsuhiko Honda, Hirokazu Kataza, Yoshiko K. Okamoto, Takashi Miyata, Takuya Yamashita, Shigeyuki Sako, Shinya Takubo, & Takashi Onaka.* 585, L59 (2003)

OKAMURA, S. See SHIMASAKU, K., et al. Subaru Deep Survey. IV. Discovery of a Large-Scale Structure at Redshift $\simeq$5.

See MOBASHER, BAHRAM, et al. A Photometric and Spectroscopic Study of Dwarf and Giant Galaxies in the Coma Cluster. IV. The Luminosity Function.

The Transformation of Galaxies within the Large-Scale Structure around a $z = 0.41$ Cluster: Erratum (ApJ, 562, L9 [2001]). *T. Kodama, Ian Smail, F. Nakata, S. Okamura, & R. G. Bower.* 591, L169 (2003) (Orig. paper in 562, L9 (2001))

OKAMURA, SADANORI. See OUCHI, MASAMI, et al. Subaru Deep Survey. II. Luminosity Functions and Clustering Properties of Lyα Emitters at $z = 4.86$ in the Subaru Deep Field.

See TANIGUCHI, YOSHIAKI, et al. The Discovery of a Very Narrow Line Star-forming Object at a Redshift of 5.66.

See KOMIYAMA, YUTAKA, et al. Discovery of Latent Star Formation in the Extended H I Gas around the Local Group Dwarf Irregular Galaxy NGC 6822.

See IYE, MASANORI, et al. ERO R1 in the Field of Cl 0939+4713: Evidence for an S0-Like Galaxy at $z \sim 1.5$.

See BLANTON, MICHAEL R., et al. The Galaxy Luminosity Function and Luminosity Density at Redshift $z = 0.1$.

See BLANTON, MICHAEL R., et al. The Broadband Optical Properties of Galaxies with Redshifts $0.02 < z < 0.22$.

See HAMANA, TAKASHI, et al. Cosmic Shear Statistics in the Suprime-Cam 2.1 Square Degree Field: Constraints on Ω_m and Σ_8.

OKAMURA, SADONORI. See FUJITA, SHINOBU S., et al. The Hα Luminosity Function and Star Formation Rate at $z \approx 0.24$ Based on Subaru Deep Imaging Data.

OKOROKOV, V. A. Images of Astrophysical Masers and Their Variability in a Turbulent Medium: The 25 GHz Methanol Masers. *A. M. Sobolev, W. D. Watson, & V. A. Okorokov.* 590, 333 (2003)

OKSANEN, A. See BÖTTCHER, M., et al. Coordinated Multiwavelength Observations of BL Lacertae in 2000.

OKUMURA, K. See ENOMOTO, R., et al. Search for TeV Gamma Rays from SN 1987A in 2001.

OLBERT, C. M. *Chandra* Detection of a Pulsar Wind Nebula Associated with Supernova Remnant 3C 396. *C. M. Olbert, J. W. Keohane, K. A. Arnaud, K. K. Dyer, S. P. Reynolds, & S. Safi-Harb.* 592, L45 (2003)

OLBRECHTS, P. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

OLIVA, E. Early Star Formation Traced by the Highest Redshift Quasars. *R. Maiolino, Y. Juarez, R. Mujica, N. M. Nagar, & E. Oliva.* 596, L155 (2003)

OLIVE, J.-F. See CREW, G. B., et al. *HETE-2* Localization and Observation of the Bright, X-Ray–rich Gamma-Ray Burst GRB 021211.

OLIVE, JEAN-FRANCOIS. Correlated Timing and Spectral Behavior of 4U 1705−44. *Jean-Francois Olive, Didier Barret, & Marek Gierlinski.* 583, 416 (2003)

OLIVE, KEITH A. On the Baryometric Status of ^{3}He. *Elisabeth Vangioni-Flam, Keith A. Olive, Brian D. Fields, & Michel Cassé.* 585, 611 (2003)

OLIVEIRA, C. M. See ANDRÉ, M. K., et al. Oxygen Gas-Phase Abundance Revisited.

OLIVEIRA, CRISTINA M. Interstellar Deuterium, Nitrogen, and Oxygen Abundances toward GD 246, WD 2331−475, HZ 21, and Lanning 23: Results from the *FUSE* Mission. *Cristina M. Oliveira, Guillaume Hébrard, J. Christopher Howk, Jeffrey W. Kruk, Pierre Chayer, & H. Warren Moos.* 587, 235 (2003)

OLIVIER, E. A. On the Origin of Long Secondary Periods in Semiregular Variables. *E. A. Olivier & P. R. Wood.* 584, 1035 (2003)

OLIVIERO, MAURIZIO. How Well Can We Infer the Properties of the Solar Acoustic Sources? *Stuart M. Jefferies, Giuseppe Severino, Pier-Francesco Moretti, Maurizio Oliviero, & Cynthia Giebink.* 596, L117 (2003)

OLLING, ROB P. The Oort Constants Measured from Proper Motions. *Rob P. Olling & Walter Dehnen.* 599, 274 (2003)

OLSEN, K. Really Cool Stars and the Star Formation History at the Galactic Center. *R. D. Blum, Solange V. Ramírez, K. Sellgren, & K. Olsen.* 597, 323 (2003)

OLSON, K. See DURSI, L. J., et al. The Response of Model and Astrophysical Thermonuclear Flames to Curvature and Stretch.

OLSZEWSKI, E. W. See STANEK, K. Z., et al. Spectroscopic Discovery of the Supernova 2003dh Associated with GRB 030329.

See MATHESON, T., et al. Photometry and Spectroscopy of GRB 03029 and Its Associated Supernova 2003dh: The First Two Months.

O'MEARA, JOHN M. The Cosmological Baryon Density from the Deuterium-to-Hydrogen Ratio in QSO Absorption Systems: D/H toward Q1243+3047. *David Kirkman, David Tytler, Nao Suzuki, John M. O'Meara, & Dan Lubin.* 149, 1 (2003)

OMONT, A. See NERI, R., et al. Interferometric Observations of Powerful CO Emission from Three Submillimeter Galaxies at $z = 2.39$, 2.51, and 3.35.

OMONT, ALAIN. Spatially Resolved Millimeter Interferometry of SMM J02399−0136: A Very Massive Galaxy at $z = 2.8$. *Reinhard*

Genzel, Andrew J. Baker, Linda J. Tacconi, Dieter Lutz, Pierre Cox, Stéphane Guilloteau, & Alain Omont. 584, 633 (2003)

OMUKAI, KAZUYUKI. Formation of the First Stars by Accretion. *Kazuyuki Omukai & Francesco Palla.* 589, 677 (2003)

Observing H_2 Emission in Forming Galaxies. *Kazuyuki Omukai & Tetsu Kitayama.* 599, 738 (2003)

The Mass Spectrum of Metal-free Stars Resulting from Photodissociation Feedback: A Scenario for the Formation of Low-Mass Population III Stars. *Kazuyuki Omukai & Yuzuru Yoshii.* 599, 746 (2003)

ONAKA, TAKASHI. K3-50A: An Ultracompact H II Region Ionized by a Massive Stellar Cluster. *Yoshiko K. Okamoto, Hirokazu Kataza, Takuya Yamashita, Takashi Miyata, Shigeyuki Sako, Shinya Takubo, Mitsuhiko Honda, & Takashi Onaka.* 584, 368 (2003)

Detection of Crystalline Silicates around the T Tauri Star Hen 3-600A. *Mitsuhiko Honda, Hirokazu Kataza, Yoshiko K. Okamoto, Takashi Miyata, Takuya Yamashita, Shigeyuki Sako, Shinya Takubo, & Takashi Onaka.* 585, L59 (2003)

Detection of Far-Infrared Features in Star-forming Regions. *Takashi Onaka & Yoko Okada.* 585, 872 (2003)

O'NEIL, K. Further Discoveries of ^{12}CO in Low Surface Brightness Galaxies. *K. O'Neil, E. Schinnerer, & P. Hofner.* 588, 230 (2003)

The First CO Map of a Low Surface Brightness Galaxy. *K. O'Neil & E. Schinnerer.* 588, L81 (2003)

O'NEIL, KAREN. Galaxy Populations and Evolution in Clusters. IV. Deep H I Observations of Dwarf Elliptical Galaxies in the Virgo Cluster. *Christopher J. Conselice, Karen O'Neil, John S. Gallagher, & Rosemary F. G. Wyse.* 591, 167 (2003)

ONG, R. See HOLDER, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.

See HALL, T. A., et al. Search for TeV Emissions from Pulsars in Binary Systems.

ONG, R. A. See DE LA CALLE PÉREZ, I., et al. Search for High-Energy Gamma Rays from an X-Ray–Selected Blazar Sample.

ONIFER, A. J. The Statistical Sobolev-Rosseland Mean and the Effects of Frequency Redistribution on Wolf-Rayet Wind Driving. *A. J. Onifer & K. G. Gayley.* 590, 473 (2003)

ONISHI, T. High-Latitude Molecular Clouds in an H I Filament toward the MBM 53, 54, and 55 Complex: Existence of an H_2 Cloud with Low CO Intensity. *H. Yamamoto, T. Onishi, A. Mizuno, & Y. Fukui.* 592, 217 (2003)

ONKEN, C. A. Black Hole Masses in Three Seyfert Galaxies. *C. A. Onken, B. M. Peterson, M. Dietrich, A. Robinson, & I. M. Salamanca.* 585, 121 (2003)

OOMENS, JOS. Laboratory Infrared Spectroscopy of Cationic Polycyclic Aromatic Hydrocarbon Molecules. *Jos Oomens, A. G. G. M. Tielens, Boris G. Sartakov, Gert von Helden, & Gerard Meijer.* 591, 968 (2003)

OOSTERBROEK, T. See ISRAEL, G. L., et al. The Infrared Counterpart to the Anomalous X-Ray Pulsar 1RXS J170849−400910.

OOSTERBROEK, TIM. Evidence of a Cyclotron Feature in the Spectrum of the Anomalous X-Ray Pulsar 1RXS J170849−400910. *Nanda Rea, Gian Luca Israel, Luigi Stella, Tim Oosterbroek, Sandro Mereghetti, Lorella Angelini, Sergio Campana, & Stefano Covino.* 586, L65 (2003)

OOSTERLOO, T. A. Fast Outflow of Neutral Hydrogen in the Radio Galaxy 3C 293. *R. Morganti, T. A. Oosterloo, B. H. C. Emonts, J. M. van der Hulst, & C. N. Tadhunter.* 593, L69 (2003)

OPHER, MERAV. Probing the Edge of the Solar System: Formation of an Unstable Jet-Sheet. *Merav Opher, Paulett C. Liewer, Tamas I. Gombosi, Ward Manchester, Darren L. DeZeeuw, Igor Sokolov, & Gabor Toth.* 591, L61 (2003)

OPHER, R. Numerical Simulations of Astrophysical Jets from Keplerian Disks with Periodic Ejection. *B. F. Vitorino, V. Jatenco-Pereira, & R. Opher.* 592, 332 (2003)

OPPENHEIMER, BEN R. The Structure of High Strehl Ratio Point-Spread Functions. *Marshall D. Perrin, Anand Sivaramakrishnan, Russell B. Makidon, Ben R. Oppenheimer, & James R. Graham.* 596, 702 (2003)

ORD, S. PSR J1909−3744: A Binary Millisecond Pulsar with a Very Small Duty Cycle. *B. A. Jacoby, M. Bailes, M. H. van Kerkwijk, S. Ord, A. Hotan, S. R. Kulkarni, & S. B. Anderson.* 599, L99 (2003)

ORD, S. M. Self-Consistency of Relativistic Observables with General Relativity in the White Dwarf–Neutron Star Binary PSR J1141−6545. *M. Bailes, S. M. Ord, H. S. Knight, & A. W. Hotan.* 595, L49 (2003)

ORIBE, T. See TORII, K., et al. The Earliest Optical Observations of GRB 30329.

ORIGLIA, L. The Puzzling Dynamical Status of the Core of the Globular Cluster NGC 6752. *F. R. Ferraro, A. Possenti, E. Sabbi, P. Lagani, R. T. Rood, N. D'Amico, & L. Origlia.* 595, 179 (2003)

ORIGLIA, LIVIA. A Near-Infrared Spectroscopic Screening of the Red Giant Populations in ω Centauri. *Livia Origlia, Francesco R. Ferraro, Michele Bellazzini, & Elena Pancino.* 591, 916 (2003)

ORIO, M. See DRAKE, JEREMY J., et al. The Extraordinary X-Ray Light Curve of the Classical Nova V1494 Aquilae (1999 No. 2) in Outburst: The Discovery of Pulsations and a "Burst."

See NESS, J.-U., et al. A *Chandra* Low Energy Transmission Grating Spectrometer Observation of V4743 Sagittarii: A Supersoft X-Ray Source and a Violently Variable Light Curve.

ORIO, MARINA. An *XMM-Newton* Observation of Nova LMC 1995: A Bright Supersoft X-Ray Source. *Marina Orio, Wouter Hartmann, Martin Still, & Jochen Greiner.* 594, 435 (2003)

ORITO, MANABU. Nucleosynthesis in Baryon-Rich Outflows Associated with Gamma-Ray Bursts. *Susumu Inoue, Nobuyuki Iwamoto, Manabu Orito, & Mariko Terasawa.* 595, 294 (2003)

ORLANDINI, M. Spectral and Temporal Behavior of the Black Hole Candidate XTE J1118+480 as Observed with *BeppoSAX*. *F. Frontera, L. Amati, A. A. Zdziarski, T. Belloni, S. Del Sordo, N. Masetti, M. Orlandini, & E. Palazzi.* 592, 1110 (2003)

ORLANDO, A. See BATTISTELLI, E. S., et al. Triple Experiment Spectrum of the Sunyaev-Zel'dovich Effect in the Coma Cluster: H_0.

ORMES, JONATHAN F. Challenging Cosmic-Ray Propagation with Antiprotons: Evidence for a "Fresh" Nuclei Component? *Igor V. Moskalenko, Andrew W. Strong, Stepan G. Mashnik, & Jonathan F. Ormes.* 586, 1050 (2003)

OROSZ, J. Resolved Jets and Long-Period Black Hole X-Ray Novae. *M. R. Garcia, J. M. Miller, J. E. McClintock, A. R. King, & J. Orosz.* 591, 388 (2003)

OROSZ, J. A. X-Ray Emission from the Jets of XTE J1550−564. *P. Kaaret, S. Corbel, J. A. Tomsick, R. Fender, J. M. Miller, J. A. Orosz, T. Tzioumis, & R. Wijnands.* 582, 945 (2003)

OROSZ, JEROME A. X-Ray Jet Emission from the Black Hole X-Ray Binary XTE J1550−564 with *Chandra* in 2000. *John A. Tomsick, Stéphane Corbel, Rob Fender, Jon M. Miller, Jerome A. Orosz, Tasso Tzioumis, Rudy Wijnands, & Philip Kaaret.* 582, 933 (2003)

Multiwavelength Spectrum of the Black Hole XTE J1118+480 in Quiescence. *Jeffrey E. McClintock, Ramesh Narayan, Michael R. Garcia, Jerome A. Orosz, Ronald A. Remillard, & Stephen S. Murray.* 593, 435 (2003)

Ultraviolet Spectra of Cataclysmic Variable Accretion Disks with Nonsteady $T(r)$ Laws. *Jerome A. Orosz & Richard A. Wade.* 593, 1032 (2003)

See TOMSICK, JOHN A., et al. *Chandra* Detections of Two Quiescent Black Hole X-Ray Transients.

ORR, K. A Bayesian Analysis of the Cepheid Distance Scale. *Thomas G. Barnes III, W. H. Jefferys, J. O. Berger, Peter J. Mueller, K. Orr, & R. Rodriguez.* 592, 539 (2003)

ORTA, J. A. Magnetohydrodynamic Shock Heating of the Solar Corona. *J. A. Orta, M. A. Huerta, & G. C. Boynton.* 596, 646 (2003)

OSCOZ, ALEXANDER. See COLLEY, WESLEY N., et al. Around-the-Clock Observations of the Q9057+561A,B Gravitationally Lensed Quasar. II. Results for the Second Observing Season.

OSORIO, MAYRA. A Comprehensive Study of the L1551 IRS 5 Binary System. *Mayra Osorio, Paolo D'Alessio, James Muzerolle, Nuria Calvet, & Lee Hartmann.* 586, 1148 (2003)

OSTEN, RACHEL A. *Chandra*, *Extreme Ultraviolet Explorer*, and Very Large Array Observations of the Active Binary System σ^2 Coronae Borealis. *Rachel A. Osten, Thomas R. Ayres, Alexander Brown, Jeffrey L. Linsky, & Anita Krishnamurthi.* 582, 1073 (2003)

Space Telescope Imaging Spectrograph Survey of Far-Ultraviolet Coronal Forbidden Lines in Late-Type Stars. *Thomas R. Ayres, Alexander Brown, Graham M. Harper, Rachel A. Osten, Jeffrey L. Linsky, Brian E. Wood, & Seth Redfield.* 583, 963 (2003)

ØSTENSEN, R. See GREEN, E. M., et al. Discovery of a New Class of Pulsating Stars: Gravity-Mode Pulsators among Subdwarf B Stars.

OSTHEIMER, JAMES C. A Two Micron All Sky Survey All-Sky View of the Sagittarius Dwarf Galaxy. I. Morphology of the Sagittarius Core and Tidal Arms. *Steven R. Majewski, M. F. Skrutskie, Martin D. Weinberg, & James C. Ostheimer.* 599, 1082 (2003)

OSTHEIMER, JAMIE. See DINESCU, DANA I., et al. Absolute Proper Motions to $B \sim 22.5$. V. Detection of Sagittarius Dwarf Spheroidal Debris in the Direction of the Galactic Anticenter: Erratum (ApJ, 575, L67 [2002]).

OSTORERO, L. See BÖTTCHER, M., et al. Coordinated Multiwavelength Observations of BL Lacertae in 2000.

OSTRIKER, EVE C. Spectral Properties of Compressible Magnetohydrodynamic Turbulence from Numerical Simulations. *Jason G. Verstuto, Eve C. Ostriker, & James M. Stone.* 590, 858 (2003)

Analysis of Clumps in Molecular Cloud Models: Mass Spectrum, Shapes, Alignment, and Rotation. *Charles F. Gammie, Yen-Ting Lin, James M. Stone, & Eve C. Ostriker.* 592, 203 (2003)

Three-Dimensional Simulations of Parker, Magneto-Jeans, and Swing Instabilities in Shearing Galactic Gas Disks: Erratum (ApJ, 581, 1080 [2002]). *Woong-Tae Kim, Eve C. Ostriker, & James M. Stone.* 595, 574 (2003) (Orig. paper in 581, 1080 (2002))

Magnetorotationally Driven Galactic Turbulence and the Formation of Giant Molecular Clouds. *Woong-Tae Kim, Eve C. Ostriker, & James M. Stone.* 599, 1157 (2003)

OSTRIKER, JEREMIAH P. See BAHCALL, NETA A., et al. The Cluster Mass Function from Early Sloan Digital Sky Survey Data: Cosmological Implications.

Tree Particle-Mesh: An Adaptive, Efficient, and Parallel Code for Collisionless Cosmological Simulation. *Paul Bode & Jeremiah P. Ostriker.* 145, 1 (2003)

Gravitational Lensing by a Compound Population of Halos: Standard Models. *Li-Xin Li & Jeremiah P. Ostriker.* 595, 603 (2003)

The Probability Distribution Function of Light in the Universe: Results from Hydrodynamic Simulations. *Jeremiah P. Ostriker, Kentaro Nagamine, Renyue Cen, & Masataka Fukugita.* 597, 1 (2003)

Metallicity Evolution of Damped Lyα Systems in ΛCDM Cosmology. *Renyue Cen, Jeremiah P. Ostriker, Jason X. Prochaska, & Arthur M. Wolfe.* 598, 741 (2003)

Combining *Wilkinson Microwave Anisotropy Probe* and Sloan Digital Sky Survey Quasar Data on Reionization Constrains Cosmological Parameters and Star Formation Efficiency. *Weihsueh A. Chiu, Xiaohui Fan, & Jeremiah P. Ostriker.* 599, 759 (2003)

OSTROWSKI, M. High-Energy Gamma Rays From FR I Jets. *L. Stawarz, M. Sikora, & M. Ostrowski.* 597, 186 (2003)

OTT, JÜRGEN. *Chandra* Observations of Expanding Shells in the Dwarf Starburst Galaxy NGC 3077. *Jürgen Ott, Crystal L. Martin, & Fabian Walter.* 594, 776 (2003)

OTT, T. The Position of Sagittarius A*. II. Accurate Positions and Proper Motions of Stellar SiO Masers near the Galactic Center. *M. J. Reid, K. M. Menten, R. Genzel, T. Ott, R. Schödel, & A. Eckart.* 587, 208 (2003)

See GENZEL, R., et al. The Stellar Cusp around the Supermassive Black Hole in the Galactic Center.

Stellar Dynamics in the Central Arcsecond of Our Galaxy. *R. Schödel, T. Ott, R. Genzel, A. Eckart, N. Mouawad, & T. Alexander.* 596, 1015 (2003)

A Geometric Determination of the Distance to the Galactic Center. *F. Eisenhauer, R. Schödel, R. Genzel, T. Ott, M. Tecza, R. Abuter, A. Eckart, & T. Alexander.* 597, L121 (2003)

OTTE, B. Probing O VI Emission in the Halos of Edge-On Spiral Galaxies. *B. Otte, E. M. Murphy, J. C. Howk, Q. D. Wang, W. R. Oegerle, & K. R. Sembach.* 591, 821 (2003)

OTTE, BIRGIT. *Far Ultraviolet Spedtroscopic Explorer* Detection of Galactic O VI Emission in the Halo above the Perseus Arm. *Birgit Otte, W. Van Dyke Dixon, & Ravi Sankrit.* 586, L53 (2003)

OUCHI, M. See SHIMASAKU, K., et al. Subaru Deep Survey. IV. Discovery of a Large-Scale Structure at Redshift $\simeq$5.

OUCHI, MASAMI. Subaru Deep Survey. II. Luminosity Functions and Clustering Properties of Lyα Emitters at z = 4.86 in the Subaru Deep Field. *Masami Ouchi, Kazuhiro Shimasaku, Hisanori Furusawa, Masayuki Miyazaki, Mamoru Doi, Masaru Hamabe, Tomoki Hayashino, Masahiko Kimura, Keiichi Kodaira, Yutaka Komiyama, Yuichi Matsuda, Satoshi Miyazaki, Fumiaki Nakata, Sadanori Okamura, Maki Sekiguchi, Yasuhiro Shioya, Hajime Tamura, Yoshiaki Taniguchi, Masafumi Yagi, & Naoki Yasuda.* 582, 60 (2003)

See KOMIYAMA, YUTAKA, et al. Discovery of Latent Star Formation in the Extended H I Gas around the Local Group Dwarf Irregular Galaxy NGC 6822.

See HAMANA, TAKASHI, et al. Cosmic Shear Statistics in the Suprime-Cam 2.1 Square Degree Field: Constraints on Ω_m and Σ_8.

OUCHI, T. See AMENOMORI, M., et al. Multi-TeV Gamma-Ray Flares from Markarian 421 in 2000 and 2001 Observed with the Tibet Air Shower Array.

OUYED, RACHID. Three-Dimensional Simulations of Jets from Keplerian Disks: Self-Regulatory Stability. *Rachid Ouyed, David A. Clarke, & Ralph E. Pudritz.* 582, 292 (2003)

OWEN, D. New Velocity Distribution for Cold Dark Matter in the Context of the Eddington Theory. *J. D. Vergados & D. Owen.* 589, 17 (2003)

OWEN, F. N. Radio-selected Galaxis in Very Rich Clusters at $z \leq 0.25$. I. Multiwavelength Observations and Data Reduction Techniques. *G. E. Morrison, F. N. Owen, M. J. Ledlow, W. C. Keel, J. M. Hill, W. Voges, & T. Herter.* 146, 267 (2003)

OWOCKI, STANLEY P. High-Resolution *Chandra* Spectroscopy of τ Scorpii: A Narrow-Line X-Ray Spectrum from a Hot Star. *David H. Cohen, Geneviève E. de Messières, Joseph J. MacFarlane, Nathan A. Miller, Joseph P. Cassinelli, Stanley P. Owocki, & Duane A. Liedahl.* 586, 495 (2003)

X-Ray Emission-Line Profile Modeling of O Stars: Fitting a Spherically Symmetric Analytic Wind-Shock Model to the *Chandra* Spectrum of ζ Puppis. *Roban H. Kramer, David H. Cohen, & Stanley P. Owocki.* 592, 532 (2003)

OYA, SHIN. See GOTO, MIWA, et al. Carbon Isotope Ratio in $^{12}CO/^{13}CO$ toward Local Molecular Clouds with Near-Infrared High-Resolution Spectroscopy of Vibrational Transition Bands.

OZAWA, S. See AMENOMORI, M., et al. Multi-TeV Gamma-Ray Flares from Markarian 421 in 2000 and 2001 Observed with the Tibet Air Shower Array.

OZEKI, HIROYUKI. See KAMEGAI, KAZUHISA, et al. Distribution of the C I Emission in the ρ Ophiuchi Dark Cloud.

Laboratory Spectrum of the $1_{11}-2_{02}$ Rotational Transition of CH_2. *Ernest A. Michael, Frank Lewen, Gisbert Winnewisser, Hiroyuki Ozeki, Hideta Habara, & Eric Herbst.* 596, 1356 (2003)

OZEL, FERYAL. Spectral Lines from Rotating Neutron Stars. *Feryal Ozel & Dimitrios Psaltis.* 582, L31 (2003)

PACIESAS, WILLIAM S. How Sample Completeness Affects Gamma-Ray Burst Classification. *Jon Hakkila, Timothy W. Giblin, Richard J. Roiger, David J. Haglin, William S. Paciesas, & Charles A. Meegan.* 582, 320 (2003)

See MITROFANOV, IGOR G., et al. Comparison of Redshift-known Gamma-Ray Bursts with the Main Groups of Bright BATSE Events.

PACINI, ALESSANDRA A. Properties of Fast Submillimeter Time Structures during a Large Solar Flare. *Jean-Pierre Raulin, Pierre Kaufmann, Carlos G. Giménez de Castro, Alessandra A. Pacini, Vladimir S. Makhmutov, Hugo Levato, & Marta Rovira.* 592, 580 (2003)

PACINI, FRANCO. Precursor Plerionic Activity and High-Energy Gamma-Ray Emission in the Supranova Model of Gamma-Ray Bursts. *Susumu Inoe, Dafne Guetta, & Franco Pacini.* 583, 379 (2003)

PACKHAM, CHRIS. Mid-Infrared Imaging of the Protostellar Binary L1448N IRS 3(A,B). *David R. Ciardi, Charles M. Telesco, Jonathan P. Williams, R. Scott Fisher, Chris Packham, Robert Piña, & James Radomski.* 585, 392 (2003)

PACKHAM, CHRISTOPHER. Resolved Mid-Infrared Emission in the Narrow-Line Region of NGC 4151. *James T. Radomski, Robert K. Piña, Christopher Packham, Charles M. Telesco, James M. De Buizer, R. Scott Fisher, & A. Robinson.* 587, 117 (2003)

PACZYŃSKI, B. Geometrically Thin Disk Accreting into a Black Hole. *N. Afshordi & B. Paczyński.* 592, 354 (2003)

Ellipsoidal Variability in the OGLE Planetary Transit Candidates. *E. Sirko & B. Paczyński.* 592, 1217 (2003)

PADGETT, DEBORAH L. The Circumstellar Disk of the Butterfly Star in Taurus. *Sebastian Wolf, Deborah L. Padgett, & Karl R. Stapelfeldt.* 588, 373 (2003)

Hubble Space Telescope WFPC2 Imaging of the Disk and Jet of HV Tauri C. *Karl R. Stapelfeldt, François Ménard, Alan M. Watson, John E. Krist, Catherine Dougados, Deborah L. Padgett, & Wolfgang Brandner.* 589, 410 (2003)

PADIN, S. See MASON, B. S., et al. The Anisotropy of the Microwave Background to l = 3500: Deep Field Observatons with the Cosmic Background Imager.

See PEARSON, T. J., et al. The Anisotropy of the Microwave Background to l = 3500: Mosaic Observations with the Cosmic Background Imager.

See Sievers, J. L., et al. Cosmological Parameters from Cosmic Background Imager Observations and Comparisons with BOOMERANG, DASI, and MAXIMA.

Padmanabhan, Urmila. Fe XXV and Fe XXVI Diagnostics of the Black Hole and Accretion Disk in Active Galaxies: *Chandra* Time-resolved Grating Spectroscopy of NGC 7314. *Tahir Yaqoob, Ian M. George, Timothy R. Kallman, Urmila Padmanabhan, Kimberly A. Weaver, & T. Jane Turner.* 596, 85 (2003)

Padoan, P. Photoelectric Heating and [C II] Cooling in Translucent Clouds: Results for Cloud Models Based on Simulations of Compressible Magnetohydrodynamic Turbulence. *M. Juvela, P. Padoan, & R. Jimenez.* 591, 258 (2003)

Padoan, Paolo. Structure Function Scaling in the Taurus and Perseus Molecular Cloud Complexes. *Paolo Padoan, Stanislav Boldyrev, William Langer, & Ake Nordlund.* 583, 308 (2003)

The Spectral Correlation Function of Molecular Clouds: A Statistical Test for Theoretical Models. *Paolo Padoan, Alyssa A. Goodman, & Mika Juvela.* 588, 881 (2003)

Padovani, Paolo. What Types of Jets Does Nature Make? A New Population of Radio Quasars. *Paolo Padovani, Eric S. Perlman, Hermine Landt, Paolo Giommi, & Matteo Perri.* 588, 128 (2003)

Paerels, F. Two Types of X-Ray Spectra in Cataclysmic Variables. *Koji Mukai, A. Kinkhabwala, J. R. Peterson, S. M. Kahn, & F. Paerels.* 586, L77 (2003)

High-Resolution Grating Spectroscopy of GRB 020405 with the *Chandra* Low Energy Transmission Grating Spectrometer. *N. Mirabal, F. Paerels, & J. P. Halpern.* 587, 128 (2003)

Paerels, F. B. S. High Resolution X-Ray Spectroscopic Constraints on Cooling-Flow Models for Clusters of Galaxies. *J. R. Peterson, S. M. Kahn, F. B. S. Paerels, J. S. Kaastra, T. Tamura, J. A. M. Bleeker, C. Ferrigno, & J. G. Jernigan.* 590, 207 (2003)

See Crenshaw, D. M., et al. Simultaneous Ultraviolet and X-Ray Spectroscopy of the Seyfert 1 Galaxy NGC 5548. I. Physical Conditions in the Ultraviolet Absorbers.

Paerels, Frederik. Resolving the Effects of Resonant X-Ray Line Scattering in Centaurus X-3 with *Chandra*. *Patrick S. Wojdowski, Duane A. Liedahl, Masao Sako, Steven M. Kahn, & Frederik Paerels.* 582, 959 (2003)

See Watanabe, Shin, et al. Detection of a Fully Resolved Compton Shoulder of the Iron Kα Line in the *Chandra* X-Ray Spectrum of GX 301-2.

An X-Ray Jet Discovered by *Chandra* in the $z = 4.3$ Radio-selected Quasar GB 1508+5714. *Aneta Siemiginowska, Randall K. Smith, Thomas L. Aldcroft, D. A. Schwartz, Frederik Paerels, & Andreea O. Petric.* 598, L15 (2003)

Paerels, Frits. Atomic Spectral Features during Thermonuclear Flashes on Neutron Stars. *Lars Bildsten, Philip Chang, & Frits Paerels.* 591, L29 (2003)

See Sako, Masao, et al. Can a Dusty Warm Absorber Model Reproduce the Soft X-Ray Spectra of MCG -6-30-15 and Markarian 766?

Paesold, G. Acceleration and Enrichment of ^{3}He in Impulsive Solar Flares by Electron Firehose Waves. *G. Paesold, R. Kallenbach, & A. O. Benz.* 582, 495 (2003)

Pagani, Claudio. Host Galaxies of Low-Z Radio-loud Quasars: A Search of *Hubble Space Telescope* Archives. *Claudio Pagani, Renato Falomo, & Aldo Treves.* 596, 830 (2003)

Page, L. See Bennett, C. L., et al. The *Microwave Anisotropy Probe* Mission.

The Optical Design and Characterization of the *Microwave Anisotropy Probe*. *L. Page, C. Jackson, C. Barnes, C. Bennett, M. Halpern, G. Hinshaw, N. Jarosik, A. Kogut, M. Limon, S. S. Meyer, D. N. Spergel, G. S. Tucker, D. T. Wilkinson, E. Wollack, & E. L. Wright.* 585, 566 (2003)

See Jarosik, N., et al. Design, Implementation, and Testing of the *Microwave Anisotropy Probe* Radiometers.

See Bennett, C. L., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Preliminary Maps and Basic Results.

See Jarosik, N., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: On-Orbit Radiometer Characterization.

First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Beam Profiles and Window Functions. *L. Page, C. Barnes, G. Hinshaw, D. N. Spergel, J. L. Weiland, E. Wollack, C. L. Bennett, M. Halpern, N. Jarosik, A. Kogut, M. Limon, S. S. Meyer, G. S. Tucker, & E. L. Wright.* 148, 39 (2003)

See Barnes, C., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Galactic Signal Contamination from Sidelobe Pickup.

See Hinshaw, G., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Data Processing Methods and Systematic Errors Limits.

See Bennett, C. L., et al. First-Year *Wilkinson Microwave Anisotrophy Probe* (*WMAP*) Observations: Foreground Emission.

See Komatsu, E., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Tests of Gaussianity.

See Hinshaw, G., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: The Angular Power Spectrum.

See Kogut, A., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Temperature-Polarization Correlation.

See Spergel, D. N., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Determination of Cosmological Parameters.

See Verde, L., et al. First-Year *Wilkinson Microwave Anisotrophy Probe* (*WMAP*) Observations: Parameter Estimation Methodology.

See Peiris, H. V., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Implications for Inflation.

First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Interpretation of the TT and TE Angular Power Spectrum Peaks. *L. Page, M. R. Nolta, C. Barnes, C. L. Bennett, M. Halpern, G. Hinshaw, N. Jarosik, A. Kogut, M. Limon, S. S. Meyer, H. V. Peiris, D. N. Spergel, G. S. Tucker, E. Wollack, & E. L. Wright.* 148, 233 (2003)

Page, L. A. The MAT/TOCO Measurement of the Angular Power Spectrum of the Cosmic Microwave Background at 30 and 40 GHz. *M. R. Nolta, M. J. Devlin, W. B. Dorwart, A. D. Miller, L. A. Page, J. Puchalla, E. Torbet, & H. T. Tran.* 598, 97 (2003)

Page, M. See Holder, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.

See de la Calle Pérez, I., et al. Search for High-Energy Gamma Rays from an X-Ray–Selected Blazar Sample.

Page, M. J. See Mason, K. O., et al. The X-Ray Spectrum of the Seyfert 1 Galaxy Markarian 766: Dusty Warm Absorber or Relativistic Emission Lines?

Page, Mathew J. See Sako, Masao, et al. Can a Dusty Warm Absorber Model Reproduce the Soft X-Ray Spectra of MCG -6-30-15 and Markarian 766?

Pahre, M. A. Stellar Masses of Luminous Compact Blue Galaxies at Redshifts $z = 0.4$–1.2. *R. Guzmán, G. Östlin, D. Kunth, M. A. Bershady, D. C. Koo, & M. A. Pahre.* 586, L45 (2003)

Paicentini, F. See Crill, B. P., et al. BOOMERANG: A Balloon-Borne Millimeter-Wave Telescope and Total Power Receiver for Mapping Anisotropy in the Cosmic Microwave Background.

Pain, C. C. Acoustic Wave Propagation in the Sun: Implications for Wave Field and Time-Distance Helioseismology. *C. H. Tong, M. J. Thompson, M. R. Warner, S. P. Rajaguru, & C. C. Pain.* 582, L121 (2003)

Helioseismic Signals and Wave Field Helioseismology. *C. H. Tong, M. J. Thompson, M. R. Warner, & C. C. Pain.* 593, 1242 (2003)

The Significance of Density and Attenuation in the Local Helioseismology. *C. H. Tong, M. J. Thompson, M. R. Warner, & C. C. Pain.* 596, L263 (2003)

Pain, R. See Knop, R. A., et al. New Constraints on Ω_M, Ω_Λ, and w from an Independent Set of 11 High-Redshift Supernovae Observed with the *Hubble Space Telescope*.

Paine, C. G. See Crill, B. P., et al. BOOMERANG: A Balloon-Borne Millimeter-Wave Telescope and Total Power Receiver for Mapping Anisotropy in the Cosmic Microwave Background.

Pak, Igor. Laboratory Precision Measurements of the Rotational Spectrum of $^{12}C^{17}O$ and $^{13}C^{17}O$. *Gabriele Klapper, Leonid Surin, Frank Lewen, Holger S. P. Müller, Igor Pak, & Gisbert Winnewisser.* 582, 262 (2003)

Pal, S. Possible Photometric Evidence of Ejection of Bullet-like Features in the Relativistic Jet Source SS 433. *Sandip K. Chakrabarti, S. Pal, A. Nandi, B. G. Anandarao, & Soumen Mondal.* 595, L45 (2003)

Palazzi, E. Spectral and Temporal Behavior of the Black Hole Candidate XTE J1118+480 as Observed with *BeppoSAX*. *F. Frontera, L. Amati, A. A. Zdziarski, T. Belloni, S. Del Sordo, N. Masetti, M. Orlandini, & E. Palazzi.* 592, 1110 (2003)

See Hjorth, J., et al. Very High Column Density and Small Reddening toward GRB 020124 at $z = 3.20$.

See Greiner, J., et al. GRB 011121: A Collimated Outflow into Wind-blown Surroundings.

PALLA, FRANCESCO. Formation of the First Stars by Accretion. *Kazuyuki Omukai & Francesco Palla.* 589, 677 (2003)

PALLADINO, E. See BATTISTELLI, E. S., et al. Triple Experiment Spectrum of the Sunyaev-Zel'dovich Effect in the Coma Cluster: H_0.

PALLASSINI, R. See HOLDER, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope. See DE LA CALLE PÉREZ, I., et al. Search for High-Energy Gamma Rays from an X-Ray–Selected Blazar Sample.

PALMA, CHRISTOPHER. The Multiphase Absorption Systems toward PG 1206+459. *Jie Ding, Jane C. Charlton, Christopher W. Churchill, & Christopher Palma.* 590, 746 (2003)

PALMER, D. See COLAVITA, M., et al. Observations of DG Tauri with the Keck Interferometer.

PALMER, PATRICK. A Sensitive Very Large Array Search for Small-Scale Glycine Emission toward OMC-1. *J. M. Hollis, J. A. Pedelty, L. E. Snyder, P. R. Jewell, F. J. Lovas, Patrick Palmer, & S.-Y. Liu.* 588, 353 (2003)

Kinematics of the SGR B2 (N-LMH) Molecular Core. *Jan M. Hollis, J. A. Pedelty, D. A. Boboltz, S.-Y. Liu, L. E. Snyder, Patrick Palmer, F. J. Lovas, & P. R. Jewell.* 596, L235 (2003)

The Formaldehyde Masers in NGC 7538 and G29.96−0.02: Very Long Baseline Array, Multielement Radio-linked Interferometer Network, and Very Large Array Observations. *Ian M. Hoffman, W. M. Goss, Patrick Palmer, & A. M. S. Richards.* 598, 1061 (2003)

Phase-Referenced Very Long Baseline Array Observations of OH Masers at 4765 MHz. *Patrick Palmer, W. M. Goss, & K. E. Devine.* 599, 323 (2003)

PALSHIN, V. Observations of Giant Outbursts from Cygnus X-1. *S. Golenetskii, R. Aptekar, D. Frederiks, E. Mazets, V. Palshin, K. Hurley, T. Cline, & B. Stern.* 596, 1113 (2003)

PALTANI, STÉPHANE. Dynamics of the Lyα and C IV Emitting Gas in 3C 273. *Stéphane Paltani & Marc Türler.* 583, 659 (2003)

PALTRINIERI, BARBARA. Blue Straggler Stars: A Direct Comparison of Star Counts and Population Ratios in Six Galactic Globular Clusters. *Francesco R. Ferraro, Alison Sills, Robert T. Rood, Barbara Paltrinieri, & Roberto Buonanno.* 588, 464 (2003)

PANAGIA, N. See KNOP, R. A., et al. New Constraints on Ω_M, Ω_Λ, and w from an Independent Set of 11 High-Redshift Supernovae Observed with the *Hubble Space Telescope*.

PANAGIA, NINO. The Rate and the Origin of Type Ia Supernovae in Radio Galaxies. *Massimo Della Valle & Nino Panagia.* 587, L71 (2003)

Radio Emission from SN 2001gd in NGC 5033. *Christopher J. Stockdale, Kurt W. Weiler, Schuyler D. Van Dyk, Marcos J. Montes, Nino Panagia, Richard A. Sramek, M. A. Perez-Torres, & J. M. Marcaide.* 592, 900 (2003)

See MICHAEL, ELI, et al. *Hubble Space Telescope* Observations of High-Velocity Lyα and Hα Emission from Supernova Remnant 1987A: The Structure and Development of the Reverse Shock.

PANAITESCU, A. See SCHAEFER, BRADLEY E., et al. GRB 021004: A Massive Progenitor Star Surrounded by Shells.

The Effect of Angular Structure of Gamma-Ray Burst Outflows on the Afterglow Emission. *A. Panaitescu & P. Kumar.* 592, 390 (2003)

PANASYUK, A. Physical Parameters of the 2000 February 11 Coronal Mass Ejection: Ultraviolet Spectra versus White-Light Images. *A. Ciaravella, J. C. Raymond, A. van Ballegooijen, L. Strachan, A. Vourlidas, J. Li, J. Chen, & A. Panasyuk.* 597, 1118 (2003)

PANCINO, ELENA. A Near-Infrared Spectroscopic Screening of the Red Giant Populations in ω Centauri. *Livia Origlia, Francesco R. Ferraro, Michele Bellazzini, & Elena Pancino.* 591, 916 (2003)

Blue Horizontal-Branch Stars in the Sagittarius Dwarf Spheroidal Galaxy. *Lorenzo Monaco, Michele Bellazzini, Francesco R. Ferraro, & Elena Pancino.* 597, L25 (2003)

PANDO, JESUS. Intermittent Features of the Quasar Lyα Transmitted Flux: Results from Cosmological Hydrodynamic Simulations. *Long-Long Feng, Jesus Pando, & Li-Zhi Fang.* 587, 487 (2003)

PANNELLA, MAURILIO. See NAPOLITANO, NICOLA R., et al. Intracluster Stellar Population Properties from *N*-Body Cosmological Simulations. I. Constraints at $z = 0$.

PANNUTI, THOMAS G. *Chandra* X-Ray Observations of the Spiral Galaxy M81. *Douglas A. Swartz, Kajal K. Ghosh, Michael L. McCollough, Thomas G. Pannuti, Allyn F. Tennant, & Kinwah Wu.* 144, 213 (2003)

RXTE, *ROSAT*, and *ASCA* Observations of G347.3−0.5 (RX J1713.7−3946): Probing Cosmic-Ray Acceleration by a Galactic Shell-Type Supernova Remnant. *Thomas G. Pannuti, Glenn E. Allen, John C. Houck, & Steven J. Sturner.* 593, 377 (2003)

PANOV, K. P. See MARCHENKO, S. V., et al. The Unusual 2001 Periastron Passage in the "Clockwork" Colliding-Wind Binary WR 140.

PAOLILLO, M. *ROSAT* HRI Investigation of the NGC 507 X-Ray Halo. *M. Paolillo, G. Fabbiano, G. Peres, & D.-W. Kim.* 586, 850 (2003)

PAPADAKIS, I. E. See BÖTTCHER, M., et al. Coordinated Multiwavelength Observations of BL Lacertae in 2000.

PAPADEROS, P. Discovery of a Double Ring in the Dwarf Galaxy Markarian 409. *A. Gil de Paz, B. F. Madore, K. Noeske, L. M. Cairós, P. Papaderos, & S. A. Silich.* 596, L179 (2003)

PAPADEROS, POLYCHRONIS. Deep Near-Infrared Mapping of Young and Old Stars in Blue Compact Dwarf Galaxies. *Luz M. Cairós, Nicola Caon, Polychronis Papaderos, Kai Noeske, Jose M. Vílchez, Begoña García Lorenzo, & Casiana Muñoz-Tuñón.* 593, 312 (2003)

PAPADOPOULOS, P. P. Molecular Gas in Spiral Galaxies: A New Warm Phase at Large Galactocentric Distances?: Erratum (ApJ, 579, 270 [2002]). *P. P. Papadopoulos, W.-F. Thi, & S. Viti.* 583, 524 (2003) (Orig. paper in 579, 270 (2002))

PAPADOPOULOS, PADELI P. Gas and Dust in the Extremely Red Object ERO J164502+4626.4. *Thomas R. Greve, Rob J. Ivison, & Padeli P. Papadopoulos.* 599, 839 (2003)

PAPALIOLIOS, COSTAS. Theoretical Limb Darkening for Classical Cepheids. II. Corrections for the Geometric Baade-Wesselink Method. *Massimo Marengo, Margarita Karovska, Dimitar D. Sasselov, Costas Papaliolios, John T. Armstrong, & Tyler E. Nordgren.* 589, 968 (2003)

PAPALOIZOU, J. C. B. Runaway Migration and the Formation of Hot Jupiters. *F. S. Masset & J. C. B. Papaloizou.* 588, 494 (2003)

PAPAMASTORAKIS, J. See BÖTTCHER, M., et al. Coordinated Multiwavelength Observations of BL Lacertae in 2000.

PAPENKOVA, M. See MATHESON, T., et al. Photometry and Spectroscopy of GRB 03029 and Its Associated Supernova 2003dh: The First Two Months.

PAPOVICH, CASEY. The Evolution of the Global Stellar Mass Density at $0 < z < 3$. *Mark Dickinson, Casey Papovich, Henry C. Ferguson, & Tamás Budavári.* 587, 25 (2003)

The Internal Ultraviolet–Optical Color Dispersion: Quantifying the Morphological *K*-Correction. *Casey Papovich, Mauro Giavalisco, Mark Dickinson, Christopher J. Conselice, & Henry C. Ferguson.* 598, 827 (2003)

PAQUETTE, J. A. Calcium Abundance in the Solar Wind. *P. Wurz, P. Bochsler, J. A. Paquette, & F. M. Ipavich.* 583, 489 (2003)

PAREDES, J. M. Discovery of a New Radio Galaxy within the Error Box of the Unidentified Gamma-Ray Source 3EG J1735−1500. *J. A. Combi, G. E. Romero, J. M. Paredes, D. F. Torres, & M. Ribó.* 588, 731 (2003)

PARENTI, S. *SOHO-Ulysses* Spring 2000 Quadrature: Coronal Diagnostic Spectrometer and SUMER Results. *S. Parenti, E. Landi, & B. J. I. Bromage.* 590, 519 (2003)

Temporal Evolution of a Streamer Complex: Coronal and in Situ Plasma Parameters. *A. Bemporad, G. Poletto, S. T. Suess, Y.-K. Ko, S. Parenti, P. Riley, M. Romoli, & T. Z. Zurbuchen.* 593, 1146 (2003)

PARETE-KOON, S. A New ^{17}F(p, γ)^{18}Ne Reaction Rate and Its Implications for Nova Nucleosynthesis. *S. Parete-Koon, W. R. Hix, M. S. Smith, S. Starrfield, D. W. Bardayan, M. W. Guidry, & A. Mezzacappa.* 598, 1239 (2003)

PARHI, S. Toward an ab Initio Theory of the Solar Modulation of Cosmic Rays. *S. Parhi, J. W. Bieber, W. H. Matthaeus, & R. A. Burger.* 585, 502 (2003)

PARIEV, V. I. Polarization of Prompt Gamma-Ray Burst Emission: Evidence for Electromagnetically Dominated Outflow. *M. Lyutikov, V. I. Pariev, & R. D. Blandford.* 597, 998 (2003)

PARISE, B. The Hot Core around the Low-Mass Protostar IRAS 16293−2422: Scoundrels Rule! *S. Cazaux, A. G. G. M. Tielens, C. Ceccarelli, A. Castets, V. Wakelam, E. Caux, B. Parise, & D. Teyssier.* 593, L51 (2003)

PARK, CHANGBOM. Observational Strategies of Cosmic Microwave Background Temperature and Polarization Interferometry Experiments. *Chan-Gyung Park, Kin-Wang Ng, Changbom Park, Guo-Chin Liu, & Keiichi Umetsu.* 589, 67 (2003)

PARK, CHAN-GYUNG. Observational Strategies of Cosmic Microwave Background Temperature and Polarization Interferometry Experiments. *Chan-Gyung Park, Kin-Wang Ng, Changbom Park, Guo-Chin Liu, & Keiichi Umetsu.* 589, 67 (2003)

PARK, MYEONG-GU. See COLLEY, WESLEY N., et al. Around-the-Clock Observations of the Q9057+561A,B Gravitationally Lensed Quasar. II. Results for the Second Observing Season.

PARK, SANGWOOK. X-Ray Emission from Multiphase Shock in the Large Magellanic Cloud Supernova Remnant N49. *Sangwook Park, David N. Burrows, Gordon P. Garmire, John A. Nousek, John P. Hughes, & Rosa Murphy Williams.* 586, 210 (2003)

An X-Ray Pulsar in the Oxygen-rich Supernova Remnant G292.0+1.8. *John P. Hughes, Patrick O. Slane, Sangwook Park, Peter W. A. Roming, & David N. Burrows.* 591, L139 (2003)

Detection of Magnesium-rich Ejecta in the Middle-aged Supernova Remnant N49B. *Sangwook Park, John P. Hughes, Patrick O. Slane, David N. Burrows, Jessica S. Warren, Gordon P. Garmire, & John A. Nousek.* 592, L41 (2003)

0103−72.6: A New Oxygen-rich Supernova Remnant in the Small Magellanic Cloud. *Sangwook Park, John P. Hughes, David N. Burrows, Patrick O. Slane, John A. Nousek, & Gordon P. Garmire.* 598, L95 (2003)

PARK, Y. D. Sympathetic Coronal Mass Ejections. *Y.-J. Moon, G. S. Choe, Haimin Wang, & Y. D. Park.* 588, 1176 (2003)

PARK, YOUSIN. Gravitational Lensing by Burkert Halos. *Yousin Park & Henry C. Ferguson.* 589, L65 (2003)

PARKE, WILLIAM. New Evidence of Proto-Cyclotron Resonance in a Magnetar Strength Field from SGR 1806−20. *Alaa I. Ibrahim, Jean H. Swank, & William Parke.* 584, L17 (2003)

PARKER, LEONARD. Cosmological Acceleration through Transition to Constant Scalar Curvature. *Leonard Parker, William Komp, & Daniel A. T. Vanzella.* 588, 663 (2003)

PARKINSON, CHRISTOPHER D. Source of Atomic Hydrogen in the Atmosphere of HD 209458b. *Mao-Chang Liang, Christopher D. Parkinson, Anthony Y. T. Lee, Yuk L. Yung, & Sara Seager.* 596, L247 (2003)

PARKINSON, P. M. SAZ. See TOURNEAR, D., et al. X-Ray Bursts in Neutron Star and Black Hole Binaries from Unconvetional Stellar Aspect Experiment and *Rossi X-Ray Timing Explorer* Data: Detections and Upper Limits.

PARRAVANO, ANTONIO. Time Dependence of the Ultraviolet Radiation Field in the Local Interstellar Medium. *Antonio Parravano, David J. Hollenbach, & Christopher F. McKee.* 584, 797 (2003)

PASANEN, M. See BÖTTCHER, M., et al. Coordinated Multiwavelength Observations of BL Lacertae in 2000.

PASCALE, E. See CRILL, B. P., et al. BOOMERANG: A Balloon-Borne Millimeter-Wave Telescope and Total Power Receiver for Mapping Anisotropy in the Cosmic Microwave Background.

See RUHL, J. E., et al. Improved Measurement of the Angular Power Spectrum of Temperature Anisotropy in the Cosmic Microwave Background from Two New Analyses of BOOMERANG Observations.

PASCUCCI, I. The First Detailed Look at a Brown Dwarf Disk. *I. Pascucci, D. Apai, Th. Henning, & C. P. Dullemond.* 590, L111 (2003)

First Detection of Millimeter Dust Emission from Brown Dwarf Disks. *R. Klein, D. Apai, I. Pascucci, Th. Henning, & L. B. F. M. Waters.* 593, L57 (2003)

PASQUI, ALESSANDRO. Cosmic Microwave Background as a Gravity Probe. *Luca Amendola, Claudia Quercellini, Domenico Tocchini-Valentini, & Alessandro Pasqui.* 583, L53 (2003)

PASTORELLO, A. See VALENTINI, G., et al. Optical and Near-Infrared Photometry of the Type Ia Supernova 2000E in NGC 6951.

PATEL, N. A. See TORRELLES, J. M., et al. Evidence for Evolution of the Outflow Collimation in Very Young Stellar Objects.

PATEL, NIMESH. See TRINIDAD, MIGUEL A., et al. Observations of Water Masers and Radio Continuum Emission in AFGL 2591.

PATEL, S. K. See KOUVELIOTOU, C., et al. Unraveling the Cooling Trend of the Soft Gamma Repeater SGR 1627−41.

PATEL, SANDEEP K. See LAROQUE, SAMUEL J., et al. Sunyaev-Zeldovich Effect Imaging of MACS Galaxy Clusters at $z > 0.5$.

Chandra Observations of the Anomalous X-Ray Pulsar 4U 0142+61. *Sandeep K. Patel, Chryssa Kouveliotou, Peter M. Woods, Allyn F. Tennant, Martin C. Weisskopf, Mark H. Finger, Colleen Wilson-Hodge, Ersin Göğüş, Michiel van der Klis, & Tomaso Belloni.* 587, 367 (2003)

Chandra Observations of the Faintest Low-Mass X-Ray Binaries. *Colleen A. Wilson, Sandeep K. Patel, Chryssa Kouveliotou, Peter G. Jonker, Michiel van der Klis, Walter H. G. Lewin, Tomaso Belloni, & Mariano Méndez.* 596, 1220 (2003)

The Mass, Baryonic Fraction, and X-Ray Temperature of the Luminous, High-Redshift Cluster of Galaxies MS 0451.6−0305. *Megan Donahue, Jessica A. Gaskin, Sandeep K. Patel, Marshall Joy, Doug Clowe, & John P. Hughes.* 598, 190 (2003)

PATERSON, BRADLEY M. See GABEL, JACK R., et al. The Ionized Gas and Nuclear Environment in NGC 3783. III. Detection of a Decreasing Radial Velocity in an Intrinsic Ultraviolet Absorber.

PATNAIK, ALOK R. Interferometric Phase Calibration Sources in the Declination Range 0° to −30°. *Joshua N. Winn, Alok R. Patnaik, & J. M. Wrobel.* 145, 83 (2003)

PATNAUDE, DANIEL J. *Chandra* Observations of the Luminous, Oxygen-rich Supernova Remnants in the Irregular Galaxy NGC 4449. *Daniel J. Patnaude & Robert A. Fesen.* 587, 221 (2003)

PATTERSON, J. See ARAUJO-BETANCOR, S., et al. System Parameters of DW Ursae Majoris.

X-Ray Variability of the Magnetic Cataclysmic Variable V1432 Aquilae and the Seyfert Galaxy NGC 6814. *K. Mukai, C. Hellier, G. Madejski, J. Patterson, & D. R. Skillman.* 597, 479 (2003)

PATTERSON, J. R. See ENOMOTO, R., et al. Search for TeV Gamma Rays from SN 1987A in 2001.

PATUREL, G. Prediction of the Sidereal Time Distribution of Gravitational Wave Events for Different Detectors. *G. Paturel & Yu. Baryshev.* 592, L99 (2003)

PAUL, J. See MEREGHETTI, S., et al. *Integral* and *XMM-Newton* Observations of the Weak Gamma-Ray Burst GRB 030227.

PAULDRACH, A. W. A. Ionizing Photon Emission Rates from O- and Early B-Type Stars and Clusters. *Amiel Sternberg, Tadziu L. Hoffmann, & A. W. A. Pauldrach.* 599, 1333 (2003)

PAULIN-HENRIKSSON, S. See KERINS, E., et al. Theory of Pixel Lensing toward M31. II. The Velocity Anisotropy and Flattening of the MACHO Distribution.

PAULSON, DIANE B. A Planetary Companion to γ Cephei A. *Artie P. Hatzes, William D. Cochran, Michael Endl, Barbara McArthur, Diane B. Paulson, Gordon A. H. Walker, Bruce Campbell, & Stephenson Yang.* 599, 1383 (2003)

PAVLOV, G. G. The Variable Jet of the Vela Pulsar. *G. G. Pavlov, M. A. Teter, O. Kargaltsev, & D. Sanwal.* 591, 1157 (2003)

Search for the Optical Counterpart of the Vela Pulsar X-Ray Nebula. *R. P. Mignani, A. De Luca, O. Kargaltsev, G. G. Pavlov, S. Zaggia, P. A. Caraveo, & W. Becker.* 594, 419 (2003)

PAVLOV, GEORGE G. Search for the Optical Counterpart of the Nearby Pulsar J0108−1431. *Roberto P. Mignani, Richard N. Manchester, & George G. Pavlov.* 582, 978 (2003)

See BECKER, WERNER, et al. *Chandra X-Ray Observatory* Observations of the Globular Cluster M28 and Its Millisecond Pulsar PSR 1821−24.

PEALE, S. J. Secular Evolution of Hierarchical Planetary Systems. *Man Hoi Lee & S. J. Peale.* 592, 1201 (2003)

Secular Evolution of Hierarchical Planetary Systems: Erratum (ApJ, 592, 1201 [2003]). *Man Hoi Lee & S. J. Peale.* 597, 644 (2003) (Orig. paper in 592, 1201 (2003))

PEARCE, FRAZER R. The Metallicity of Pregalactic Globular Clusters: The Observational Consequences of the First Stars. *Michael A. Beasley, Daisuke Kawata, Frazer R. Pearce, Duncan A. Forbes, & Brad K. Gibson.* 596, L187 (2003)

PEARSON, J. First Detection of Doubly Deuterated Hydrogen Sulfide. *C. Vastel, T. G. Phillips, C. Ceccarelli, & J. Pearson.* 593, L97 (2003)

PEARSON, T. J. See MASON, B. S., et al. The Anisotropy of the Microwave Background to l = 3500: Deep Field Observatons with the Cosmic Background Imager.

The Anisotropy of the Microwave Background to l = 3500: Mosaic Observations with the Cosmic Background Imager. *T. J. Pearson, B. S. Mason, A. C. S. Readhead, M. C. Shepherd, J. L. Sievers, P. S. Udomprasert, J. K. Cartwright, A. J. Farmer, S. Padin, S. T. Myers, J. R. Bond, C. R. Contaldi, U.-L. Pen, S. Prunet, D. Pogosyan, J. E. Carlstrom, J. Kovac, E. M. Leitch, C. Pryke, N. W. Halverson, W. L. Holzapfel, P. Altamirano, L. Bronfman, S. Casassus, J. May, & M. Joy.* 591, 556 (2003)

See MYERS, S. T., et al. A Fast Gridded Method for the Estimation of the Power Spectrum of the Cosmic Microwave Background from Interferometer Data with Application to the Cosmic Background Imager.

See SIEVERS, J. L., et al. Cosmological Parameters from Cosmic Background Imager Observations and Comparisons with BOOMERANG, DASI, and MAXIMA.

PECK, A. B. The Flaring H_2O Megamaser and Conpact Radio Source in Markarian 348. *A. B. Peck, C. Henkel, J. S. Ulvestad, A. Brunthaler, H. Falcke, M. Elitzur, K. M. Menten, & J. F. Gallimore.* 590, 149 (2003)

Identifying Compact Symmetric Objects in the Southern Sky. *G. B. Taylor & A. B. Peck.* 597, 157 (2003)

PEDELTY, J. A. A Sensitive Very Large Array Search for Small-Scale Glycine Emission toward OMC-1. *J. M. Hollis, J. A. Pedelty, L. E. Snyder, P. R. Jewell, F. J. Lovas, Patrick Palmer, & S.-Y. Liu.* 588, 353 (2003)

Kinematics of the SGR B2 (N-LMH) Molecular Core. *Jan M. Hollis, J. A. Pedelty, D. A. Boboltz, S.-Y. Liu, L. E. Snyder, Patrick Palmer, F. J. Lovas, & P. R. Jewell.* 596, L235 (2003)

PEDERSEN, K. Delayed Soft X-Ray Emission Lines in the Afterglow of GRB 030227. *D. Watson, J. N. Reeves, J. Hjorth, P. Jakobsson, & K. Pedersen.* 595, L29 (2003)

PEDERSEN, KRISTIAN. Weak Gravitational Lensing by a Sample of X-Ray–luminous Clusters of Galaxies. III. Serendipitous Weak Lensing Detections of Dark and Luminous Mass Concentrations. *Haakon Dahle, Kristian Pedersen, Per B. Lilje, Steve J. Maddox, & Nick Kaiser.* 591, 662 (2003)

PEDERSON, H. See HJORTH, J., et al. Very High Column Density and Small Reddening toward GRB 020124 at $z = 3.20$.

PEDICHINI, F. See VALENTINI, G., et al. Optical and Near-Infrared Photometry of the Type Ia Supernova 2000E in NGC 6951.

PEDLAR, A. The Nuclear Regions of the Seyfert Galaxy NGC 4151: Parsec-Scale H I Absorption and a Remarkable Radio Jet. *C. G. Mundell, J. M. Wrobel, A. Pedlar, & J. F. Gallimore.* 583, 192 (2003)

PEEBLES, P. J. E. Cosmological Origin of the Stellar Velocity Dispersions in Massive Early-Type Galaxies. *Abraham Loeb & P. J. E. Peebles.* 589, 29 (2003)

PEEL, ALAN. Gravitational Potential Reconstruction from Peculiar Velocity and Weak Lensing Measurements. *Olivier Doré, Lloyd Knox, & Alan Peel.* 585, L81 (2003)

PEETERS, Z. The Astrobiology of Nucleobases. *Z. Peeters, O. Botta, S. B. Charnley, R. Ruiterkamp, & P. Ehrenfreud.* 593, L129 (2003)

PEGG, JENNIFER. Rapid Brightness Fluctuations in Q0957+561A,B: Microlensing or Seeing? *Wesley N. Colley, Irwin I. Shapiro, Jennifer Pegg, Edwin L. Turner, Tomislav Kundić, Karen Loomis, N. C. Hastings, & Russet McMillan.* 588, 711 (2003)

PEIMBERT, A. The Effect of Collisional Enhancement of Balmer Lines on the Determination of the Primordial Helium Abundance. *V. Luridiana, A. Peimbert, M. Peimbert, & M. Cervino.* 592, 846 (2003)

PEIMBERT, ANTONIO. The Chemical Composition of the 30 Doradus Nebula Derived from Very Large Telescope Echelle Spectrophotometry. *Antonio Peimbert.* 584, 735 (2003)

Very Large Telescope Echelle Spectrophotometry of the Planetary Nebula NGC 5307 and Temperature Variations. *María Teresa Ruiz, Antonio Peimbert, Manuel Peimbert, & César Esteban.* 595, 247 (2003)

PEIMBERT, M. The Effect of Collisional Enhancement of Balmer Lines on the Determination of the Primordial Helium Abundance. *V. Luridiana, A. Peimbert, M. Peimbert, & M. Cervino.* 592, 846 (2003)

PEIMBERT, MANUEL. Very Large Telescope Echelle Spectrophotometry of the Planetary Nebula NGC 5307 and Temperature Variations. *María Teresa Ruiz, Antonio Peimbert, Manuel Peimbert, & César Esteban.* 595, 247 (2003)

PEIRIS, H. V. See BENNETT, C. L., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Preliminary Maps and Basic Results.

See SPERGEL, D. N., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Determination of Cosmological Parameters.

See VERDE, L., et al. First-Year *Wilkinson Microwave Anisotrophy Probe* (*WMAP*) Observations: Parameter Estimation Methodology.

First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Implications for Inflation. *H. V. Peiris, E. Komatsu, L. Verde, D. N. Spergel, C. L. Bennett, M. Halpern, G. Hinshaw, N. Jarosik, A. Kogut, M. Limon, S. S. Meyer, L. Page, G. S. Tucker, E. Wollack, & E. L. Wright.* 148, 213 (2003)

See PAGE, L., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Interpretation of the TT and TE Angular Power Spectrum Peaks.

PEIRIS, HIRANYA V. Eccentric-Disk Models for the Nucleus of M31. *Hiranya V. Peiris & Scott Tremaine.* 599, 237 (2003)

PELETIER, REYNIER F. Galactic Bulges from *Hubble Space Telescope* Near-Infrared Camera Multi-Object Spectrometer Observations: The Lack of $r^{1/4}$ Bulges. *Marc Balcells, Alister W. Graham, Lilian Domínguez-Palmero, & Reynier F. Peletier.* 582, L79 (2003)

The Near-Infrared Ca II Triplet–σ Relation for Bulges of Spiral Galaxies. *Jesús Falcón-Barroso, Reynier F. Peletier, Alexandre Vazdekis, & Marc Balcells.* 588, L17 (2003)

PELLEGRINI, S. The Nuclear Accretion in the FR I Radio Galaxy IC 4296 from *Chandra* and Very Long Baseline Array Observations. *S. Pellegrini, T. Venturi, A. Comastri, G. Fabbiano, F. Fiore, C. Vignali, R. Morganti, & G. Trinchieri.* 585, 677 (2003)

See FABBIANO, G., et al. The X-Ray–faint Emission of the Supermassive Nuclear Black Hole of IC 1459.

An *XMM-Newton* and *Chandra* Investigation of the Nuclear Accretion in the Sombrero Galaxy (NGC 4594). *S. Pellegrini, A. Baldi, G. Fabbiano, & D.-W. Kim.* 597, 175 (2003)

PELLERIN, ANNE. Synthetic High-Resolution Line Spectra of Star-forming Galaxies below 1200 Å. *Carmelle Robert, Anne Pellerin, Alessandra Aloisi, Claus Leitherer, Charles Hoopes, & Timothy M. Heckman.* 144, 21 (2003)

PELLETIER, GUY. Particle Transport in Tangled Magnetic Fields and Fermi Acceleration at Relativistic Shocks. *Martin Lemoine & Guy Pelletier.* 589, L73 (2003)

PELLIN, MICHAEL J. Isotopic Compositions of Strontium, Zirconium, Molybdenum, and Barium in Single Presolar SiC Grains and Asymptotic Giant Branch Stars. *Maria Lugaro, Andrew M. Davis, Roberto Gallino, Michael J. Pellin, Oscar Straniero, & Franz Käppeler.* 593, 486 (2003)

PELLÓ, ROSER. K_s Number Counts in the Groth and Coppi Fields. *David Cristóbal-Hornillos, Marc Balcells, Mercedes Prieto, Rafael Guzmán, Jesús Gallego, Nicolás Cardiel, Ángel Serrano, & Roser Pelló.* 595, 71 (2003)

PEN, U. See MASON, B. S., et al. The Anisotropy of the Microwave Background to $l = 3500$: Deep Field Observatons with the Cosmic Background Imager.

PEN, U.-L. See PEARSON, T. J., et al. The Anisotropy of the Microwave Background to $l = 3500$: Mosaic Observations with the Cosmic Background Imager.

See MYERS, S. T., et al. A Fast Gridded Method for the Estimation of the Power Spectrum of the Cosmic Microwave Background from Interferometer Data with Application to the Cosmic Background Imager.

See SIEVERS, J. L., et al. Cosmological Parameters from Cosmic Background Imager Observations and Comparisons with BOOMERANG, DASI, and MAXIMA.

PEN, UE-LI. Measuring Feedback Using the Intergalactic Medium State and Evolution Inferred from the Soft X-Ray Background. *Pengjie Zhang & Ue-Li Pen.* 588, 704 (2003)

Detection of Dark Matter Skewness in the VIRMOS-DESCART Survey: Implications for Ω_0. *Ue-Li Pen, Tongjie Zhang, Ludovic van Waerbeke, Yannick Mellier, Pengjie Zhang, & John Dubinski.* 592, 664 (2003)

The Fate of Nonradiative Magnetized Accretion Flows: Magnetically Frustrated Convection. *Ue-Li Pen, Christopher D. Matzner, & Shingkwong Wong.* 596, L207 (2003)

Optimal Weak-Lensing Skewness Measurements. *Tong-Jie Zhang, Ue-Li Pen, Pengji Zhang, & John Dubinski.* 598, 818 (2003)

A Free, Fast, Simple, and Efficient Total Variation Diminishing Magnetohydrodynamic Code. *Ue-Li Pen, Phil Arras, & ShingKwong Wong.* 149, 447 (2003)

PENCE, W. D. *Chandra* Observation of Luminous and Ultraluminous X-Ray Binaries in M101. *K. Mukai, W. D. Pence, S. L. Snowden, & K. D. Kuntz.* 582, 184 (2003)

Diffuse X-Ray Emission from M101. *K. D. Kuntz, S. L. Snowden, W. D. Pence, & K. Mukai.* 588, 264 (2003)

PENDHARKAR, JAYANT K. Multitransonic Black Hole Accretion Disks with Isothermal Standing Shocks. *Tapas K. Das, Jayant K. Pendharkar, & Sanjit Mitra.* 592, 1078 (2003)

PENDLETON, GEOFFREY N. See MITROFANOV, IGOR G., et al. Comparison of Redshift-known Gamma-Ray Bursts with the Main Groups of Bright BATSE Events.

PENDLETON, Y. J. The Effects of Ion Irradiation on the Evolution of the Carrier of the 3.4 Micron Interstellar Absoprtion Band. *V. Mennella, G. A. Baratta, A. Esposito, G. Ferini, & Y. J. Pendleton.* 587, 727 (2003)

PENG, C. Y. See RUSIN, D., et al. The Evolution of a Mass-selected Sample of Early-Type Field Galaxies.

PENG, ERIC. See GLAZEBROOK, KARL, et al. The Sloan Digital Sky Survey: The Cosmic Spectrum and Star Formation History.

PENG, FANG. Neutron-rich Hydromagnetic Outflows in Gamma-Ray Burst Sources. *Nektarios Vlahakis, Fang Peng, & Arieh Königl.* 594, L23 (2003)

PENN, M. J. Weak Infrared Molecular Lines Reveal Rapid Outflow in Cool Magnetic Sunspot Penumbral Fibrils. *M. J. Penn, W. D. Cao, S. R. Walton, G. A. Chapman, & W. Livingston.* 590, L119 (2003)

PENNY, ALAN J. Four New Planets Orbiting Metal-Enriched Stars. *C. G. Tinney, R. Paul Butler, Geoffrey W. Marcy, Hugh R. A. Jones, Alan J. Penny, Chris McCarthy, Brad D. Carter, & Jade Bond.* 587, 423 (2003)

A Planet in a Circular Orbit with a 6 Year Period. *Brad D. Carter, R. Paul Butler, C. G. Tinney, Hugh R. A. Jones, Geoffrey W. Marcy, Chris McCarthy, Debra A. Fischer, & Alan J. Penny.* 593, L43 (2003)

PENNYPACKER, C. R. See KNOP, R. A., et al. New Constraints on Ω_M, Ω_Λ, and w from an Independent Set of 11 High-Redshift Supernovae Observed with the *Hubble Space Telescope*.

PENTERICCI, LAURA. See HELMI, AMINA, et al. Selection of Metal-poor Giant Stars Using the Sloan Digital Sky Survey Photometric System.

PEOPLES, JOHN. See SZALAY, ALEXANDER S., et al. Karhunen-Loève Estimation of the Power Spectrum Parameters from the Angular Distribution of Galaxies in Early Sloan Digital Sky Survey Data.

PEPPER, JOSHUA. Sensitivity of Transit Searches to Habitable-Zone Planets. *Andrew Gould, Joshua Pepper, & D. L. DePoy.* 594, 533 (2003)

PERCIVAL, J. W. The Wisconsin Hα Mapper Northern Sky Survey. *L. M. Haffner, R. J. Reynolds, S. L. Tufte, G. J. Madsen, K. P. Jaehnig, & J. W. Percival.* 149, 405 (2003)

PERCIVAL, S. The Distance to the Large Magellanic Cloud Cluster NGC 1866 and the Surrounding Field. *M. Salaris, S. Percival, E. Brocato, G. Raimondo, & A. R. Walker.* 588, 801 (2003)

PERES, G. Spectral Visibility of the Nucleus of M33 in a *Chandra*/ACIS Observation. *V. La Parola, F. Damiani, G. Fabbiano, & G. Peres.* 583, 758 (2003)

ROSAT HRI Investigation of the NGC 507 X-Ray Halo. *M. Paolillo, G. Fabbiano, G. Peres, & D.-W. Kim.* 586, 850 (2003)

PEREYRA, NICOLAS ANTONIO. Hydrodynamic Models of Line-driven Accretion Disk Winds. III. Local Ionization Equillibrium. *Nicolas Antonio Pereyra & Timothy R. Kallman.* 582, 984 (2003)

PÉREZ DE LOS HEROS, C. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

PÉREZ-GONZÁLEZ, PABLO G. Luminosity and Stellar Mass Functions of Local Star-forming Galaxies. *Pablo G. Pérez-González, Jesús Gallegeo, Jaime Zamorano, Almudena Alonso-Herrero, Armando Gil de Paz, & Alfonso Aragón-Salamanca.* 587, L27 (2003)

Spatial Analysis of the Hα Emission in the Local Star-forming UCM Galaxies. *Pablo G. Pérez-González, Jaime Zamorano, Jesús Gallego, Alfonso Aragón-Salamanca, & Armando Gil de Paz.* 591, 827 (2003)

PEREZ-TORRES, M. A. Radio Emission from SN 2001gd in NGC 5033. *Christopher J. Stockdale, Kurt W. Weiler, Schuyler D. Van Dyk, Marcos J. Montes, Nino Panagia, Richard A. Sramek, M. A. Perez-Torres, & J. M. Marcaide.* 592, 900 (2003)

PERINOTTO, MARIO. The Physical Parameters, Excitation, and Chemistry of the Rim, Jets, and Knots of the Planetary Nebula NGC 7009. *Denise R. Goncalves, Romano L. M. Corradi, Antonio Mampaso, & Mario Perinotto.* 597, 975 (2003)

PERJÉS, ZOLTÁN. Charged Black Holes: Wave Equations for Gravitational and Electromagnetic Perturbations. *Zoltán Perjés & Mátyás Vasúth.* 582, 342 (2003)

PERLEY, R. A. See COHEN, A. S., et al. The Low-Frequency Radio Counterpart of the *XMM* Large-Scale Structure Survey.

PERLMAN, E. *Chandra* X-Ray Analysis of the Massive High-Redshift Galaxy Clusters Cl J1113.1−2615 and Cl J0152.7−1357. *B. J. Maughan, L. R. Jones, H. Ebeling, E. Perlman, P. Rosati, C. Frye, & C. R. Mullis.* 587, 589 (2003)

PERLMAN, E. S. Flaring X-Ray Emission from HST-1, a Knot in the M87 Jet. *D. E. Harris, J. A. Biretta, W. Junor, E. S. Perlman, W. B. Sparks, & A. S. Wilson.* 586, L41 (2003)

PERLMAN, ERIC S. What Types of Jets Does Nature Make? A New Population of Radio Quasars. *Paolo Padovani, Eric S. Perlman, Hermine Landt, Paolo Giommi, & Matteo Perri.* 588, 128 (2003)

Month-Timescale Optical Variability in the M87 Jet. *Eric S. Perlman, D. E. Harris, John A. Biretta, William B. Sparks, & F. Duccio Macchetto.* 599, L65 (2003)

PERLMUTTER, S. See KNOP, R. A., et al. New Constraints on Ω_M, Ω_Λ, and w from an Independent Set of 11 High-Redshift Supernovae Observed with the *Hubble Space Telescope*.

PERLMUTTER, SAUL. Multicolor Light Curves of Type Ia Supernovae on the Color-Magnitude Diagram: A Novel Step toward More Precise Distance and Extinction Estimates. *Lifan Wang, Gerson Goldhaber, Greg Aldering, & Saul Perlmutter.* 590, 944 (2003)

See WANG, LIFAN, et al. Spectropolarimetry of SN 2001el in NGC 1448: Asphericity of a Normal Type Ia Supernova.

PERNA, R. See ISRAEL, G. L., et al. The Infrared Counterpart to the Anomalous X-Ray Pulsar 1RXS J170849−400910.

See DE PASQUALE, M., et al. A Comparative Study of the X-Ray Afterglow Properties of Optically Bright and Dark Gamma-Ray Bursts.

PERNA, ROSALBA. Time-dependent Photoionization in a Dusty Medium. II. Evolution of Dust Distributions and Optical Opacities. *Rosalba Perna, Davide Lazzati, & Fabrizio Fiore.* 585, 775 (2003)

Broadband Modeling of GRB 021004. *Jeremy S. Heyl & Rosalba Perna.* 586, L13 (2003)

Jets in Gamma-Ray Bursts: Tests and Predictions for the Structured Jet Model. *Rosalba Perna, Re'em Sari, & Dale Frail.* 594, 379 (2003)

Bondi Accretion and the Problem of the Missing Isolated Neutron Stars. *Rosalba Perna, Ramesh Narayan, George Rybicki, Luigi Stella, & Aldo Treves.* 594, 936 (2003)

Chandra Observations of the Dwarf Nova WX Hydri in Quiescence. *Rosalba Perna, Jonathan McDowell, Kristen Menou, John Raymond, & Mikhail V. Medvedev.* 598, 545 (2003)

PERNIC, D. See NOVAK, G., et al. First Results from the Submillimeter Polarimeter for Antarctic Remote Observations: Evidence of Large-Scale Toroidal Magnetic Fields in the Galactic Center.

PEROLA, C. G. See GRANDI, P., et al. *BeppoSAX* Observations of Centaurus A: The Hard Continuum and the Iron-Line Feature.

PEROZZI, E. The Glitches of the Anomalous X-Ray Pulsar 1RXS J170849.0−400910. *S. Dall'Osso, G. L. Israel, L. Stella, A. Possenti, & E. Perozzi.* 599, 485 (2003)

PERRETT, K. M. New Mass Estimators for Tracer Populations. *N. W. Evans, M. I. Wilkinson, K. M. Perrett, & T. J. Bridges.* 583, 752 (2003)

Substructure in the Andromeda Galaxy Globular Cluster System. *K. M. Perrett, D. A. Stiff, D. A. Hanes, & T. J. Bridges.* 589, 790 (2003)

PERRETT, KATHRYN M. Disk-Bulge-Halo Models for the Andromeda Galaxy. *Lawrence M. Widrow, Kathryn M. Perrett, & Sherry H. Suyu.* 588, 311 (2003)

PERRI, MATTEO. What Types of Jets Does Nature Make? A New Population of Radio Quasars. *Paolo Padovani, Eric S. Perlman, Hermine Landt, Paolo Giommi, & Matteo Perri.* 588, 128 (2003)

PERRIN, MARSHALL D. The Structure of High Strehl Ratio Point-Spread Functions. *Marshall D. Perrin, Anand Sivaramakrishnan, Russell B. Makidon, Ben R. Oppenheimer, & James R. Graham.* 596, 702 (2003)

PERROTTA, F. Probing Dark Energy with the Cosmic Microwave Background: Projected Constraints from the *Wilkinson Microwave Anisotropy Probe* and *Planck*. *Amedeo Balbi, C. Baccigalupi, F. Perrotta, S. Matarrese, & N. Vittorio.* 588, L5 (2003)

PERRY, R. BRAD. Near-Infrared Spectrophotometry and the CO Emission in V2274 Cygni (Nova Cygni 2001 No. 1). *Richard J. Rudy, William L. Dimpfl, David K. Lynch, S. Mazuk, Catherine C. Venturini, John C. Wilson, R. C. Puetter, & R. Brad Perry.* 596, 1229 (2003)

PERRY, THEORDORE S. The Interaction of Supernova Remnants with Interstellar Clouds: Experiments on the Nova Laser. *Richard I. Klein, Kimberly S. Budil, Theordore S. Perry, & David R. Bach.* 583, 245 (2003)

PERSSON, S. E. See CHEN, HSIAO-WEN, et al. The Las Campanas Infrared Survey. IV. The Photometric Redshift Survey and the Rest-Frame R-Band Galaxy Luminosity Function at $0.5 \leq z \leq 1.5$.

PESSAH, MARTIN. Diffuse X-Rays from a Distributed Component of Dark Surrounding Sagittarius A*. *Martin Pessah & Fulvio Melia.* 585, L29 (2003)

PETERSON, B. See ALCOCK, C., et al. The MACHO Project Large Magellanic Cloud Variable Star Inventory. XI. Frequency Analysis of the Fundamental Mode RR Lyrae Stars.

PETERSON, B. A. See FOX, D. W., et al. Discovery of Early Optical Emission from GRB 021211.

PETERSON, B. M. Black Hole Masses in Three Seyfert Galaxies. *C. A. Onken, B. M. Peterson, M. Dietrich, A. Robinson, & I. M. Salamanca.* 585, 121 (2003)

PETERSON, BRADLEY M. See GABEL, JACK R., et al. The Ionized Gas and Nuclear Environment in NGC 3783. II. Averaged *Hubble Space Telescope*/STIS and *Far Ultraviolet Spectroscopic Explorer* Spectra.

Correlated Long-Term Optical and X-Ray Variations in NGC 5548. *Philip Uttley, Rick Edelson, Ian M. McHardy, Bradley M. Peterson, & Alex Markowitz.* 584, L53 (2003)

An Intrinsic Baldwin Effect in the Hβ Broad Emission Line in the Spectrum of NGC 5548. *Karoline M. Gilbert & Bradley M. Peterson.* 587, 123 (2003)

See NETZER, HAGAI, et al. The Ionized Gas and Nuclear Environment in NGC 3783. IV. Variability and Modeling of the 900 Kilosecond *Chandra* Spectrum.

PETERSON, BRUCE A. See YOSHII, YUZURU, et al. The Optical/Near-Infrared Light Curves of SN 2002ap for the First 140 Days after Discovery.

PETERSON, J. B. See NOVAK, G., et al. First Results from the Submillimeter Polarimeter for Antarctic Remote Observations: Evidence of Large-Scale Toroidal Magnetic Fields in the Galactic Center.

Extended Source Diffraction Effects near Gravitational Lens Fold Caustics. *S. A. Zabel & J. B. Peterson.* 594, 456 (2003)

See RUNYAN, M. C., et al. ACBAR: The Arcminute Cosmology Bolometer Array Receiver.

See GOLDSTEIN, J. H., et al. Estimates of Cosmological Parameters Using the Cosmic Microwave Background Angular Power Spectrum of ACBAR.

PETERSON, J. R. Two Types of X-Ray Spectra in Cataclysmic Variables. *Koji Mukai, A. Kinkhabwala, J. R. Peterson, S. M. Kahn, & F. Paerels.* 586, L77 (2003)

High Resolution X-Ray Spectroscopic Constraints on Cooling-Flow Models for Clusters of Galaxies. *J. R. Peterson, S. M. Kahn, F. B. S. Paerels, J. S. Kaastra, T. Tamura, J. A. M. Bleeker, C. Ferrigno, & J. G. Jernigan.* 590, 207 (2003)

PETERSON, RUTH C. Blue Horizontal-Branch Stars in Old, Metal-rich Stellar Systems. *Ruth C. Peterson, Bruce W. Carney, Ben Dorman, Elizabeth M. Green, Wayne Landsman, James Liebert, Robert W. O'Connell, & Robert T. Rood.* 588, 299 (2003)

PETITJEAN, PATRICK. The Clustering of Intergalactic Metals. *Christophe Pichon, Evan Scannapieco, Bastien Aracil, Patrick Petitjean, Dominique Aubert, Jacqueline Bergeron, & Stéphane Colombi.* 597, L97 (2003)

PETITPAS, GLEN R. Molecular Gas in Candidate Double-barred Galaxies. II. Cooler, Less Dense Gas Associated with Stronger Central Concentrations. *Glen R. Petitpas & Christine D. Wilson.* 587, 649 (2003)

PETRE, R. *Chandra* Observation of the X-Ray Source Population of NGC 6946. *S. S. Holt, E. M. Schlegel, U. Hwang, & R. Petre.* 588, 792 (2003)

A *Chandra* Observation of The Diffuse Emission in the Face-on Spiral NGC 6946. *Eric M. Schlegel, S. S. Holt, & R. Petre.* 598, 982 (2003)

PETRE, ROBERT. *Chandra* CCD Imagery of the Northeast and Northwest Limbs of SN 1006. *Knox S. Long, Stephen P. Reynolds, John C. Raymond, P. Frank Winkler, Kristy K. Dyer, & Robert Petre.* 586, 1162 (2003)

PETRIC, ANDREEA O. An X-Ray Jet Discovered by *Chandra* in the $z = 4.3$ Radio-selected Quasar GB 1508+5714. *Aneta Siemiginowska, Randall K. Smith, Thomas L. Aldcroft, D. A. Schwartz, Frederik Paerels, & Andreea O. Petric.* 598, L15 (2003)

PETRIE, SIMON. Locally Aromatic Polycyclic Hydrocarbons as Potential Carriers of Infrared Emission Features. *Simon Petrie, Robert Stranger, & Walter W. Duley.* 594, 869 (2003)

PETRONI, SILVIA. Classical Cepheid Pulsation Models. IX. New Input Physics. *Silvia Petroni, Giuseppe Bono, Marcella Marconi, & Robert F. Stellingwerf.* 599, 522 (2003)

PETROSIAN, ARTASHES. The First Deep Advanced Camera for Surveys Lyα Images of Local Starburst Galaxies. *Daniel Kunth, Claus Leitherer, J. Miguel Mas-Hesse, Göran Östlin, & Artashes Petrosian.* 597, 263 (2003)

PETROSIAN, V. See SCHAEFER, BRADLEY E., et al. GRB 021004: A Massive Progenitor Star Surrounded by Shells.

PETROV, P. P. High-Resolution Spectroscopy of FU Orionis Stars. *G. H. Herbig, P. P. Petrov, & R. Duemmler.* 595, 384 (2003)

PETRY, D. See HOLDER, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.

See DE LA CALLE PÉREZ, I., et al. Search for High-Energy Gamma Rays from an X-Ray–Selected Blazar Sample.

PETTERS, A. O. Identifying Lenses with Small-Scale Structure. I. Cusp Lenses. *Charles R. Keeton, B. Scott Gaudi, & A. O. Petters.* 598, 138 (2003)

PETTERSON, O. K. L. See SUMI, T., et al. Microlensing Optical Depth toward the Galactic Bulge from Microlensing Observations during 2000 with Difference Image Analysis.

PETTINI, MAX. Galaxies and Intergalactic Matter at Redshift $z \sim 3$: Overview. *Kurt L. Adelberger, Charles C. Steidel, Alice E. Shapley, & Max Pettini.* 584, 45 (2003)

Rest-Frame Ultraviolet Spectra of $z \sim 3$ Lyman Break Galaxies. *Alice E. Shapley, Charles C. Steidel, Max Pettini, & Kurt L. Adelberger.* 588, 65 (2003)

Hα Spectroscopy of Galaxies at $z > 2$: Kinematics and Star Formation. *Dawn K. Erb, Alice E. Shapley, Charles C. Steidel, Max Pettini, Kurt L. Adelberger, Matthew P. Hunt, Alan F. M. Moorwood, & Jean-Gabriel Cuby.* 591, 101 (2003)

Lyman Break Galaxies at Redshift $z \sim 3$: Survey Description and Full Data Set. *Charles C. Steidel, Kurt L. Adelberger, Alice E. Shapley, Max Pettini, Mark Dickenson, & Mauro Giavalisco.* 592, 728 (2003)

The C IV Mass Density of the Universe at Redshift 5. *Max Pettini, Piero Madau, Michael Bolte, Jason X. Prochaska, Sara L. Ellison, & Xiaohui Fan.* 594, 695 (2003)

PETTY-POWELL, S. See BOGDAN, T. J., et al. Waves in the Magnetized Solar Atmosphere. II. Waves from Localized Sources in Magnetic Flux Concentrations.

PEVTSOV, ALEXEI A. Helicity Evolution in Emerging Active Regions. *Alexei A. Pevtsov, Vasily M. Maleev, & Dana W. Longcope.* 593, 1217 (2003)

Chirality of Chromospheric Filaments. *Alexei A. Pevtsov, K. S. Balasubramaniam, & Joey W. Rogers.* 595, 500 (2003)

What Is the Role of the Kink Instability in Solar Coronal Eruptions? *Robert J. Leamon, Richard C. Canfield, Zachary Blehm, & Alexei A. Pevtsov.* 596, L255 (2003)

The Relationship Between X-Ray Radiance and Magnetic Flux. *Alexei A. Pevtsov, George H. Fisher, Loren W. Acton, Dana W. Longcope, Christopher M. Johns-Krull, Charles C. Kankelborg, & Thomas R. Metcalf.* 598, 1387 (2003)

PEVUNOVA, O. Palomar/Las Campanas Imaging Atlas of Blue Compact Dwarf Galaxies. I. Images and Integrated Photometry. *A. Gil de Paz, B. F. Madore, & O. Pevunova.* 147, 29 (2003)

PFAHL, ERIC. The Galactic Population of Low- and Intermediate-Mass X-Ray Binaries. *Eric Pfahl, Saul Rappaport, & Philipp Podsiadlowski.* 597, 1036 (2003)

PFALZNER, S. Spiral Arms in Accretion Discs Encounters. *S. Pfalzner.* 592, 986 (2003)

PFEIFFER, B. Actinides in the Source of Cosmic Rays and the Present Interstellar Medium. *R. E. Lingenfelter, J. C. Higdon, K.-L. Kratz, & B. Pfeiffer.* 591, 228 (2003)

PFEIFFER, BERND. See SNEDEN, CHRISTOPHER, et al. The Extremely Metal-poor, Neutron Capture–rich Star CS 22892−052: A Comprehensive Abundance Analysis.

PHANEUF, R. A. See AGUILAR, A., et al. Absolute Photoionization Cross Section Measurements of O II Ions from 29.7 to 46.2 eV.

PHILHOUR, B. See BENSON, B. A., et al. Peculiar Velocity Limits from Measurements of the Spectrum of the Sunyaev-Zeldovich Effect in Six Clusters of Galaxies.

PHILLIPS, A. See PRICE, P. A., et al. Discovery of GRB 020405 and Its Late Red Bump.

See SMITH, D. A., et al. ROTSE-III Observations of the Early Afterglow from GRB 030329.

PHILLIPS, A. C. A Multiwavelength Approach to the Star Formation Rate Estimation in Galaxies at Intermediate Redshifts. *N. Cardiel, D. Elbaz, R. P. Schiavon, C. N. A. Willmer, D. C. Koo, A. C. Phillips, & J. Gallego.* 584, 76 (2003)

PHILLIPS, ANDREW C. See GEBHARDT, KARL, et al. The DEEP Groth Strip Survey. IX. Evolution of the Fundamental Plane of Field Galaxies.

See MADGWICK, DARREN S., et al. The DEEP2 Galaxy Redshift Survey: Spectral Classification of Galaxies at $z \sim 1$.

See KOBULNICKY, HENRY A., et al. The DEEP Groth Strip Survey. VII. The Metallicity of Field Galaxies at $0.26 < z < 0.82$ and the Evolution of the Luminosity-Metallicity Relation.

Measuring Global Galaxy Metallicities Using Emission-Line Equivalent Widths. *Henry A. Kobulnicky & Andrew C. Phillips.* 599, 1031 (2003)

PHILLIPS, J. R. Testing Two Nuclear Physics Approximations Used in the Standard Leaky-Box Model for the Spallogenic Production of LiBeB. *J. P. Kneller, J. R. Phillips, & T. P. Walker.* 589, 217 (2003)

PHILLIPS, K. J. H. Solar Flare Abundances of Potassium, Argon, and Sulphur. *K. J. H. Phillips, J. Sylwester, B. Sylwester, & E. Landi.* 589, L113 (2003)

PHILLIPS, KENNETH J. H. Observational Evidence for Mode Coupling in the Chromospheric Network. *R. T. James McAteer, Peter T. Gallagher, David R. Williams, Mihalis Mathioudakis, D. Shaun Bloomfield, Kenneth J. H. Phillips, & Francis P. Keenan.* 587, 806 (2003)

PHILLIPS, M. M. See GARNAVICH, P. M., et al. Discovery of the Low-Redshift Optical Afterglow of GRB 011121 and Its Progenitor Supernova SN 2001ke.

See MATHESON, T., et al. Photometry and Spectroscopy of GRB 03029 and Its Associated Supernova 2003dh: The First Two Months.

PHILLIPS, MARK. See MICHAEL, ELI, et al. *Hubble Space Telescope* Observations of High-Velocity Lyα and Hα Emission from Supernova Remnant 1987A: The Structure and Development of the Reverse Shock.

PHILLIPS, MARK L. F. A Fluorescent Aerogel for Capture and Identification of Interplanetary and Interstellar Dust. *Gerardo Domínguez, Andrew J. Westphal, Mark L. F. Phillips, & Steven M. Jones.* 592, 631 (2003)

PHILLIPS, MARK M. See TONRY, JOHN L., et al. Cosmological Results from High-z Supernovae.

PHILLIPS, R. B. R Cassiopeiae: Relative Strengths of SiO Masers at 43 and 86 GHz. *R. B. Phillips, A. H. Straughn, S. S. Doeleman, & C. J. Lonsdale.* 588, L105 (2003)

PHILLIPS, T. G. First Detection of Doubly Deuterated Hydrogen Sulfide. *C. Vastel, T. G. Phillips, C. Ceccarelli, & J. Pearson.* 593, L97 (2003)

PIACENTINI, F. See RUHL, J. E., et al. Improved Measurement of the Angular Power Spectrum of Temperature Anisotropy in the Cosmic Microwave Background from Two New Analyses of BOOMERANG Observations.

PIAN, E. See HJORTH, J., et al. Very High Column Density and Small Reddening toward GRB 020124 at $z = 3.20$.

See GREINER, J., et al. GRB 011121: A Collimated Outflow into Wind-blown Surroundings.

PIANA, MICHELE. Regularized Electron Flux Spectra in the 2002 July 23 Solar Flare. *Michele Piana, Anna Maria Massone, Eduard P. Kontar, A. Gordon Emslie, John C. Brown, & Richard A. Schwartz.* 595, L127 (2003)

PICCINELLI, GABRIELLA. The Effects of Non-Gaussian Initial Conditions on the Structure and Substructure of Cold Dark Matter Halos. *Vladimir Avila-Reese, Pedro Colín, Gabriella Piccinelli, & Claudio Firmani.* 598, 36 (2003)

PICCIRILLO, LUCIO. An Instrument for Investigating the Large Angular Scale Polarization of the Cosmic Microwave Background. *Brian G. Keating, Christopher W. O'Dell, Joshua O. Gundersen, Lucio Piccirillo, Nate C. Stebor, & Peter T. Timbie.* 144, 1 (2003)

PICHARDO, BÁRBARA. Nonlinear Effects in Models of the Galaxy. I. Midplane Stellar Orbits in the Presence of Three-Dimensional Spiral Arms. *Bárbara Pichardo, Marco Martos, Edmundo Moreno, & Julia Espresate.* 582, 230 (2003)

Intrinsic, Observed, and Retrieved Properties of Interstellar Turbulence. *Christopher M. Brunt, Mark H. Heyer, Enrique Vázquez-Semadeni, & Bárbara Pichardo.* 595, 824 (2003)

PICHON, CHRISTOPHE. The Clustering of Intergalactic Metals. *Christophe Pichon, Evan Scannapieco, Bastien Aracil, Patrick Petitjean, Dominique Aubert, Jacqueline Bergeron, & Stéphane Colombi.* 597, L97 (2003)

PICKETT, BRIAN K. The Nonlinear Evolution of Massive Stellar Core Collapses that "Fizzle." *James N. Imamura, Brian K. Pickett, & Richard H. Durisen.* 587, 341 (2003)

The Thermal Regulation of Gravitational Instabilities in Protoplanetary Disks. *Brian K. Pickett, Annie C. Mejía, Richard H. Durisen, Patrick M. Cassen, Donald K. Berry, & Robert P. Link.* 590, 1060 (2003)

PIEKAREWICZ, J. Low-Mass Neutron Stars and the Equation of State of Dense Matter. *J. Carriere, C. J. Horowitz, & J. Piekarewicz.* 593, 463 (2003)

PIER, JEFFREY R. See SZALAY, ALEXANDER S., et al. Karhunen-Loève Estimation of the Power Spectrum Parameters from the Angular Distribution of Galaxies in Early Sloan Digital Sky Survey Data.

PIERPAOLI, ELENA. Point Sources in the *Wilkinson Microwave Anisotropy Probe* Sky Maps. *Elena Pierpaoli.* 589, 58 (2003)

PIERRE, M. See COHEN, A. S., et al. The Low-Frequency Radio Counterpart of the *XMM* Large-Scale Structure Survey.

PIERSANTI, LUCIANO. The Chemical Composition of White Dwarfs as a Test of Convective Efficiency during Core Helium Burning. *Oscar Straniero, Immaculada Domínguez, Gianluca Imbriani, & Luciano Piersanti.* 583, 878 (2003)

Carbon-Oxygen White Dwarfs Accreting CO-rich Matter. I. A Comparison between Rotating and Nonrotating Models. *Luciano Piersanti, Simona Gagliardi, Icko Iben, Jr., & Amedeo Tornambé.* 583, 885 (2003)

Carbon-Oxygen White Dwarf Accreting CO-Rich Matter. II. Self-Regulating Accretion Process up to the Explosive Stage. *Luciano Piersanti, Simona Gagliardi, Icko Iben, Jr., & Amedeo Tornambe.* 598, 1229 (2003)

PIETROPAOLO, E. Detection of Photospheric Impacts from Chromospheric Impulsive Events. *P. F. Moretti, F. Berrilli, A. Sebastianelli, C. Briand, & E. Pietropaolo.* 589, L109 (2003)

PIETRZYŃSKI, G. See SCHECHTER, PAUL L., et al. Microlensing of Relativistic Knots in the Quasar HE 1104−1805 AB.

PILAT-LOHINGER, ELKE. Conditions of Dynamical Stability for the HD 160691 Planetary System. *Eric Bois, Ludmila Kiseleva-Eggleton, Nicolas Rambaux, & Elke Pilat-Lohinger.* 598, 1312 (2003)

PIÑA, R. K. A Search for Mid-Infrared Emission from Hot Molecular Core Candidates. *J. M. De Buizer, J. T. Radomski, C. M. Telesco, & R. K. Piña.* 598, 1127 (2003)

PIÑA, ROBERT. Mid-Infrared Imaging of the Protostellar Binary L1448N IRS 3(A,B). *David R. Ciardi, Charles M. Telesco, Jonathan P. Williams, R. Scott Fisher, Chris Packham, Robert Piña, & James Radomski.* 585, 392 (2003)

PIÑA, ROBERT K. Mid-Infrared Imaging of the First-Ascent Giant HD 233517. *R. Scott Fisher, C. M. Telesco, Robert K. Piña, & Roger F. Knacke.* 586, L91 (2003)

Resolved Mid-Infrared Emission in the Narrow-Line Region of NGC 4151. *James T. Radomski, Robert K. Piña, Christopher Packham, Charles M. Telesco, James M. De Buizer, R. Scott Fisher, & A. Robinson.* 587, 117 (2003)

PINDOR, B. See STANEK, K. Z., et al. Spectroscopic Discovery of the Supernova 2003dh Associated with GRB 030329.

See MATHESON, T., et al. Photometry and Spectroscopy of GRB 03029 and Its Associated Supernova 2003dh: The First Two Months.

PINER, B. GLENN. The Speed and Orientation of the Parsec-Scale Jet in 3C 279. *B. Glenn Piner, Stephen C. Unwin, Ann E. Wehrle, Alma C. Zook, C. Megan Urry, & Diane M. Gilmore.* 588, 716 (2003)

PINKNEY, JASON. See GEBHARDT, KARL, et al. Axisymmetric Dynamical Models of the Central Regions of Galaxies.

Kinematics of 10 Early-Type Galaxies from *Hubble Space Telescope* and Ground-based Spectroscopy. *Jason Pinkney, Karl Gebhardt, Ralf Bender, Gary Bower, Alan Dressler, S. M. Faber, Alexei V. Filippenko, Richard Green, Douglas Richstone, & Scott Tremaine.* 596, 903 (2003)

PINNINGTON, E. H. Experimental Transition Rate of the Green Coronal Line of Fe XIV. *P. Beiersdorfer, E. Träbert, & E. H. Pinnington.* 587, 836 (2003)

PINSONNEAULT, M. Cataclysmic Variables: An Empirical Angular Momentum Loss Prescription From Open Cluster Data. *N. Andronov, M. Pinsonneault, & A. Sills.* 582, 358 (2003)

PINSONNEAULT, MARC H. The Distances to Open Clusters from Main-Sequence Fitting. I. New Models and a Comparison with the Properties of the Hyades Eclipsing Binary VB 22. *Marc H. Pinsonneault, Donald M. Terndrup, Robert B. Hanson, & John R. Stauffer.* 598, 588 (2003)

PINTO, PHILIP A. Shock Breakout in Core-Collapse Supernovae and Its Neutrino Signature. *Todd A. Thompson, Adam Burrows, & Philip A. Pinto.* 592, 434 (2003)

PIPHER, JUDITH L. The Compact H II Region S88B: Excitation and Extinction. *Jennifer A. Goetz, Robert Gutermuth, Judith L. Pipher, William J. Forrest, & Eric M. Howard.* 599, 1173 (2003)

PIRAN, T. Modeling Fluctuations in the Gamma-Ray Burst Afterglow Light Curves. *E. Nakar & T. Piran.* 598, 400 (2003)

PIRO, L. See PRICE, P. A., et al. GRB 010921: Strong Limits on an Underlying Supernova from the *Hubble Space Telescope*.

See PRICE, P. A., et al. Discovery of GRB 020405 and Its Late Red Bump.

See DE PASQUALE, M., et al. A Comparative Study of the X-Ray Afterglow Properties of Optically Bright and Dark Gamma-Ray Bursts.

PIRRONELLO, V. Measurement of the Kinetic Energy of Hydrogen Molecules Desorbing from Amorphous Water Ice. *J. E. Roser, S. Swords, G. Vidali, G. Manicò, & V. Pirronello.* 596, L55 (2003)

PISANO, D. J. The State of Galaxy Formation in the Local Universe. *D. J. Pisano & Eric M. Wilcots.* 584, 228 (2003)

PIVOVAROFF, M. J. *XMM-Newton* Observations of PSR B1823−13: An Asymmetric Synchrotron Nebula around a Vela-like Pulsar. *B. M. Gaensler, N. S. Schulz, V. M. Kaspi, M. J. Pivovaroff, & W. E. Becker.* 588, 441 (2003)

PIVOVAROFF, MICHAEL. The Pulsar Wind Nebula in G11.2−0.3. *Mallory S. E. Roberts, Cindy R. Tam, Victoria M. Kaspi, Maxim Lyutikov, Gautam Vasisht, Michael Pivovaroff, Eric V. Gotthelf, & Nobuyuki Kawai.* 588, 992 (2003)

PIZZICHINI, G. See CREW, G. B., et al. *HETE-2* Localization and Observation of the Bright, X-Ray–rich Gamma-Ray Burst GRB 021211.

PIZZOLATO, FABIO. SMAUG: A New Technique for the Deprojection of Galaxy Clusters. *Fabio Pizzolato, Silvano Molendi, Simona Ghizzardi, & Sabrina De Grandi.* 592, 62 (2003)

PLAMBECK, R. Giant Molecular Clouds in M33. II. High-Resolution Observations. *E. Rosolowsky, G. Engargiola, R. Plambeck, & L. Blitz.* 599, 257 (2003)

PLAMBECK, R. L. High-Resolution Imaging of CO Outflows in OMC-2 and OMC-3. *Jonathan P. Williams, R. L. Plambeck, & Mark H. Heyer.* 591, 1025 (2003)

Magnetic Field Morphology of Orion IRc2 from 86 GHz SiO Maser Polarization Images. *R. L. Plambeck, M. C. H. Wright, & R. Rao.* 594, 911 (2003)

Giant Molecular Clouds in M33. I. BIMA All-Disk Survey. *G. Engargiola, R. L. Plambeck, E. Rosolowsky, & L. Blitz.* 149, 343 (2003)

PLAMBECK, RICHARD L. A Giant Outburst at Millimeter Wavelengths in the Orion Nebula. *Geoffrey C. Bower, Richard L. Plambeck, Alberto Bolatto, Nate McCrady, James R. Graham, Imke de Pater, Michael C. Liu, & Frederick K. Baganoff.* 598, 1140 (2003)

PLATAIS, IMANTS. ω Centauri: Not a Recent Merger but Self-enriched? *Imants Platais, Rosemary F. G. Wyse, Leslie Hebb, Young-Wook Lee, & Soo-Chang Rey.* 591, L127 (2003)

PLIONIS, M. Galaxy Bias in Quintessence Cosmological Models. *S. Basilakos & M. Plionis.* 593, L61 (2003)

Galaxy Alignments as a Probe of the Dynamical State of Clusters. *M. Plionis, C. Benoist, S. Maurogordato, C. Ferrari, & S. Basilakos.* 594, 144 (2003)

PLUCINSKY, P. P. See MARKEVITCH, M., et al. *Chandra* Spectra of the Soft X-Ray Diffuse Background.

X-Ray Observations of the Compact Central Object in Supernova Remnant G347.3−0.5. *J. S. Lazendic, P. O. Slane, B. M. Gaensler, P. P. Plucinsky, J. P. Hughes, D. K. Galloway, & F. Crawford.* 593, L27 (2003)

PODARIU, SILVIU. Radio Galaxy Redshift–Angular Size Data Constraints on Dark Energy. *Silviu Podariu, Ruth A. Daly, Matthew P. Mory, & Bharat Ratra.* 584, 577 (2003)

PODSIADLOWSKI, PHILIPP. The Galactic Population of Low- and Intermediate-Mass X-Ray Binaries. *Eric Pfahl, Saul Rappaport, & Philipp Podsiadlowski.* 597, 1036 (2003)

POGGE, R. W. See FIELDS, DALE L., et al. High-Precision Limb-Darkening Measurement of a K3 Giant Using Microlensing.

POGGE, RICHARD W. Circumnuclear Dust in Nearby Active and Inactive Galaxies. II. Bars, Nuclear Spirals, and the Fueling of Active Galactic Nuclei. *Paul Martini, Michael W. Regan, John S. Mulchaey, & Richard W. Pogge.* 589, 774 (2003)

Circumnuclear Dust in Nearby Active and Inactive Galaxies. I. Data. *Paul Martini, Michael W. Regan, John S. Mulchaey, & Richard W. Pogge.* 146, 353 (2003)

POGGIANTI, BIANCA M. See MOBASHER, BAHRAM, et al. A Photometric and Spectroscopic Study of Dwarf and Giant Galaxies in the Coma Cluster. IV. The Luminosity Function.

POGLITSCH, ALBRECHT. Realizing Integral Field Spectroscopy in the Far-Infrared. *Leslie W. Looney, Walfried Raab, Albrecht Poglitsch, & Norbert Geis.* 597, 628 (2003)

POGOSYAN, D. See MASON, B. S., et al. The Anisotropy of the Microwave Background to $l = 3500$: Deep Field Observatons with the Cosmic Background Imager.

See PEARSON, T. J., et al. The Anisotropy of the Microwave Background to $l = 3500$: Mosaic Observations with the Cosmic Background Imager.

See MYERS, S. T., et al. A Fast Gridded Method for the Estimation of the Power Spectrum of the Cosmic Microwave Background from Interferometer Data with Application to the Cosmic Background Imager.

See SIEVERS, J. L., et al. Cosmological Parameters from Cosmic Background Imager Observations and Comparisons with BOOMERANG, DASI, and MAXIMA.

See GOLDSTEIN, J. H., et al. Estimates of Cosmological Parameters Using the Cosmic Microwave Background Angular Power Spectrum of ACBAR.

See RUHL, J. E., et al. Improved Measurement of the Angular Power Spectrum of Temperature Anisotropy in the Cosmic Microwave Background from Two New Analyses of BOOMERANG Observations.

POHL, A. C. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

POHL, M. EGRET Upper Limits on the High-Energy Gamma-Ray Emission of Galaxy Clusters. *O. Reimer, M. Pohl, P. Sreekumar, & J. R. Mattox.* 588, 155 (2003)

The Influence of Electron Impact Ionization in the Relativistic Pickup of Interstellar Neutrals. *R. Schlickeiser, M. Pohl, & R. Vainio.* 596, 840 (2003)

POHL, MARTIN. See BUTT, YOUSAF M., et al. *Chandra*/Very Large Array Follow-up of TeV J2032+4131, the Only Unidentified TeV Gamma-Ray Source.

POLENTA, G. See CRILL, B. P., et al. BOOMERANG: A Balloon-Borne Millimeter-Wave Telescope and Total Power Receiver for Mapping Anisotropy in the Cosmic Microwave Background.

See RUHL, J. E., et al. Improved Measurement of the Angular Power Spectrum of Temperature Anisotropy in the Cosmic Microwave Background from Two New Analyses of BOOMERANG Observations.

POLETTO, G. Temporal Evolution of a Streamer Complex: Coronal and in Situ Plasma Parameters. *A. Bemporad, G. Poletto, S. T. Suess, Y.-K. Ko, S. Parenti, P. Riley, M. Romoli, & T. Z. Zurbuchen.* 593, 1146 (2003)

POLETTO, GIANNINA. The Nascent Solar Wind: Origin and Acceleration. *Luca Teriaca, Giannina Poletto, Marco Romoli, & Doug A. Biesecker.* 588, 566 (2003)

POLI, F. A European Southern Obseratory Very Large Telescope Survey of Near-Infrared ($Z \leq 25$) Selected Galaxies at Redshifts $4.5 < z < 6$: Constraining the Cosmic Star Formation Rate near the Reionization Epoch. *A. Fontana, F. Poli, N. Menci, M. Nonino, E. Giallongo, S. Cristiani, & S. D'Odorico.* 587, 544 (2003)

Quasar Evolution Driven by Galaxy Encounters in Hierarchical Structures. *N. Menci, A. Cavaliere, A. Fontana, E. Giallongo, F. Poli, & V. Vittorini.* 587, L63 (2003)

The Evolution of the Galaxy Luminosity Function in the Rest-Frame Blue Band up to $z = 3.5$. *F. Poli, E. Giallongo, A. Fontana, N. Menci, G. Zamorani, M. Nonino, P. Saracco, E. Vanzella, I. Donnarumma, S. Salimbeni, A. Cimatti, S. Cristiani, E. Daddi, S. D'Odorico, M. Mignoli, L. Pozzetti, & A. Renzini.* 593, L1 (2003)

See FONTANA, A., et al. The Assembly of Massive Galaxies from Near-Infrared Observations of the Hubble Deep Field–South.

POLLACCO, D. L. Emission Lines of C I in the Optical Spectra of Gaseous Nebulae. *F. P. Keenan, L. H. Aller, K. M. Exter, S. Hyung, & D. L. Pollacco.* 584, 385 (2003)

POLLACK, L. K. VLBI Polarimetry of 177 Sources from the Caltech–Jodrell Bank Flat-Spectrum Survey. *L. K. Pollack, G. B. Taylor, & R. T. Zavala.* 589, 733 (2003)

POLLACK, SCOTT E. See GNEDIN, NICKOLAY Y., et al. Linear Gas Dynamics in the Expanding Universe.

POLLARD, K. R. See FIELDS, DALE L., et al. High-Precision Limb-Darkening Measurement of a K3 Giant Using Microlensing.

POMERLEAU, CAROLINE. An Outer Galaxy Molecular Cloud Catalog. *Christopher M. Brunt, C. R. Kerton, & Caroline Pomerleau.* 144, 47 (2003)

POMPÉIA, LUCIANA. Detailed Analysis of Nearby Bulgelike Dwarf Stars. III. α-Element and Heavy-Element Abundances. *Luciana Pompéia, Beatriz Barbuy, & Michel Grenon.* 592, 1173 (2003)

PONGETTI, F. See CRILL, B. P., et al. BOOMERANG: A Balloon-Borne Millimeter-Wave Telescope and Total Power Receiver for Mapping Anisotropy in the Cosmic Microwave Background.

PONMAN, T. J. The Time-variable Ultraluminous X-Ray Sources of "The Antennae." *G. Fabbiano, A. Zezas, A. R. King, T. J. Ponman, A. Rots, & Francois Schweizer.* 584, L5 (2003)

A Variable Ultraluminous Supersoft X-Ray Source in "The Antennae": Stellar-Mass Black Hole or White Dwarf? *G. Fabbiano, A. R. King, A. Zezas, T. J. Ponman, A. Rots, & François Schweizer.* 591, 843 (2003)

PONMAN, TREVOR J. Signatures of Galaxy Formation in the Intracluster Medium. *G. Mark Voit & Trevor J. Ponman.* 594, L75 (2003)

POOLEY, DAVID. Dynamical Formation of Close Binary Systems in Globular Clusters. *David Pooley, Walter H. G. Lewin, Scott F. Anderson, Holger Baumgardt, Alexei V. Filippenko, Bryan M. Gaensler, Lee Homer, Piet Hut, Victoria M. Kaspi, Junichiro Makino, Bruce Margon, Steve*

McMillan, Simon Portegies Zwart, Michiel van der Klis, & Frank Verbunt. 591, L131 (2003)

Pooley, G. G. On the Origin of the Various Types of Radio Emission in GRS 1915+105. *S. V. Vadawale, A. R. Rao, S. Naik, J. S. Yadav, C. H. Ishwara-Chandra, A. Pramesh Rao, & G. G. Pooley.* 597, 1023 (2003)

Pope, Adrian. See Szalay, Alexander S., et al. Karhunen-Loève Estimation of the Power Spectrum Parameters from the Angular Distribution of Galaxies in Early Sloan Digital Sky Survey Data.

Popescu, Miruna D. Comparison of Total Solar Irradiance with NASA/National Solar Observatory Spectromagnetograph Data in Solar Cycles 22 and 23. *Harrison P. Jones, Detrick D. Branston, Patricia B. Jones, & Miruna D. Popescu.* 589, 658 (2003)

Popović, L. Č. Balmer Lines as Diagnostics of Physical Conditions in Active Galactic Nucleus Broad Emission Line Regions. *L. Č. Popović.* 599, 140 (2003)

The Line Emission Region in III Zw 2: Kinematics and Variability. *L. Č. Popović, E. G. Mediavilla, E. Bon, N. Stanić, & A. Kubičela.* 599, 185 (2003)

Popowski, P. See Alcock, C., et al. The MACHO Project Large Magellanic Cloud Variable Star Inventory. XI. Frequency Analysis of the Fundamental Mode RR Lyrae Stars.

Poppi, S. Polarization Observations in a Low Synchrotron Emission Field at 1.4 GHz. *G. Bernardi, E. Carretti, S. Cortiglioni, R. J. Sault, M. J. Kesteven, & S. Poppi.* 594, L5 (2003)

Porras, Alicia. The Binary Jet in L1551 IRS 5. *Luis F. Rodríguez, Alicia Porras, Mark J. Claussen, Salvador Curiel, David J. Wilner, & Paul T. P. Ho.* 586, L137 (2003)

Portegies Zwart, Simon. A Dynamical Model for the Globular Cluster G1. *Holger Baumgardt, Junichiro Makino, Piet Hut, Steve McMillan, & Simon Portegies Zwart.* 589, L25 (2003)

See Pooley, David, et al. Dynamical Formation of Close Binary Systems in Globular Clusters.

Portegies Zwart, Simon F. The Origin of IRS 16: Dynamically Driven Inspiral of a Dense Star Cluster to the Galactic Center? *Simon F. Portegies Zwart, Stephen L. W. McMillan, & Ortwin Gerhard.* 593, 352 (2003)

The Fate of Star Clusters near the Galactic Center. I. Analytic Considerations. *Stephen L. W. McMillan & Simon F. Portegies Zwart.* 596, 314 (2003)

Porter, J. G. *Chandra* Observations of Magnetic White Dwarfs and Their Theoretical Implications. *Z. E. Musielak, M. Noble, J. G. Porter, & D. E. Winget.* 593, 481 (2003)

Solar Coronal Heating and the Magnetic Flux Content of the Network. *D. A. Falconer, R. L. Moore, J. G. Porter, & D. H. Hathaway.* 593, 549 (2003)

Porter, N. A. See Akerlof, C. W., et al. A Search for Correlations of TeV Gamma Rays with Ultra–High-Energy Cosmic Rays.

Portinari, Laura. Galaxy Formation: Cold Dark Matter, Feedback, and the Hubble Sequence. *Jesper Sommer-Larsen, Martin Götz, & Laura Portinari.* 596, 47 (2003)

Posch, T. Infrared Properties of Solid Titanium Oxides: Exploring Potential Primary Dust Condensates. *T. Posch, F. Kerschbaum, D. Fabian, H. Mutschke, J. Dorschner, A. Tamanai, & T. Henning.* 149, 437 (2003)

Pospieszalski, M. See Jarosik, N., et al. Design, Implementation, and Testing of the *Microwave Anisotropy Probe* Radiometers.

Possenti, A. Accurate Mass Ratio and Heating Effects in the Dual-Line Millisecond Binary Pulsar in NGC 6397. *F. R. Ferraro, E. Sabbi, R. Gratton, A. Possenti, N. D'Amico, A. Bragaglia, & F. Camilo.* 584, L13 (2003)

The Complex Hα Line Profile of the Bright Companion to PSR J1740−5340 in NGC 6397. *E. Sabbi, R. Gratton, F. R. Ferraro, A. Bragaglia, A. Possenti, N. D'Amico, & F. Camilo.* 589, L41 (2003)

A Search for Pulsars in Quiescent Soft X-Ray Transients. I. *M. Burgay, L. Burderi, A. Possenti, N. D'Amico, R. N. Manchester, A. G. Lyne, F. Camilo, & S. Campana.* 589, 902 (2003)

See McLaughlin, M. A., et al. PSR J1847−0130: A Radio Pulsar with Magnetar Spin Characteristics.

The Puzzling Dynamical Status of the Core of the Globular Cluster NGC 6752. *F. R. Ferraro, A. Possenti, E. Sabbi, P. Lagani, R. T. Rood, N. D'Amico, & L. Origlia.* 595, 179 (2003)

Three Binary Millisecond Pulsars in NGC 6266. *A. Possenti, N. D'Amico, R. N. Manchester, F. Camilo, A. G. Lyne, J. Sarkissian, & A. Corongiu.* 599, 475 (2003)

The Glitches of the Anomalous X-Ray Pulsar 1RXS J170849.0−400910. *S. Dall'Osso, G. L. Israel, L. Stella, A. Possenti, & E. Perozzi.* 599, 485 (2003)

Possenti, Andrea. The Helium White Dwarf Orbiting the Millisecond Pulsar in the Halo of the Globular Cluster NGC 6752. *Francesco R. Ferraro, Andrea Possenti, Elena Sabbi, & Nichi D'Amico.* 596, L211 (2003)

Probing the Presence of a Single or Binary Black Hole in the Globular Cluster NGC 6752 with Pulsar Dynamics. *Monica Colpi, Michela Mapelli, & Andrea Possenti.* 599, 1260 (2003)

Postman, M. See Tran, H. D., et al. Advanced Camera for Surveys Observations of Young Star Clusters in the Interacting Galaxy UGC 10214.

See Bouwens, R. J., et al. Star Formation at $z \sim 6$: *i*-Dropouts in the Advanced Camera for Surveys Guaranteed Time Observation Fields.

See Meurer, Gerhardt R., et al. The Discovery of Globular Clusters in the Protospiral Galaxy NGC 2915: Implications for Hierarchical Galaxy Evolution.

Postman, Marc. See Bahcall, Neta A., et al. The Cluster Mass Function from Early Sloan Digital Sky Survey Data: Cosmological Implications.

See Blakeslee, John P., et al. Discovery of Two Distant Type Ia Supernovae in the Hubble Deep Field–North with the Advanced Camera for Surveys.

See Bahcall, Neta A., et al. A Merged Catalog of Clusters of Galaxies from Early Sloan Digital Sky Survey Data.

See Blakeslee, John P., et al. Advanced Camera for Surveys Photometry of the Cluster RDCS 1252.9−2927: The Color-Magnitude Relation at $z = 1.24$.

Potekhin, Alexander Y. Equation of State and Opacities for Hydrogen Atmospheres of Neutron Stars with Strong Magnetic Fields. *Alexander Y. Potekhin & Gilles Chabrier.* 585, 955 (2003)

Thermal Structure and Cooling of Superfluid Neutron Stars with Accreted Magnetized Envelopes. *Alexander Y. Potekhin, Dmitry G. Yakovlev, Gilles Chabrier, & Oleg Y. Gnedin.* 594, 404 (2003)

Atmospheres and Spectra of Strongly Magnetized Neutron Stars. III. Partially Ionized Hydrogen Models. *Wynn C. G. Ho, Dong Lai, Alexander Y. Potekhin, & Gilles Chabrier.* 599, 1293 (2003)

Potgieter, M. S. Solar Wind Effects on the Transport of 3–10 MeV Cosmic-Ray Electrons from Solar Minimum to Solar Maximum. *S. E. S. Ferreira, M. S. Potgieter, D. M. Moeketsi, B. Heber, & H. Fichtner.* 594, 552 (2003)

Pottschmidt, K. X-Ray Temporal Properties of XTE J1650−500 during Outburst Decay. *E. Kalemci, J. A. Tomsick, R. E. Rothschild, K. Pottschmidt, S. Corbel, R. Wijnands, J. M. Miller, & P. Kaaret.* 586, 419 (2003)

Pounds, K. See Markowitz, A., et al. X-Ray Fluctuation Power Spectral Densities of Seyfert 1 Galaxies.

Pourbaix, Dimitri. See Fischer, Debra A., et al. A Planetary Companion to HD 40979 and Additional Planets Orbiting HD 12661 and HD 38529.

Power-Mooney, B. See Holder, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.

See de la Calle Pérez, I., et al. Search for High-Energy Gamma Rays from an X-Ray–Selected Blazar Sample.

Pozzetti, L. See Poli, F., et al. The Evolution of the Galaxy Luminosity Function in the Rest-Frame Blue Band up to $z = 3.5$.

Prada, Francisco. See Helmi, Amina, et al. Selection of Metal-poor Giant Stars Using the Sloan Digital Sky Survey Photometric System.

Observing the Dark Matter Density Profile of Isolated Galaxies. *Francisco Prada, Mayrita Vitvitska, Anatoly Klypin, Jon A. Holtzman, David J. Schlegel, Eva K. Grebel, H.-W. Rix, J. Brinkmann, T. A. McKay, & I. Csabai.* 598, 260 (2003)

Pradhan, Anil K. Predicted Fe II Emission-Line Strengths from Active Galactic Nuclei. *T. A. A. Sigut & Anil K. Pradhan.* 145, 15 (2003)

Electron-Ion Recombination Rate Coefficients and Photoionization Cross Sections for Astrophysically Abundant Elements. VII. Relativistic Calculations for O VI and O VII for Ultraviolet and X-Ray Modeling. *Sultana N. Nahar & Anil K. Pradhan.* 149, 237 (2003)

Pramesh Rao, A. On the Origin of the Various Types of Radio Emission in GRS 1915+105. *S. V. Vadawale, A. R. Rao, S. Naik, J. S. Yadav, C. H. Ishwara-Chandra, A. Pramesh Rao, & G. G. Pooley.* 597, 1023 (2003)

Prantzos, Nikos. Jet-induced Nucleosynthesis in Misaligned Microquasars. *Yousaf M. Butt, Thomas J. Maccarone, & Nikos Prantzos.* 587, 748 (2003)

PRATO, L. Astrophysics of Young Star Binaries. *L. Prato, T. P. Greene, & M. Simon.* 584, 853 (2003)
See BURGASSER, ADAM J., et al. The First Substellar Subdwarf? Discovery of a Metal-poor L Dwarf with Halo Kinematics.
The NIRSPEC Brown Dwarf Spectroscopic Survey. I. Low-Resolution Near-Infrared Spectra. *Ian S. McLean, Mark R. McGovern, Adam J. Burgasser, J. Davy Kirkpatrick, L. Prato, & Sungsoo S. Kim.* 596, 561 (2003)
The Smallest Mass Ratio Young Star Spectroscopic Binaries: Erratum (ApJ, 569, 863 [2002]). *L. Prato, M. Simon, T. Mazeh, I. S. McLean, D. Norman, & S. Zucker.* 598, 1409 (2003)
The Mass Ratio Distribution in Main-Sequence Spectroscopic Binaries Measured by Infrared Spectroscopy. *T. Mazeh, M. Simon, L. Prato, B. Markus, & S. Zucker.* 599, 1344 (2003)
PRATT, M. See ALCOCK, C., et al. The MACHO Project Large Magellanic Cloud Variable Star Inventory. XI. Frequency Analysis of the Fundamental Mode RR Lyrae Stars.
PRAVDO, S. H. See TEEGARDEN, B. J., et al. Discovery of a New Nearby Star.
See BAGANOFF, F. K., et al. *Chandra* X-Ray Spectroscopic Imaging of Sagittarius A* and the Central Parsec of the Galaxy.
PRAVDO, STEVEN H. Coronal X-Ray Emission from an Intermediate-Age Brown Dwarf. *Yohko Tsuboi, Yoshitomo Maeda, Eric D. Feigelson, Gordon P. Garmire, George Chartas, Koji Mori, & Steven H. Pravdo.* 587, L51 (2003)
PREDEHL, P. Discovery of a Binary Active Galaxy Nucleus in the Ultraluminous Infrared Galaxy NGC 6240 Using *CHANDRA*. *S. Komossa, V. Burwitz, G. Hasinger, P. Predehl, J. S. Kaastra, & Y. Ikebe.* 582, L15 (2003)
A New X-Ray Flare from the Galactic Nucleus Detected with the *XMM-Newton* Photon Imaging Cameras. *A. Goldwurm, E. Brion, P. Goldoni, P. Ferrando, F. Daigne, A. Decourchelle, R. S. Warwick, & P. Predehl.* 584, 751 (2003)
PREECE, R. Particle Acceleration in Relativistic Jets due to Weibel Instability. *K.-I. Nishikawa, P. Hardee, G. Richardson, R. Preece, H. Sol, & G. J. Fishman.* 595, 555 (2003)
PREECE, ROBERT D. See MITROFANOV, IGOR G., et al. Comparison of Redshift-known Gamma-Ray Bursts with the Main Groups of Bright BATSE Events.
PREITE-MARTINEZ, A. See GRANDI, P., et al. *BeppoSAX* Observations of Centaurus A: The Hard Continuum and the Iron-Line Feature.
PREMINGER, DORA G. The Contribution of Faculae and Network to Long-Term Changes in the Total Solar Irradiance. *Stephan R. Walton, Dora G. Preminger, & Gary A. Chapman.* 590, 1088 (2003)
PRESTAGE, N. P. Constraints on Coronal Mass Ejection Dynamics from Simultaneous Radio and White-Light Observations. *M. J. Reiner, A. Vourlidas, O. C. St. Cyr, J. T. Burkepile, R. A. Howard, M. L. Kaiser, N. P. Prestage, & J.-L. Bougeret.* 590, 533 (2003)
PRESTON, GEORGE W. Binary Blue Metal-Poor Stars: Evidence for Asymptotic Giant Branch Mass Transfer. *Christopher Sneden, George W. Preston, & John J. Cowan.* 592, 504 (2003)
Chemical Substructure in the Milky Way Halo: A New Population of Old Stars. *Inese I. Ivans, Christopher Sneden, C. Renée James, George W. Preston, Jon P. Fulbright, Peter A. Höflich, Bruce W. Carney, & J. Craig Wheeler.* 592, 906 (2003)
PRESTWICH, A. H. Classifying X-Ray Sources in External Galaxies from X-Ray Colors. *A. H. Prestwich, J. A. Irwin, R. E. Kilgard, M. I. Krauss, A. Zezas, F. Primini, P. Kaaret, & B. Boroson.* 595, 719 (2003)
PRICE, P. A. GRB 010921: Strong Limits on an Underlying Supernova from the *Hubble Space Telescope*. *P. A. Price, S. R. Kulkarni, B. P. Schmidt, T. J. Galama, J. S. Bloom, E. Berger, D. A. Frail, S. G. Djorgovski, D. W. Fox, A. A. Henden, S. Klose, F. A. Harrison, D. E. Reichart, R. Sari, S. A. Yost, T. S. Axelrod, P. McCarthy, J. Holtzman, J. P. Halpern, R. Kimble, J. C. Wheeler, R. A. Chevalier, K. Hurley, G. R. Ricker, E. Costa, F. Frontera, & L. Piro.* 584, 931 (2003)
See FOX, D. W., et al. Discovery of Early Optical Emission from GRB 021211.
See GALAMA, T. J., et al. *Hubble Space Telescope* and Ground-based Optical and Ultraviolet Observations of GRB 010222.
Discovery of GRB 020405 and Its Late Red Bump. *P. A. Price, S. R. Kulkarni, E. Berger, D. W. Fox, J. S. Bloom, S. G. Djorgovski, D. A. Frail, T. J. Galama, F. A. Harrison, P. McCarthy, D. E. Reichart, R. Sari, S. A. Yost, H. Jerjen, K. Flint, A. Phillips, B. E. Warren, T. S. Axelrod, R. A. Chevalier, J. Holtzman, R. A. Kimble, B. P. Schmidt, J. C. Wheeler, F. Frontera, E. Costa, L. Piro, K. Hurley, T. Cline, C. Guidorzi, E. Montanari, E. Mazets, S. Golenetskii, I. Mitrofanov, D. Anfimov, A. Kozyrev, M. Litvak, A. Sanin, W. Boynton, C. Fellows, K. Harshman, C. Shinohara, A. Gal-Yam, E. Ofek, & Y. Lipkin.* 589, 838 (2003)
See FRAIL, D. A., et al. The Broadband Afterglow of GRB 980703.
PRICE, P. B. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.
PRICE, PAUL A. See BARTH, AARON J., et al. Optical Spectropolarimetry of the GRB 020813 Afterglow.
PRICE, STEPHAN D. A Uniform Database of 2.4–45.4 Micron Spectra from the *Infrared Space Observatory* Short Wavelength Spectrometer. *G. C. Sloan, Kathleen E. Kraemer, Stephan D. Price, & Russell F. Shipman.* 147, 379 (2003)
Guilt by Association: The 13 Micron Dust Emission Feature and Its Correlation to Other Gas and Dust Features. *G. C. Sloan, Kathleen E. Kraemer, J. H. Goebel, & Stephan D. Price.* 594, 482 (2003)
PRIEDHORSKY, W. C. See MASON, K. O., et al. The X-Ray Spectrum of the Seyfert 1 Galaxy Markarian 766: Dusty Warm Absorber or Relativistic Emission Lines?
PRIEDHORSKY, WILLIAM C. Fast X-Ray Transients and Their Connection to Gamma-Ray Bursts. *Vadim A. Arefiev, William C. Priedhorsky, & Konstantin N. Borozdin.* 586, 1238 (2003)
PRIEST, E. R. Three-Dimensional Reconnection of Untwisted Magnetic Flux Tubes. *M. G. Linton & E. R. Priest.* 595, 1259 (2003)
Binary Reconnection and the Heating of the Solar Corona. *E. R. Priest, D. W. Longcope, & V. S. Titov.* 598, 667 (2003)
PRIETO, M. ALMUDENA. The Infrared Spectral Energy Distribution of the Seyfert 2 Prototype NGC 5252. *M. Almudena Prieto & J. A. Acosta-Pulido.* 583, 689 (2003)
PRIETO, MERCEDES. K_s Number Counts in the Groth and Coppi Fields. *David Cristóbal-Hornillos, Marc Balcells, Mercedes Prieto, Rafael Guzmán, Jesús Gallego, Nicolás Cardiel, Ángel Serrano, & Roser Pelló.* 595, 71 (2003)
PRIEUR, J. L. Speckle Observations of Composite Spectrum Stars. II. Differential Photometry of the Binary Components. *J. L. Prieur, J. M. Carquillat, N. Ginestet, L. Koechlin, A. Lannes, E. Anterrieu, S. Roques, E. Aristidi, & M. Scardia.* 144, 263 (2003)
PRIGOZHIN, G. See CREW, G. B., et al. *HETE-2* Localization and Observation of the Bright, X-Ray–rich Gamma-Ray Burst GRB 021211.
PRIGOZHIN, GREGORY Y. Refining *Chandra*/ACIS Subpixel Event Repositioning Using a Backside-illuminated CCD Model. *Jingqiang Li, Joel H. Kastner, Gregory Y. Prigozhin, & Norbert S. Schulz.* 590, 586 (2003)
PRIMAS, FRANCESCA. See SNEDEN, CHRISTOPHER, et al. The Extremely Metal-poor, Neutron Capture–rich Star CS 22892−052: A Comprehensive Abundance Analysis.
PRIMINI, F. Classifying X-Ray Sources in External Galaxies from X-Ray Colors. *A. H. Prestwich, J. A. Irwin, R. E. Kilgard, M. I. Krauss, A. Zezas, F. Primini, P. Kaaret, & B. Boroson.* 595, 719 (2003)
PRINCE, T. A. Three New Long-Period X-Ray Pulsars Discovered in the Small Magellanic Cloud. *D. J. Macomb, D. W. Fox, R. C. Lamb, & T. A. Prince.* 584, L79 (2003)
Discovery of a Possible Anomalous X-Ray Pulsar in the Small Magellanic Cloud: Addendum (ApJ, 574, L29 [2002]). *R. C. Lamb, D. W. Fox, D. J. Macomb, & T. A. Prince.* 599, L115 (2003) (Orig. paper in 574, L29 (2002))
PRINGLE, J. E. The Disk-Jet Connection in Microquasars and Active Galactic Nuclei. *Mario Livio, J. E. Pringle, & A. R. King.* 593, 184 (2003)
A *Hubble Space Telescope* Survey of Extended [O III] λ5007 Emission in a Far-Infrared Selected Sample of Seyfert Galaxies: Results. *H. R. Schmitt, J. L. Donley, R. R. J. Antonucci, J. B. Hutchings, A. L. Kinney, & J. E. Pringle.* 597, 768 (2003)
PRITZL, BARTON J. Anomalous Evolution of the Dwarf Galaxy HIPASS J1321−31. *Barton J. Pritzl, Patricia M. Knezek, John S. Gallagher III, Marco Grossi, Mike J. Disney, Robert F. Minchin, Kenneth C. Freeman, Eline Tolstoy, & Abi Saha.* 596, L47 (2003)
PROCHASKA, JASON X. The Chemical Uniformity of High-z Damped Lyα Protogalaxies. *Jason X. Prochaska.* 582, 49 (2003)
The ESI/Keck II Damped Lyα Abundance Database. *Jason X. Prochaska, Eric Gawiser, Arthur M. Wolfe, Jeff Cooke, & Dawn Gelino.* 147, 227 (2003)
C II* Absorption in Damped Lyα Systems. I. Star Formation Rates in a Two-Phased Medium. *Arthur M. Wolfe, Jason X. Prochaska, & Eric Gawiser.* 593, 215 (2003)

C II* Absorption in Damped Lyα Systems. I. A New Window on the Star Formation History of the Universe. *Arthur M. Wolfe, Eric Gawiser, & Jason X. Prochaska.* 593, 235 (2003)

The C IV Mass Density of the Universe at Redshift 5. *Max Pettini, Piero Madau, Michael Bolte, Jason X. Prochaska, Sara L. Ellison, & Xiaohui Fan.* 594, 695 (2003)

The Age-Metallicity Relation of the Universe in Neutral Gas: The First 100 Damped Lyα Systems. *Jason X. Prochaska, Eric Gawiser, Arthur M. Wolfe, Sandra Castro, & S. G. Djorgovski.* 595, L9 (2003)

New Damped Lyα Metallicities from ESI Spectroscopy of Five Palomar Sky Survey Quasars. *Jason X. Prochaska, Sandra Castro, & S. G. Djorgovski.* 148, 317 (2003)

Metallicity Evolution of Damped Lyα Systems in ΛCDM Cosmology. *Renyue Cen, Jeremiah P. Ostriker, Jason X. Prochaska, & Arthur M. Wolfe.* 598, 741 (2003)

PRODANOVIC, TIJANA. On Nonprimordial Deuterium Production by Accelerated Particles. *Tijana Prodanović & Brian D. Fields.* 597, 48 (2003)

PROGA, DANIEL. Accretion of Low Angular Momentum Material onto Black Holes: Two-dimensional Hydrodynamical Inviscid Case. *Daniel Proga & Mitchell C. Begelman.* 582, 69 (2003)

Numerical Simulations of Mass Outflows Driven from Accretion Disks by Radiation and Magnetic Forces. *Daniel Proga.* 585, 406 (2003)

On Resonance-Line Profiles Predicted by Radiation-driven Disk-Wind Models. *Daniel Proga.* 592, L9 (2003)

Accretion of Low Angular Momentum Material onto Black Holes: Two-dimensional Magnetohydrodynamic Case. *Daniel Proga & Mitchell C. Begelman.* 592, 767 (2003)

Axisymmetric Magnetohydrodynamic Simulations of the Collapsar Model for Gamma-Ray Bursts. *Daniel Proga, Andrew I. MacFadyen, Philip J. Armitage, & Mitchell C. Begelman.* 599, L5 (2003)

PROTHEROE, R. J. See ENOMOTO, R., et al. Search for TeV Gamma Rays from SN 1987A in 2001.

PRUET, JASON. Nucleosynthesis in Gamma-Ray Burst Accretion Disks. *Jason Pruet, S. E. Woosley, & R. D. Hoffman.* 586, 1254 (2003)

Neutrinos from the Propagation of a Relativistic Jet through a Star. *Jason Pruet.* 591, 1104 (2003)

Estimates of Stellar Weak Interaction Rates for Nuclei in the Mass Range $A = 65–80$. *Jason Pruet & George M. Fuller.* 149, 187 (2003)

PRUNET, S. See MASON, B. S., et al. The Anisotropy of the Microwave Background to $l = 3500$: Deep Field Observatons with the Cosmic Background Imager.

See PEARSON, T. J., et al. The Anisotropy of the Microwave Background to $l = 3500$: Mosaic Observations with the Cosmic Background Imager.

See MYERS, S. T., et al. A Fast Gridded Method for the Estimation of the Power Spectrum of the Cosmic Microwave Background from Interferometer Data with Application to the Cosmic Background Imager.

See SIEVERS, J. L., et al. Cosmological Parameters from Cosmic Background Imager Observations and Comparisons with BOOMERANG, DASI, and MAXIMA.

See RUHL, J. E., et al. Improved Measurement of the Angular Power Spectrum of Temperature Anisotropy in the Cosmic Microwave Background from Two New Analyses of BOOMERANG Observations.

PRYKE, C. See MASON, B. S., et al. The Anisotropy of the Microwave Background to $l = 3500$: Deep Field Observatons with the Cosmic Background Imager.

See PEARSON, T. J., et al. The Anisotropy of the Microwave Background to $l = 3500$: Mosaic Observations with the Cosmic Background Imager.

PRZYBILLA, NOBERT. A New Extragalactic Distance Determination Method Using Flux-weighted Gravity of Late B and Early A Supergiants. *Rolf P. Kudritzki, Fabio Bresolin, & Nobert Przybilla.* 582, L83 (2003)

PRZYBYLSKI, G. T. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

PSALTIS, DIMITRIOS. Spectral Lines from Rotating Neutron Stars. *Feryal Özel & Dimitrios Psaltis.* 582, L31 (2003)

Eddington-limited X-Ray Bursts as Distance Indicators. I. Systematic Trends and Spherical Symmetry in Bursts from 4U 1728−34. *Duncan K. Galloway, Dimitrios Psaltis, Deepto Chakrabarty, & Michael P. Muno.* 590, 999 (2003)

PSZCZOLKOWSKI, LECH. See MEDVEDEV, IVAN, et al. The Millimeter- and Submillimeter-Wave Spectrum of the Trans-Trans Conformer of Diethyl Ether ($C_2H_5OC_2H_5$).

PTAK, A. SHEEP: The Search for the High-Energy Extragalactic Population. *K. Nandra, I. Georgantopoulos, A. Ptak, & T. J. Turner.* 582, 615 (2003)

A *Chandra* Survey of the Nearest Ultraluminous Infrared Galaxies: Obscured Active Galactic Nuclei or Superstarbursts? *A. Ptak, T. Heckman, N. A. Levenson, K. Weaver, & D. Strickland.* 592, 782 (2003)

PTAK, ANDREW F. *Chandra* ACIS-S Observations of Three Quasars with Low-Redshift Damped Lyα Absorption: Constraints on the Cosmic Neutral Gas-Phase Metallicity at Redshift $z \approx 0.4$. *David A. Turnshek, Sandhya M. Rao, Andrew F. Ptak, Richard E. Griffiths, & Eric M. Monier.* 590, 730 (2003)

PUCHALLA, J. The MAT/TOCO Measurement of the Angular Power Spectrum of the Cosmic Microwave Background at 30 and 40 GHz. *M. R. Nolta, M. J. Devlin, W. B. Dorwart, A. D. Miller, L. A. Page, J. Puchalla, E. Torbet, & H. T. Tran.* 598, 97 (2003)

PUCHNAREWICZ, E. M. See MASON, K. O., et al. The X-Ray Spectrum of the Seyfert 1 Galaxy Markarian 766: Dusty Warm Absorber or Relativistic Emission Lines?

PUDRITZ, RALPH E. Three-Dimensional Simulations of Jets from Keplerian Disks: Self-Regulatory Stability. *Rachid Ouyed, David A. Clarke, & Ralph E. Pudritz.* 582, 292 (2003)

Gravitational Collapse of Filamentary Magnetized Molecular Clouds. *David A. Tilley & Ralph E. Pudritz.* 593, 426 (2003)

The Origin of Jovian Planets in Protostellar Disks: The Role of Dead Zones. *Soko Matsumura & Ralph E. Pudritz.* 598, 645 (2003)

PUETTER, R. C. Near-Infrared Spectrophotometry and the CO Emission in V2274 Cygni (Nova Cygni 2001 No. 1). *Richard J. Rudy, William L. Dimpfl, David K. Lynch, S. Mazuk, Catherine C. Venturini, John C. Wilson, R. C. Puetter, & R. Brad Perry.* 596, 1229 (2003)

PUGA, E. See FELDT, M., et al. Discovery of a Candidate for the Central Star of the Ultracompact H II Region G5.89−0.39.

PUGET, J.-L. Predictions for Cosmological Infrared Surveys from Space with the Multiband Imaging Photometer for *SIRTF*. *H. Dole, G. Lagache, & J.-L. Puget.* 585, 617 (2003)

PULLEN, C. See BÖTTCHER, M., et al. Coordinated Multiwavelength Observations of BL Lacertae in 2000.

PULONE, LUIGI. See BECKER, WERNER, et al. *Chandra X-Ray Observatory* Observations of the Globular Cluster M28 and Its Millisecond Pulsar PSR 1821−24.

PULS, JOACHIM. Quantitative Spectral Analysis of Early B-Type Supergiants in the Sculptor Galaxy NGC 300. *Miguel Alejandro Urbaneja, Aremio Herrero, Fabio Bresolin, Rolf-Peter Kudritzki, Wolfgang Gieren, & Joachim Puls.* 584, L73 (2003)

PUN, C. S. J. See MICHAEL, ELI, et al. *Hubble Space Telescope* Observations of High-Velocity Lyα and Hα Emission from Supernova Remnant 1987A: The Structure and Development of the Reverse Shock.

PUNSLY, BRIAN. Force-free Waves and Black Hole Magnetospheric Causality. *Brian Punsly.* 583, 842 (2003)

PURSIMO, T. See HJORTH, J., et al. Very High Column Density and Small Reddening toward GRB 020124 at $z = 3.20$.

PURTON, C. R. Neutral Hydrogen Associated with NGC 7129. *H. E. Matthews, C. R. Purton, R. S. Roger, P. E. Dewdney, & G. F. Mitchell.* 592, 176 (2003)

PURVES, NORMAN. See COLLEY, WESLEY N., et al. Around-the-Clock Observations of the Q9057+561A,B Gravitationally Lensed Quasar. II. Results for the Second Observing Season.

PUTMAN, M. E. Hα Emission from High-Velocity Clouds and Their Distances. *M. E. Putman, J. Bland-Hawthorn, S. Veilleux, B. K. Gibson, K. C. Freeman, & P. R. Maloney.* 597, 948 (2003)

PUTMAN, MARY E. The Magellanic Stream, High-Velocity Clouds, and the Sculptor Group. *Mary E. Putman, Lister Staveley-Smith, Kenneth C. Freeman, Brad K. Gibson, & David G. Barnes.* 586, 170 (2003)

Are Compact High-Velocity Clouds Extragalactic Objects? *Philip R. Maloney & Mary E. Putman.* 589, 270 (2003)

PUZIA, THOMAS H. Evidence for an Intermediate-Age, Metal-rich Population of Globular Clusters in NGC 4365. *Søren S. Larsen, Jean P. Brodie, Michael A. Beasley, Duncan A. Forbes, Markus Kissler-Patig, Harald Kuntschner, & Thomas H. Puzia.* 585, 767 (2003)

Some Constraints on the Effects of Age and Metallicity on the Low-Mass X-Ray Binary Formation Rate. *Arunav Kundu, Thomas J. Maccarone, Stephen E. Zepf, & Thomas H. Puzia.* 589, L81 (2003)

PUZZARINI, C. Precise Laboratory Frequencies of the $J = 1–0$ and $J = 2–1$ Rotational Transitions of $C^{18}O$. *G. Cazzoli, C. Puzzarini, & A. V. Lapinov.* 592, L95 (2003)

PYO, T.-S. See GOTO, MIWA, et al. Carbon Isotope Ratio in $^{12}CO/^{13}CO$ toward Local Molecular Clouds with Near-Infrared High-Resolution Spectroscopy of Vibrational Transition Bands.

PYO, TAE-SOO. Adaptive Optics Spectroscopy of the [Fe II] Outflow from DG Tauri. *Tae-Soo Pyo, Naoto Kobayashi, Masahiko Hayashi, Hiroshi Terada, Miwa Goto, Hideki Takami, Naruhisa Takato, Wolfgang Gaessler, Tomonori Usuda, Takuya Yamashita, Alan T. Tokunaga, Yutaka Hayano, Yukiko Kamata, Masanori Iye, & Yosuke Minowa.* 590, 340 (2003)

QI, CHUNHUA. Continuum and CO/HCO$^+$ Emission from the Disk around the T Tauri Star LkCa 15. *Chunhua Qi, Jacqueline E. Kessler, David W. Koerner, Anneila I. Sargent, & Geoffrey A. Blake.* 597, 986 (2003)

QIAN, Y. An Active Galactic Nucleus Sample with High X-Ray–to–Optical Flux Ratio from RASS. II. Optical Emission Line Properties of Seyfert 1 Type Active Galactic Nuclei. *D. W. Xu, Stefanie Komossa, J. Y. Wei, Y. Qian, & X. Z. Zheng.* 590, 73 (2003)

QIAN, Y.-Z. Abundance Analysis of HE 2146−1247, a Star with Extremely Enhanced Neutron Capture Elements. *Judith G. Cohen, Norbert Christlieb, Y.-Z. Qian, & G. J. Wasserburg.* 588, 1082 (2003)

Stellar Sources for Heavy *r*-Process Nuclei. *Y.-Z. Qian & G. J. Wasserburg.* 588, 1099 (2003)

QIAN, YONG-ZHONG. Hierarchical Structure Formation and Chemical Evolution of Damped Lyα Systems. *Yong-Zhong Qian & G. J. Wasserburg.* 596, L9 (2003)

QIN, BO. Intrinsic Degeneracy of Gravitational Lens Time Delays: The Case for a Simple Quadruple System in Λ Cold Dark Matter Cosmology. *HongSheng Zhao & Bo Qin.* 582, 2 (2003)

QIN, G. Nonlinear Collisionless Perpendicular Diffusion of Charged Particles. *W. H. Matthaeus, G. Qin, J. W. Bieber, & G. P. Zank.* 590, L53 (2003)

QIU, H. M. Chemical Abundances of Old Metal-rich Stars in the Solar Neighborhood. *Y. Q. Chen, G. Zhao, P. E. Nissen, G. S. Bai, & H. M. Qiu.* 591, 925 (2003)

QIU, JIONG. Flare-Related Magnetic Anomaly with a Sign Reversal. *Jiong Qiu & Dale E. Gary.* 599, 615 (2003)

QU, J. L. Evolution of Hard X-Ray Spectra along the Branches in Circinus X-1. *G. Q. Ding, J. L. Qu, & T. P. Li.* 596, L219 (2003)

QU, JIN LU. Low-Frequency Coherence Break in the Soft X-Ray State of GRS 1915+105. *Jian Feng Ji, Shuang Nan Zhang, Jin Lu Qu, & Ti Pei Li.* 584, L23 (2003)

QUADRI, RYAN. Lensing Effects of Misaligned Disks in Dark Matter Halos. *Ryan Quadri, Ole Möller, & Priyamvada Natarajan.* 597, 659 (2003)

QUATAERT, ELIOT. Transition from Collisionless to Collisional Magnetorotational Instability. *Prateek Sharma, Gregory W. Hammett, & Eliot Quataert.* 596, 1121 (2003)

Nonthermal Electrons in Radiatively Inefficient Accretion Flow Models of Sagittarius A*. *Feng Yuan, Eliot Quataert, & Ramesh Narayan.* 598, 301 (2003)

QUERCELLINI, CLAUDIA. Cosmic Microwave Background as a Gravity Probe. *Luca Amendola, Claudia Quercellini, Domenico Tocchini-Valentini, & Alessandro Pasqui.* 583, L53 (2003)

QUI, JIONG. Study of Ribbon Separation of a Flare Associated with a Quiescent Filament Eruption. *Haimin Wang, Jiong Qui, Ju Jing, & Hongqi Zhang.* 593, 564 (2003)

QUIGLEY, M. F. Constraints from *Infrared Space Observatory* Data on the Velocity Law and Clumpiness of WR 136. *R. Ignace, M. F. Quigley, & J. P. Cassinelli.* 596, 538 (2003)

QUILLEN, ALICE C. Sagittarius A* Companion S0-2: A Probe of Very High Mass Star Formation. *Andrew Gould & Alice C. Quillen.* 592, 935 (2003)

Infrared Observations of Galaxies in the Local Universe. II. 391 Calibrated Images with Photometric and Structural Measurements. *Albert D. Grauer, Marcia J. Rieke, & Alice C. Quillen.* 149, 327 (2003)

QUIMBY, R. See SCHAEFER, BRADLEY E., et al. GRB 021004: A Massive Progenitor Star Surrounded by Shells.

See SMITH, D. A., et al. ROTSE-III Observations of the Early Afterglow from GRB 030329.

See KNOP, R. A., et al. New Constraints on Ω_M, Ω_Λ, and w from an Independent Set of 11 High-Redshift Supernovae Observed with the *Hubble Space Telescope*.

QUINN, J. See HOLDER, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.

See HALL, T. A., et al. Search for TeV Emissions from Pulsars in Binary Systems.

See BERSIER, D., et al. The Strongly Polarized Afterglow of GRB 020405.

See BERSIER, D., et al. The Unusual Optical Afterglow of the Gamma-Ray Burst GRB 021004: Color Changes and Short-Timescale Variability.

See AKERLOF, C. W., et al. A Search for Correlations of TeV Gamma Rays with Ultra–High-Energy Cosmic Rays.

See DE LA CALLE PÉREZ, I., et al. Search for High-Energy Gamma Rays from an X-Ray–Selected Blazar Sample.

QUINN, P. See ALCOCK, C., et al. The MACHO Project Large Magellanic Cloud Variable Star Inventory. XI. Frequency Analysis of the Fundamental Mode RR Lyrae Stars.

QUINN, THOMAS. The Structural Evolution of Substructure. *Eric Hayashi, Julio F. Navarro, James E. Taylor, Joachim Stadel, & Thomas Quinn.* 584, 541 (2003)

See BLANTON, MICHAEL R., et al. The Galaxy Luminosity Function and Luminosity Density at Redshift $z = 0.1$.

QUINN, TOM. See NAPOLITANO, NICOLA R., et al. Intracluster Stellar Population Properties from *N*-Body Cosmological Simulations. I. Constraints at $z = 0$.

QUINTANA, H. See VIKHLININ, A., et al. Cosmological Constraints from the Evolution of the Cluster Baryon Mass Function at $z \sim 0.5$.

See MULLIS, C. R., et al. The 160 Square Degree *ROSAT* Survey: The Revised Catalog of 201 Clusters with Spectroscopic Redshifts.

RAAB, WALFRIED. Realizing Integral Field Spectroscopy in the Far-Infrared. *Leslie W. Looney, Walfried Raab, Albrecht Poglitsch, & Norbert Geis.* 597, 628 (2003)

RADEMACHER, MATT. See CLOSE, LAIRD M., et al. High-Resolution Images of Orbital Motion in the Trapezium Cluster: First Scientific Results from the Multiple Mirror Telescope Deformable Secondary Mirror Adaptive Optics System.

RADOMSKI, J. T. A Search for Mid-Infrared Emission from Hot Molecular Core Candidates. *J. M. De Buizer, J. T. Radomski, C. M. Telesco, & R. K. Piña.* 598, 1127 (2003)

RADOMSKI, JAMES. Mid-Infrared Imaging of the Protostellar Binary L1448N IRS 3(A,B). *David R. Ciardi, Charles M. Telesco, Jonathan P. Williams, R. Scott Fisher, Chris Packham, Robert Piña, & James Radomski.* 585, 392 (2003)

RADOMSKI, JAMES T. Resolved Mid-Infrared Emission in the Narrow-Line Region of NGC 4151. *James T. Radomski, Robert K. Piña, Christopher Packham, Charles M. Telesco, James M. De Buizer, R. Scott Fisher, & A. Robinson.* 587, 117 (2003)

RADOVICH, M. Analysis of the Interaction Effects in the Southern Galaxy Pair Tol 1238−364 and ESO 381-G009. *S. Temporin, S. Ciroi, P. Rafanelli, M. Radovich, J. Vennik, G. M. Richter, & K. Birkle.* 148, 353 (2003)

RAFANELLI, P. Analysis of the Interaction Effects in the Southern Galaxy Pair Tol 1238−364 and ESO 381-G009. *S. Temporin, S. Ciroi, P. Rafanelli, M. Radovich, J. Vennik, G. M. Richter, & K. Birkle.* 148, 353 (2003)

RAFFAUF, E. See TOURNEAR, D., et al. X-Ray Bursts in Neutron Star and Black Hole Binaries from Unconvetional Stellar Aspect Experiment and *Rossi X-Ray Timing Explorer* Data: Detections and Upper Limits.

RAFFELT, GEORG G. Electron Neutrino Pair Annihilation: A New Source for Muon and Tau Neutrinos in Supernovae. *Robert Buras, Hans-Thomas Janka, Mathias Th. Keil, Georg G. Raffelt, & Markus Rampp.* 587, 320 (2003)

Monte Carlo Study of Supernova Neutrino Spectra Formation. *Mathias Th. Keil, Georg G. Raffelt, & Hans-Thomas Janka.* 590, 971 (2003)

RAGA, ALEJANDRO C. Very Large Array Observations of Proper Motions in L1551 IRS 5. *Luis F. Rodríguez, Salvador Curiel, Jorge Cantó, Laurent Loinard, Alejandro C. Raga, & Jose M. Torrelles.* 583, 330 (2003)

A Supernova Remnant Collision with a Stellar Wind. *Pablo F. Velázquez, Gloria Koenigsberger, & Alejandro C. Raga.* 584, 284 (2003)

RAGA, ALEX. Blowout from IC 1396N: The Emergence of Herbig-Haro Flows from a Cloud Core. *Bo Reipurth, Tina Armond, Alex Raga, & John Bally.* 593, L47 (2003)

RAGAZZONI, ROBERTO. The Lack of Observational Evidence for the Quantum Structure of Spacetime at Planck Scales. *Roberto Ragazzoni, Massimo Turatto, & Wolfgang Gaessler.* 587, L1 (2003)

RAGOT, B. R. Interactions of Dust Grains with Coronal Mass Ejections and Solar Cycle Variations of the F-Coronal Brightness. *B. R. Ragot & S. W. Kahler.* 594, 1049 (2003)

RAIG, ANDREU. On the Origin of the Inner Structure of Halos. *Alberto Manrique, Andreu Raig, Eduard Salvador-Solé, Teresa Sanchis, & José María Solanes.* 593, 26 (2003)

RAIMONDO, G. The Distance to the Large Magellanic Cloud Cluster NGC 1866 and the Surrounding Field. *M. Salaris, S. Percival, E. Brocato, G. Raimondo, & A. R. Walker.* 588, 801 (2003)

RAINES, S. NICHOLAS. Gemini-South + FLAMINGOS Demonstration Science: Near-IR Spectroscopy of the $z = 5.77$ Quasar SDSS J083643.85+005453.3. *Daniel Stern, Pat Hall, L. Felipe Barrientos, Andrew J. Bunker, Richard Elston, M. J. Ledlow, S. Nicholas Raines, & Jon Willis.* 596, L39 (2003)

RAITERI, C. M. See BOTTCHER, M., et al. Coordinated Multiwavelength Observations of BL Lacertae in 2000.

RAJAGURU, S. P. Acoustic Wave Propagation in the Sun: Implications for Wave Field and Time-Distance Helioseismology. *C. H. Tong, M. J. Thompson, M. R. Warner, S. P. Rajaguru, & C. C. Pain.* 582, L121 (2003)

RAKOWSKI, CARA E. Iron-rich Ejecta in the Supernova Remnant DEM L71. *John P. Hughes, Parviz Ghavamian, Cara E. Rakowski, & Patrick O. Slane.* 582, L95 (2003)

The Physics of Supernova Blast Waves. I. Kinematics of DEM L71 in the Large Magellanic Cloud. *Parviz Ghavamian, Cara E. Rakowski, John P. Hughes, & T. B. Williams.* 590, 833 (2003)

The Physics of Supernova Remnant Blast Waves. II. Electron-Ion Equilibration in DEM L71 in the Large Magellanic Cloud. *Cara E. Rakowski, Parviz Ghavamian, & John P. Hughes.* 590, 846 (2003)

RAM, R. S. Line Intensities and Molecular Opacities of the FeH $F\,^4\Delta_i$–$X\,^4\Delta_i$ Transition. *M. Dulick, C. W. Bauschlicher, Jr., Adam Burrows, C. M. Sharp, R. S. Ram, & Peter Bernath.* 594, 651 (2003)

RAMACHANDRAN, R. Toward an Empirical Theory of Pulsar Emission. VIII. Subbeam Circulation and the Polarization-Modal Structure of Conal Beams. *Joanna M. Rankin & R. Ramachandran.* 590, 411 (2003)

RAMBAUX, NICOLAS. Conditions of Dynamical Stability for the HD 160691 Planetary System. *Eric Bois, Ludmila Kiseleva-Eggleton, Nicolas Rambaux, & Elke Pilat-Lohinger.* 598, 1312 (2003)

RAMESH, R. Metric Radio Observations of the Evolution of a "Halo" Coronal Mass Ejection Close to the Sun. *R. Ramesh, C. Kathiravan, & Ch. V. Sastry.* 591, L163 (2003)

RAMÍREZ, SOLANGE V. Really Cool Stars and the Star Formation History at the Galactic Center. *R. D. Blum, Solange V. Ramírez, K. Sellgren, & K. Olsen.* 597, 323 (2003)

RAMMACHER, W. Time-dependent Ionization in Dynamic Solar and Stellar Atmospheres. I. Methods. *W. Rammacher & P. Ulmschneider.* 589, 988 (2003)

Acoustic Heating Models for the Basal Flux Star τ Ceti Including Time-dependent Ionization: Results for Ca II and Mg II Emission. *W. Rammacher & M. Cuntz.* 594, L51 (2003)

RAMPP, MARKUS. Electron Neutrino Pair Annihilation: A New Source for Muon and Tau Neutrinos in Supernovae. *Robert Buras, Hans-Thomas Janka, Mathias Th. Keil, Georg G. Raffelt, & Markus Rampp.* 587, 320 (2003)

RAMSAY, GAVIN. X-Ray Spectroscopy of η Carinae with *XMM-Newton*. *Maurice A. Leutenegger, Steven M. Kahn, & Gavin Ramsay.* 585, 1015 (2003)

RANDALL, S. K. A Driving Mechanism for the Newly Discovered Long-Period Pulsating Subdwarf B Stars. *G. Fontaine, P. Brassard, S. Charpinet, E. M. Green, P. Chayer, M. Billères, & S. K. Randall.* 597, 518 (2003)

RANDALL, SCOTT W. Low-Mass X-Ray Binaries and Globular Clusters in Early-Type Galaxies. *Craig L. Sarazin, Arunav Kundu, Jimmy A. Irwin, Gregory R. Sivakoff, Elizabeth L. Blanton, & Scott W. Randall.* 595, 743 (2003)

RANKIN, JOANNA M. Toward an Empirical Theory of Pulsar Emission. VIII. Subbeam Circulation and the Polarization-Modal Structure of Conal Beams. *Joanna M. Rankin & R. Ramachandran.* 590, 411 (2003)

RANSOM, R. R. Very Long Baseline Interferometry Imaging of the RS Canum Venaticorum Binary Star System HR 5110. *R. R. Ransom, N. Bartel, M. F. Bietenholz, M. I. Ratner, D. E. Lebach, I. I. Shapiro, & J.-F. Lestrade.* 587, 390 (2003)

RANSOM, SCOTT M. A New Search Technique for Short Orbital Period Binary Pulsars. *Scott M. Ransom, James M. Cordes, & Stephen S. Eikenberry.* 589, 911 (2003)

RAO, A. R. Correlated Radio:X-Ray Emission in the Hard States of Galactic Microquasars. *M. Choudhury, A. R. Rao, S. V. Vadawale, & A. K. Jain.* 593, 452 (2003)

On the Origin of the Various Types of Radio Emission in GRS 1915+105. *S. V. Vadawale, A. R. Rao, S. Naik, J. S. Yadav, C. H. Ishwara-Chandra, A. Pramesh Rao, & G. G. Pooley.* 597, 1023 (2003)

RAO, R. Magnetic Field Morphology of Orion IRc2 from 86 GHz SiO Maser Polarization Images. *R. L. Plambeck, M. C. H. Wright, & R. Rao.* 594, 911 (2003)

RAO, SANDHYA M. *Chandra* ACIS-S Observations of Three Quasars with Low-Redshift Damped Lyα Absorption: Constraints on the Cosmic Neutral Gas-Phase Metallicity at Redshift $z \approx 0.4$. *David A. Turnshek, Sandhya M. Rao, Andrew F. Ptak, Richard E. Griffiths, & Eric M. Monier.* 590, 730 (2003)

Low-Redshift Damped Lyα Galaxies toward the Quasars B2 0827+243, PKS 0952+179, PKS 1127−145, and PKS 1629+120. *Sandhya M. Rao, Daniel B. Nestor, David A. Turnshek, Wendy M. Lane, Eric M. Monier, & Jacqueline Bergeron.* 595, 94 (2003)

Damped Lyα Gas Metallicities at Redshifts $z = 0.9$–2.0 from Sloan Digital Sky Survey Spectra. *Daniel B. Nestor, Sandhya M. Rao, David A. Turnshek, & Daniel Vanden Berk.* 595, L5 (2003)

RAPPAPORT, SAUL. The Galactic Population of Low- and Intermediate-Mass X-Ray Binaries. *Eric Pfahl, Saul Rappaport, & Philipp Podsiadlowski.* 597, 1036 (2003)

Theoretical Considerations on the Properties of Accreting Millisecond Pulsars. *Lorne A. Nelson & Saul Rappaport.* 598, 431 (2003)

RASCON, MARIO. See CLOSE, LAIRD M., et al. High-Resolution Images of Orbital Motion in the Trapezium Cluster: First Scientific Results from the Multiple Mirror Telescope Deformable Secondary Mirror Adaptive Optics System.

RASHBA, T. I. Large Mixing Angle Oscillations as a Probe of the Deep Solar Interior. *C. Burgess, N. S. Dzhalilov, M. Maltoni, T. I. Rashba, V. B. Semikoz, M. A. Tórtola, & J. W. F. Valle.* 588, L65 (2003)

RASIO, F. A. The Role of Helium Stars in the Formation of Double Neutron Stars. *N. Ivanova, K. Belczynski, V. Kalogera, F. A. Rasio, & R. E. Taam.* 592, 475 (2003)

Monte Carlo Simulations of Globular Cluster Evolution. III. Primordial Binary Interactions. *J. M. Fregeau, M. A. Gürkan, K. J. Joshi, & F. A. Rasio.* 593, 772 (2003)

RASIO, FREDERIC A. Helium-Core White Dwarfs in Globular Clusters. *Brad M. S. Hansen, Vassiliki Kalogera, & Frederic A. Rasio.* 586, 1364 (2003)

RASMUSSEN, ANDREW. Slow Temperature Equilibration behind the Shock Front of SN 1006. *Jacco Vink, J. Martin Laming, Ming Feng Gu, Andrew Rasmussen, & Jelle S. Kaastra.* 587, L31 (2003)

RASMUSSEN, ANDREW P. A Long Look at NGC 3783 with the *XMM-Newton* Reflection Grating Spectrometer. *Ehud Behar, Andrew P. Rasmussen, Alexander J. Blustin, Masao Sako, Steven M. Kahn, Jelle S. Kaastra, Graziella Branduardi-Raymont, & Katrien C. Steenbrugge.* 598, 232 (2003)

RAST, MARK PETER. The Scales of Granulation, Mesogranulation, and Supergranulation. *Mark Peter Rast.* 597, 1200 (2003)

RATNATUNGA, KAVAN U. Cosmic Gravitational Shear from the *Hubble Space Telescope* Medium Deep Survey. *Stefano Casertano, Kavan U. Ratnatunga, & Richard E. Griffiths.* 598, L71 (2003)

RATNER, M. I. Very Long Baseline Interferometry Imaging of the RS Canum Venaticorum Binary Star System HR 5110. *R. R. Ransom, N. Bartel, M. F. Bietenholz, M. I. Ratner, D. E. Lebach, I. I. Shapiro, & J.-F. Lestrade.* 587, 390 (2003)

RATRA, B. Cosmic Microwave Background Anisotropy Measurement from Python V. *K. Coble, S. Dodelson, M. Dragovan, K. Ganga, L. Knox, J. Kovac, B. Ratra, & T. Souradeep.* 584, 585 (2003)

RATRA, BHARAT. Cosmological Constraints from Compact Radio Sources Angular Size versus Redshift Data. *Gang Chen & Bharat Ratra.* 582, 586 (2003)

Radio Galaxy Redshift–Angular Size Data Constraints on Dark Energy. *Silviu Podariu, Ruth A. Daly, Matthew P. Mory, & Bharat Ratra.* 584, 577 (2003)

Galactic Foreground Constraints from the Python V Cosmic Microwave Background Anisotropy Data. *Pia Mukherjee, Kim Coble, Mark Dragovan, Ken Ganga, John Kovac, Bharat Ratra, & Tarun Souradeep.* 592, 692 (2003)

COBE DMR–normalized Dark Energy Cosmogony. *Pia Mukherjee, A. J. Banday, Alain Riazuelo, Krzysztof M. Górski, & Bharat Ratra.* 598, 767 (2003)

RATTENBURY, N. J. See SUMI, T., et al. Microlensing Optical Depth toward the Galactic Bulge from Microlensing Observations during 2000 with Difference Image Analysis.

RAU, A. The 590 Day Long-Term Periodicity of the Microquasar GRS 1915+105. *A. Rau, J. Greiner, & M. L. McCollough.* 590, L37 (2003)

RAUCH, M. See FOSBURY, R. A. E., et al. Massive Star Formation in a Gravitationally Lensed H II Galaxy at $z = 3.357$.

RAUCH, MICHAEL. Metallicity of the Intergalactic Medium Using Pixel Statistics. II. The Distribution of Metals as Traced by C IV. *Joop Schaye, Anthony Aguirre, Tae-Sun Kim, Tom Theuns, Michael Rauch, & Wallace L. W. Sargent.* 596, 768 (2003)

A Measurement of the Temperature-Density Relation in the Intergalactic Medium Using a New Lyα Absorption Line Fitting Method: Erratum (ApJ, 562, 52 [2001]). *Patrick McDonald, Jordi Miralda-Escudé, Michael Rauch, Wallace L. W. Sargent, Tom A. Barlow, & Renyue Cen.* 598, 712 (2003) (Orig. paper in 562, 52 (2001))

RAULIN, FRANÇOIS. Oxirane: An Exotic Oxygenated Organic Compound in Titan? *Patrice Coll, Jean-Michel Bernard, Rafael Navarro-González, & François Raulin.* 598, 700 (2003)

RAULIN, JEAN-PIERRE. Properties of Fast Submillimeter Time Structures during a Large Solar Flare. *Jean-Pierre Raulin, Pierre Kaufmann, Carlos G. Giménez de Castro, Alessandra A. Pacini, Vladimir S. Makhmutov, Hugo Levato, & Marta Rovira.* 592, 580 (2003)

RAUSCHER, T. See REIFARTH, R., et al. Stellar Neutron Capture on Promethium: Implications for the s-Process Neutron Density.

See SONNABEND, K., et al. The s-Process Branching at ^{185}W.

Nuclear Partition Functions at Temperatures Exceeding 10^{10} K. *T. Rauscher.* 147, 403 (2003)

RAUX, J. See KNOP, R. A., et al. New Constraints on Ω_M, Ω_Λ, and w from an Independent Set of 11 High-Redshift Supernovae Observed with the *Hubble Space Telescope*.

RAVASIO, M. *XMM-Newton* Observation of the 5.25 Millisecond Transient Millisecond Pulsar XTE J1807−294 in Outburst. *S. Campana, M. Ravasio, G. L. Israel, V. Mangano, & T. Belloni.* 594, L39 (2003)

See BÖTTCHER, M., et al. Coordinated Multiwavelength Observations of BL Lacertae in 2000.

RAVE, HEATHER A. Sloan Digital Sky Survey Catalog of Stars in the Draco Dwarf Spheroidal Galaxy. *Heather A. Rave, Chongshan Zhao, Heidi Jo Newberg, Brian Yanny, Donald P. Schneider, J. Brinkman, & Don Q. Lamb.* 145, 245 (2003)

RAWLINGS, JONATHAN M. C. Tracing the Mass during Low-Mass Star Formation. IV. Observations and Modeling of the Submillimeter Continuum Emission from Class I Protostars. *Chadwick H. Young, Yancy L. Shirley, Neal J. Evans II, & Jonathan M. C. Rawlings.* 145, 111 (2003)

RAWLINGS, STEVE. The Submillimeter Properties of Broad Absorption Line Quasars. *Chris J. Willot, Steve Rawlings, & Jennifer A. Grimes.* 598, 909 (2003)

RAWLINS, K. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

RAY, P. S. See SAZ PARKINSON, P. M., et al. Long-Term X-Ray Variability of Circinus X-1.

See TOURNEAR, D., et al. X-Ray Bursts in Neutron Star and Black Hole Binaries from Unconvetional Stellar Aspect Experiment and *Rossi X-Ray Timing Explorer* Data: Detections and Upper Limits.

RAY, SUBHARTHI. Origin and Interpretation of Kilohertz Quasi-periodic Oscillations from Strange Stars in an X-Ray Binary Systems: Theoretical Hydrodynamical Description. *Banibrata Mukhopadhyay, Subharthi Ray, Jishnu Dey, & Mira Dey.* 584, L83 (2003)

RAYMOND, J. C. Elemental Abundances for the 1996 Streamer Belt. *M. Uzzo, Y.-K. Ko, J. C. Raymond, P. Wurz, & F. M. Ipavich.* 585, 1062 (2003)

Ultraviolet Spectroscopy of Narrow Coronal Mass Ejections. *D. Dobrzycka, J. C. Raymond, D. A. Biesecker, J. Li, & A. Ciaravella.* 588, 586 (2003)

Far-Ultraviolet Spectra of Fast Coronal Mass Ejections Associated with X-Class Flares. *J. C. Raymond, A. Ciaravella, D. Dobrzycka, L. Strachan, Y.-K. Ko, & M. Uzzo.* 597, 1106 (2003)

Physical Parameters of the 2000 February 11 Coronal Mass Ejection: Ultraviolet Spectra versus White-Light Images. *A. Ciaravella, J. C. Raymond, A. van Ballegooijen, L. Strachan, A. Vourlidas, J. Li, J. Chen, & A. Panasyuk.* 597, 1118 (2003)

RAYMOND, JOHN. The Spatial Distribution of Fluorescent H_2 Emission near T Tauri. *José Saucedo, Nuria Calvet, Lee Hartmann, & John Raymond.* 591, 275 (2003)

The High-Excitation Planetary Nebula NGC 246: Optical and Near-Ultraviolet Observations and Two-Dimensional Numerical Models. *Andrew Szentgyorgyi, John Raymond, José Franco, Eva Villaver, & Luis López-Martín.* 594, 874 (2003)

Chandra Observations of the Dwarf Nova WX Hydri in Quiescence. *Rosalba Perna, Jonathan McDowell, Kristen Menou, John Raymond, & Mikhail V. Medvedev.* 598, 545 (2003)

RAYMOND, JOHN C. Far-Ultraviolet Spectra of a Nonradiative Shock Wave in the Cygnus Loop. *John C. Raymond, Parviz Ghavamian, Ravi Sankrit, William P. Blair, & Salvador Curiel.* 584, 770 (2003)

Chandra CCD Imagery of the Northeast and Northwest Limbs of SN 1006. *Knox S. Long, Stephen P. Reynolds, John C. Raymond, P. Frank Winkler, Kristy K. Dyer, & Robert Petre.* 586, 1162 (2003)

Optical and Far-Ultraviolet Spectroscopy of Knot D in the Vela Supernova Remnant. *Ravi Sankrit, William P. Blair, & John C. Raymond.* 589, 242 (2003)

Dynamical and Physical Properties of a Post–Coronal Mass Ejection Current Sheet. *Yuan-Kuen Ko, John C. Raymond, Jun Lin, Gareth Lawrence, Jing Li, & Andrzej Fludra.* 594, 1068 (2003)

The Effect of Proton Temperature Anisotropy on the Solar Minimum Corona and Wind. *Alberto M. Vásquez, Adrian A. van Ballegooijen, & John C. Raymond.* 598, 1361 (2003)

RAYMOND, SEAN. See SZKODY, PAULA, et al. Two Rare Magnetic Cataclysmic Variables with Extreme Cyclotron Features Identified in the Sloan Digital Sky Survey.

RAYNER, D. P. See BIGNALL, H. E., et al. Rapid Variability and Annual Cycles in the Characteristic Timescale of the Scintillating Source PKS 1257−326.

RAYNER, JOHN T. FeH Absorption in the Near-Infared Spectra of Late M and L Dwarfs. *Michael Cushing, John T. Rayner, Sumner P. Davis, & William D. Vacca.* 582, 1066 (2003)

REA, NANDA. Evidence of a Cyclotron Feature in the Spectrum of the Anomalous X-Ray Pulsar 1RXS J170849−400910. *Nanda Rea, Gian Luca Israel, Luigi Stella, Tim Oosterbroek, Sandro Mereghetti, Lorella Angelini, Sergio Campana, & Stefano Covino.* 586, L65 (2003)

REACH, WILLIAM T. Near-Infrared Synchrotron Emission from Cassiopeia A. *Jeonghee Rho, Stephen P. Reynolds, William T. Reach, Tom H. Jarrett, Glenn E. Allen, & John C. Wilson.* 592, 299 (2003)

READHEAD, A. C. S. See MASON, B. S., et al. The Anisotropy of the Microwave Background to $l = 3500$: Deep Field Observatons with the Cosmic Background Imager.

See PEARSON, T. J., et al. The Anisotropy of the Microwave Background to $l = 3500$: Mosaic Observations with the Cosmic Background Imager.

See MYERS, S. T., et al. A Fast Gridded Method for the Estimation of the Power Spectrum of the Cosmic Microwave Background from Interferometer Data with Application to the Cosmic Background Imager.

See SIEVERS, J. L., et al. Cosmological Parameters from Cosmic Background Imager Observations and Comparisons with BOOMERANG, DASI, and MAXIMA.

REAMES, D. V. Solar Energetic Particle Production by Coronal Mass Ejection–driven Shocks in Solar Fast-Wind Regions. *S. W. Kahler & D. V. Reames.* 584, 1063 (2003)

WIND Observations of Anomalous Cosmic Rays from Solar Minimum to Maximum. *D. V. Reames & F. B. McDonald.* 586, L99 (2003)

Modeling Shock-accelerated Solar Energetic Particles Coupled to Interplanetary Alfvén Waves. *C. K. Ng, D. V. Reames, & A. J. Tylka.* 591, 461 (2003)

REBILLOT, P. See HOLDER, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.

See DE LA CALLE PÉREZ, I., et al. Search for High-Energy Gamma Rays from an X-Ray–Selected Blazar Sample.

REDDY, BACHAM E. An Abundance Analysis of the New Carbon-Rich Proto-Planetary Nebula IRAS 06530−0213. *Bruce J. Hrivnak & Bacham E. Reddy.* 590, 1049 (2003)

REDER, L. See COLAVITA, M., et al. Observations of DG Tauri with the Keck Interferometer.

REDFIELD, SETH. Space Telescope Imaging Spectrograph Survey of Far-Ultraviolet Coronal Forbidden Lines in Late-Type Stars. *Thomas R. Ayres, Alexander Brown, Graham M. Harper, Rachel A. Osten, Jeffrey L. Linsky, Brian E. Wood, & Seth Redfield.* 583, 963 (2003)

A *Far Ultraviolet Spectroscopic Explorer* Survey of Coronal Forbidden Lines in Late-Type Stars. *Seth Redfield, Thomas R. Ayres, Jeffrey L. Linsky, Thomas B. Ake, A. K. Dupree, Richard D. Robinson, & Peter R. Young.* 585, 993 (2003)

REDMAN, R. O. Interactions between a Bright Young Stellar Object and the *Micourse Space Experiment* Infrared-Dark Cloud G79.3+0.3: An Early Stage of Triggered Star Formation? *R. O. Redman, P. A. Feldman, F. Wyrowski, S. Côté, S. J. Carey, & M. P. Egan.* 586, 1127 (2003)

The G11.11−0.12 Infrared-dark Cloud: Anomalous Dust and a Nonmagnetic Isothermal Model. *Doug Johnstone, Jason D. Fiege, R. O. Redman, P. A. Feldman, & Sean J. Carey.* 588, L37 (2003)

REED, M. D. See GREEN, E. M., et al. Discovery of a New Class of Pulsating Stars: Gravity-Mode Pulsators among Subdwarf B Stars.

See MUKADEM, ANJUM S., et al. Constraining the Evolution of ZZ Ceti.

REES, M. J. Gamma-Ray Bursts as X-Ray Depth Gauges of the Universe. *P. Mészáros & M. J. Rees.* 591, L91 (2003)

Iron K Lines from Gamma-Ray Bursts. *T. R. Kallman, P. Mészáros, & M. J. Rees.* 593, 946 (2003)

REESE, ERIK D. See LAROQUE, SAMUEL J., et al. Sunyaev-Zeldovich Effect Imaging of MACS Galaxy Clusters at $z > 0.5$.

REEVES, J. See MARKOWITZ, A., et al. X-Ray Fluctuation Power Spectral Densities of Seyfert 1 Galaxies.

REEVES, J. N. A Massive X-Ray Outflow from the Quasar PDS 456. *J. N. Reeves, P. T. O'Brien, & M. J. Ward.* 593, L65 (2003)

Delayed Soft X-Ray Emission Lines in the Afterglow of GRB 030227. *D. Watson, J. N. Reeves, J. Hjorth, P. Jakobsson, & K. Pedersen.* 595, L29 (2003)

REGAN, MICHAEL W. Central Mass Concentration and Bar Dissolution in Nearby Spiral Galaxies. *Mousumi Das, Peter J. Teuben, Stuart N. Vogel, Michael W. Regan, Kartik Sheth, Andrew I. Harris, & William H. Jefferys.* 582, 190 (2003)

The Formation of Nuclear Rings in Barred Spiral Galaxies. *Michael W. Regan & Peter Teuben.* 582, 723 (2003)

The BIMA Survey of Nearby Galaxies (BIMA SONG). II. The CO Data. *Tamara T. Helfer, Michele D. Thornley, Michael W. Regan, Tony Wong, Kartik Sheth, Stuart N. Vogel, Leo Blitz, & Douglas C.-J. Bock.* 145, 259 (2003)

Circumnuclear Dust in Nearby Active and Inactive Galaxies. II. Bars, Nuclear Spirals, and the Fueling of Active Galactic Nuclei. *Paul Martini, Michael W. Regan, John S. Mulchaey, & Richard W. Pogge.* 589, 774 (2003)

Circumnuclear Dust in Nearby Active and Inactive Galaxies. I. Data. *Paul Martini, Michael W. Regan, John S. Mulchaey, & Richard W. Pogge.* 146, 353 (2003)

Barred Galaxies at $z > 0.7$: NICMOS Hubble Deep Field–North Observations. *Kartik Sheth, Michael W. Regan, Nicholas Z. Scoville, & Linda E. Strubbe.* 592, L13 (2003)

REGIMBAU, TANIA. Observational Evidence for a Correlation between Peak Luminosities and Beaming in Gamma-Ray Bursts. *Maurice H. P. M. van Putten & Tania Regimbau.* 593, L15 (2003)

REGINALD, NELSON L. Electron Temperature and Speed Measurements in the Low Solar Corona: Results From the 2001 June Eclipse. *Nelson L. Reginald, O. C. St. Cyr, Joseph M. Davila, & Jeffrey W. Brosius.* 599, 596 (2003)

REGNAULT, N. See KNOP, R. A., et al. New Constraints on Ω_M, Ω_Λ, and w from an Independent Set of 11 High-Redshift Supernovae Observed with the *Hubble Space Telescope*.

REICH, WOLFGANG. The Distance to the Supernova Remnant CTB 87 and the Radial Velocity of the Perseus Arm toward $l = 75°$. Derived from H I and CO Observations. *Roland Kothes, Wolfgang Reich, Tyler Foster, & Do-Young Byun.* 588, 852 (2003)

REICHARDT, C. See RUNYAN, M. C., et al. ACBAR: The Arcminute Cosmology Bolometer Array Receiver.

REICHART, D. See GALAMA, T. J., et al. *Hubble Space Telescope* and Ground-based Optical and Ultraviolet Observations of GRB 010222.

REICHART, D. E. See PRICE, P. A., et al. GRB 010921: Strong Limits on an Underlying Supernova from the *Hubble Space Telescope*.

See PRICE, P. A., et al. Discovery of GRB 020405 and Its Late Red Bump.

REICHMANN, EDWIN J. Evidence That a Deep Meridional Flow Sets the Sunspot Cycle Period. *David H. Hathaway, Dibyendu Nandy, Robert M. Wilson, & Edwin J. Reichmann.* 589, 665 (2003)

REID, I. N. See TEEGARDEN, B. J., et al. Discovery of a New Nearby Star.

Metal Lines in DA White Dwarfs. *B. Zuckerman, D. Koester, I. N. Reid, & M. Huensch.* 596, 477 (2003)

REID, I. NEILL. The Discovery of Two Nearby Carbon Dwarfs. *Patrick J. Lowrance, J. Davy Kirkpatrick, I. Neill Reid, Kelle L. Cruz, & James Liebert.* 584, L95 (2003)

Binarity in Brown Dwarfs: T Dwarf Binaries Discovered with the *Hubble Space Telescope* Wide Field Planetary Camera 2. *Adam J. Burgasser, J. Davy Kirkpatrick, I. Neill Reid, Michael E. Brown, Cherie L. Miskey, & John E. Gizis.* 586, 512 (2003)

See BURGASSER, ADAM J., et al. The First Substellar Subdwarf? Discovery of a Metal-poor L Dwarf with Halo Kinematics.

Luminosity Functions of Young Clusters: Modeling the Substellar Mass Regime. *Peter R. Allen, David E. Trilling, David W. Koerner, & I. Neill Reid.* 595, 1222 (2003)

REID, M. See SUMI, T., et al. Microlensing Optical Depth toward the Galactic Bulge from Microlensing Observations during 2000 with Difference Image Analysis.

REID, M. J. A High Spectral Resolution VLBI Study of the 12 GHz Methanol Masers in W3(OH): Their Submilliarcsecond Structure and Clues on Saturation. *L. Moscadelli, K. M. Menten, C. M. Walmsley, & M. J. Reid.* 583, 776 (2003)

The Position of Sagittarius A*. II. Accurate Positions and Proper Motions of Stellar SiO Masers near the Galactic Center. *M. J. Reid, K. M. Menten, R. Genzel, T. Ott, R. Schödel, & A. Eckart.* 587, 208 (2003)

Dual Cometary H II Regions in DR 21: Bow Shocks or Champagne Flows? *C. J. Cyganowski, M. J. Reid, V. L. Fish, & P. T. P. Ho.* 596, 344 (2003)

REID, MARK J. H I Absorption toward Ultracompact H II Regions: Distances and Galactic Structure. *Vincent L. Fish, Mark J. Reid, David J. Wilner, & Ed Churchwell.* 587, 701 (2003)

A Class of Interstellar OH Masers Associated with Protostellar Outflows. *Alice L. Argon, Mark J. Reid, & Karl M. Menten.* 593, 925 (2003)

Interstellar Hydroxyl Masers in the Galaxy. II. Zeeman Pairs and the Galactic Magnetic Field. *Vincent L. Fish, Mark J. Reid, Alice L. Argon, & Karl M. Menten.* 596, 328 (2003)

REIFARTH, R. Stellar Neutron Capture on Promethium: Implications for the *s*-Process Neutron Density. *R. Reifarth, C. Arlandini, M. Heil, F. Käppeler, P. V. Sedyshev, A. Mengoni, M. Herman, T. Rauscher, R. Gallino, & C. Travaglio.* 582, 1251 (2003)

REILLY, K. T. See SAZ PARKINSON, P. M., et al. Long-Term X-Ray Variability of Circinus X-1.

See TOURNEAR, D., et al. X-Ray Bursts in Neutron Star and Black Hole Binaries from Unconvetional Stellar Aspect Experiment and *Rossi X-Ray Timing Explorer* Data: Detections and Upper Limits.

REIMER, O. EGRET Upper Limits on the High-Energy Gamma-Ray Emission of Galaxy Clusters. *O. Reimer, M. Pohl, P. Sreekumar, & J. R. Mattox.* 588, 155 (2003)

REIMER, OLAF. On the Cross-Correlation between the Arrival Direction of Ultra–High-Energy Cosmic Rays, BL Lacertae Objects, and EGRET Detections: A New Way to Identify EGRET Sources? *Diego F. Torres, Stephen Reucroft, Olaf Reimer, & Luis A. Anchordoqui.* 595, L13 (2003)

See BUTT, YOUSAF M., et al. *Chandra*/Very Large Array Follow-up of TeV J2032+4131, the Only Unidentified TeV Gamma-Ray Source.

REINER, M. J. Constraints on Coronal Mass Ejection Dynamics from Simultaneous Radio and White-Light Observations. *M. J. Reiner, A. Vourlidas, O. C. St. Cyr, J. T. Burkepile, R. A. Howard, M. L. Kaiser, N. P. Prestage, & J.-L. Bougeret.* 590, 533 (2003)

REIPURTH, BO. X-Rays from the Vicinity of the Protostar L1551 IRS 5: Reflection or Fast Shocks? *John Bally, Eric Feigelson, & Bo Reipurth.* 584, 843 (2003)

Blowout from IC 1396N: The Emergence of Herbig-Haro Flows from a Cloud Core. *Bo Reipurth, Tina Armond, Alex Raga, & John Bally.* 593, L47 (2003)

A Cluster of Compact Radio Sources in NGC 2024 (Orion B). *Luis F. Rodríguez, Yolanda Gómez, & Bo Reipurth.* 598, 1100 (2003)

RELKE, HELENA. Experimental Study of Light Scattering by Large Dust Aggregates Consisting of Micron-Sized SiO_2 Monospheres. *Gerhard Wurm, Helena Relke, & Johann Dorschner.* 595, 891 (2003)

REMBOLD, SANDRO B. A Method for Simultaneous Determination of A_V and R and Applications. *Jorge R. Ducati, Daiana Ribeiro, & Sandro B. Rembold.* 588, 344 (2003)

REMIJAN, A. A Survey of Acetic Acid toward Hot Molecular Cores. *A. Remijan, L. E. Snyder, D. N. Friedel, S.-Y. Liu, & R. Y. Shah.* 590, 314 (2003)

REMILLARD, RONALD A. Multiwavelength Spectrum of the Black Hole XTE J1118+480 in Quiescence. *Jeffrey E. McClintock, Ramesh Narayan, Michael R. Garcia, Jerome A. Orosz, Ronald A. Remillard, & Stephen S. Murray.* 593, 435 (2003)

REMPEL, MATTHIAS. Storage and Equilibrium of Toroidal Magnetic Fields in the Solar Tacholine: A Comparison between MHD-Shallow-Water and Full MHD Approaches. *Matthias Rempel & Mausumi Dikpati.* 584, 524 (2003)

Stability Analysis of Tachocline Latitudinal Differential Rotation and Coexisting Toroidal Band Using a Shallow-Water Model. *Mausumi Dikpati, Peter A. Gilman, & Matthias Rempel.* 596, 680 (2003)

REN, J. R. See AMENOMORI, M., et al. Multi-TeV Gamma-Ray Flares from Markarian 421 in 2000 and 2001 Observed with the Tibet Air Shower Array.

REN, Y. Flux Rope Acceleration and Enhanced Magnetic Reconnection Rate. *C. Z. Cheng, Y. Ren, G. S. Choe, & Y.-J. Moon.* 596, 1341 (2003)

RENBARGER, T. See NOVAK, G., et al. First Results from the Submillimeter Polarimeter for Antarctic Remote Observations: Evidence of Large-Scale Toroidal Magnetic Fields in the Galactic Center.

RENZINI, A. See POLI, F., et al. The Evolution of the Galaxy Luminosity Function in the Rest-Frame Blue Band up to $z = 3.5$.

See GENZEL, R., et al. The Stellar Cusp around the Supermassive Black Hole in the Galactic Center.

RENZINI, ALVIO. Far-Ultraviolet Emission from Elliptical Galaxies at $z = 0.33$. *Thomas M. Brown, Henry C. Ferguson, Ed Smith, Charles W. Bowers, Randy A. Kimble, Alvio Renzini, & R. Michael Rich.* 584, L69 (2003)

Evidence of a Significant Intermediate-Age Population in the M31 Halo from Main-Sequence Photometry. *Thomas M. Brown, Henry C. Ferguson, Ed Smith, Randy A. Kimble, Allen V. Sweigart, Alvio Renzini, R. Michael Rich, & Don A. VandenBerg.* 592, L17 (2003)

REPHAELI, Y. See BATTISTELLI, E. S., et al. Triple Experiment Spectrum of the Sunyaev-Zel'dovich Effect in the Coma Cluster: H_0.

REPHAELI, YOEL. *Rossi X-Ray Timing Explorer* Observations of A2256. *Yoel Rephaeli & Duane Gruber.* 595, 137 (2003)

REPNOW, R. See SAVIN, D. W., et al. Dielectronic Recombination of the Fe XXI and Fe XXII via $N = 2 \rightarrow N' = 2$ Core Excitations.

RESCONI, E. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

RESSLER, M. E. The Inner Rings of β Pictoris. *Z. Wahhaj, D. W. Koerner, M. E. Ressler, M. W. Werner, D. E. Backman, & A. I. Sargent.* 584, L27 (2003)

RESSLER, MICHAEL E. Structure of the Mid-Infrared–emitting Disk around WL 16. *Michael E. Ressler & Mary Barsony.* 584, 832 (2003)

REST, ARMIN. See SZKODY, PAULA, et al. Two Rare Magnetic Cataclysmic Variables with Extreme Cyclotron Features Identified in the Sloan Digital Sky Survey.

RETTER, ALON. Oscillations in Arcturus from *WIRE* Photometry. *Alon Retter, Timothy R. Bedding, Derek L. Buzasi, Hans Kjeldsen, & László L. Kiss.* 591, L151 (2003)

Oscillations in Arcturus from *WIRE* Photometry: Erratum (ApJ, 591, L151 [2003]). *Alon Retter, Timothy R. Bedding, Derek L. Buzasi, Hans Kjeldsen, & László L. Kiss.* 596, L125 (2003) (Orig. paper in 591, L151 (2003))

RETTIG, TERRENCE W. CO Emission from Disks around AB Aurigae and HD 141569: Implications for Disk Structure and Planet Formation Timescales. *Sean D. Brittain, Terrence W. Rettig, Theodore Simon, Craig Kulesa, Michael A. DiSanti, & Neil Dello Russo.* 588, 535 (2003)

REUCROFT, STEPHEN. On the Cross-Correlation between the Arrival Direction of Ultra–High-Energy Cosmic Rays, BL Lacertae Objects, and EGRET Detections: A New Way to Identify EGRET Sources? *Diego F. Torres, Stephen Reucroft, Olaf Reimer, & Luis A. Anchordoqui.* 595, L13 (2003)

REULAND, MICHIEL. An Obscured Radio Galaxy at High Redshift. *Michiel Reuland, Wil van Breugel, Huub Röttgering, Wim de Vries, Carlos De Breuk, & Daniel Stern.* 582, L71 (2003)

Giant Lyα Nebulae Associated with High-Redshift Radio Galaxies. *Michiel Reuland, Wil van Breugel, Huub Röttgering, Wim de Vries, S. A. Stanford, Arjun Dey, Mark Lacy, Joss Bland-Hawthorn, Michael Dopita, & George Miley.* 592, 755 (2003)

Extended X-Ray Emission around 4C 41.17 at $z = 3.8$. *Caleb Scharf, Ian Smail, Rob Ivison, Richard Bower, Wil van Breugel, & Michiel Reuland.* 596, 105 (2003)

REY, SOO-CHANG. ω Centauri: Not a Recent Merger but Self-enriched? *Imants Platais, Rosemary F. G. Wyse, Leslie Hebb, Young-Wook Lee, & Soo-Chang Rey.* 591, L127 (2003)

REYLE, CELINE. An S_2 Fluorescence Model for Interpreting High-Resolution Cometary Spectra. I. Model Description and Initial Results. *Celine Reyle & D. C. Boice.* 587, 464 (2003)

REYNOLDS, J. E. See GREENHILL, L. J., et al. A Warped Accretion Disk and Wide-Angle Outflow in the Inner Parsec of the Circinus Galaxy.

The Vela Pulsar's Proper Motion and Parallax Derived from VLBI Observations. *R. Dodson, D. Legge, J. E. Reynolds, & P. M. McCulloch.* 596, 1137 (2003)

REYNOLDS, P. T. See HOLDER, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.

See HALL, T. A., et al. Search for TeV Emissions from Pulsars in Binary Systems.

See DE LA CALLE PÉREZ, I., et al. Search for High-Energy Gamma Rays from an X-Ray–Selected Blazar Sample.

REYNOLDS, R. J. A Search for Ionized Gas in the Draco and Ursa Minor Dwarf Spheroidal Galaxies. *J. S. Gallagher, G. J. Madsen, R. J. Reynolds, E. K. Grebel, & T. A. Smecker-Hane.* 588, 326 (2003)

The Wisconsin Hα Mapper Northern Sky Survey. *L. M. Haffner, R. J. Reynolds, S. L. Tufte, G. J. Madsen, K. P. Jaehnig, & J. W. Percival.* 149, 405 (2003)

REYNOLDS, S. P. *Chandra* Detection of a Pulsar Wind Nebula Associated with Supernova Remnant 3C 396. *C. M. Olbert, J. W. Keohane, K. A. Arnaud, K. K. Dyer, S. P. Reynolds, & S. Safi-Harb.* 592, L45 (2003)

Ejecta Detection in Middle-aged Large Magellanic Cloud Supernova Remnants 0548−70.4 and 0534−69.9. *S. P. Hendrick, K. J. Borkowski, & S. P. Reynolds.* 593, 370 (2003)

Discovery of a New Pulsar Wind Nebula in the Large Magellanic Cloud. *B. M. Gaensler, S. P. Hendrick, S. P. Reynolds, & K. J. Borkowski.* 594, L111 (2003)

REYNOLDS, STEPHEN P. *Chandra* CCD Imagery of the Northeast and Northwest Limbs of SN 1006. *Knox S. Long, Stephen P. Reynolds, John C. Raymond, P. Frank Winkler, Kristy K. Dyer, & Robert Petre.* 586, 1162 (2003)

Near-Infrared Synchrotron Emission from Cassiopeia A. *Jeonghee Rho, Stephen P. Reynolds, William T. Reach, Tom H. Jarrett, Glenn E. Allen, & John C. Wilson.* 592, 299 (2003)

RHO, J. OH (1720 MHz) Masers and Mixed-Morphology Supernova Remnants. *F. Yusef-Zadeh, M. Wardle, J. Rho, & M. Sakano.* 585, 319 (2003)

RHO, JEONGHEE. Near-Infrared Synchrotron Emission from Cassiopeia A. *Jeonghee Rho, Stephen P. Reynolds, William T. Reach, Tom H. Jarrett, Glenn E. Allen, & John C. Wilson.* 592, 299 (2003)

RHOADS, J. See HJORTH, J., et al. Very High Column Density and Small Reddening toward GRB 020124 at $z = 3.20$.

See GREINER, J., et al. GRB 011121: A Collimated Outflow into Wind-blown Surroundings.

RHOADS, J. E. No X-Ray–bright Type II Quasars among the Lyα Emitters. *S. Malhotra, J. X. Wang, J. E. Rhoads, T. M. Heckman, & C. A. Norman.* 585, L25 (2003)

RHOADS, JAMES E. Dirty Fireballs and Orphan Afterglows: A Tale of Two Transients. *James E. Rhoads.* 591, 1097 (2003)

RHODE, W. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

RHODES, JASON. Emission-Line Galaxies in the STIS Parallel Survey. II. Star Formation Density. *Harry I. Teplitz, Nicholas R. Collins, Jonathan P. Gardner, Robert S. Hill, & Jason Rhodes.* 589, 704 (2003)

Emission-Line Galaxies in the Space Telescope Imaging Spectrograph Parallel Survey. I. Observations and Data Analysis. *Harry I. Teplitz, Nicholas R. Collins, Jonathan P. Gardner, Robert S. Hill, Sara R. Heap, Don J. Lindler, Jason Rhodes, & Bruce E. Woodgate.* 146, 209 (2003)

RIAZUELO, ALAIN. *COBE* DMR–normalized Dark Energy Cosmogony. *Pia Mukherjee, A. J. Banday, Alain Riazuelo, Krzysztof M. Górski, & Bharat Ratra.* 598, 767 (2003)

RIBAS, I. Fundamental Properties and Distances of Large Magellanic Cloud Eclipsing Binaries. IV. HV 5936. *E. L. Fitzpatrick, I. Ribas, E. F. Guinan, F. P. Maloney, & A. Claret.* 587, 685 (2003)

Intrinsic Properties of the Young Stellar Object SU Aurigae. *L. E. DeWarf, J. F. Sepinsky, E. F. Guinan, I. Ribas, & I. Nadalin.* 590, 357 (2003)

Atmospheric Loss of Exoplanets Resulting from Stellar X-Ray and Extreme-Ultraviolet Heating. *H. Lammer, F. Selsis, I. Ribas, E. F. Guinan, S. J. Bauer, & W. W. Weiss.* 598, L121 (2003)

RIBAS, IGNASI. Far-Ultraviolet Emissions of the Sun in Time: Probing Solar Magnetic Activity and Effects on Evolution of Paleoplanetary Atmospheres. *Edward F. Guinan, Ignasi Ribas, & Graham M. Harper.* 594, 561 (2003)

RIBEIRO, DAIANA. A Method for Simultaneous Determination of A_V and R and Applications. *Jorge R. Ducati, Daiana Ribeiro, & Sandro B. Rembold.* 588, 344 (2003)

RIBEIRO, MARCELO B. Relativistic Cosmology Number Counts and the Luminosity Function. *Marcelo B. Ribeiro & William R. Stoeger.* 592, 1 (2003)

RIBO, M. Discovery of a New Radio Galaxy within the Error Box of the Unidentified Gamma-Ray Source 3EG J1735−1500. *J. A. Combi, G. E. Romero, J. M. Paredes, D. F. Torres, & M. Ribó.* 588, 731 (2003)

RIBORDY, M. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

RICCARDI, ARMANDO. See CLOSE, LAIRD M., et al. High-Resolution Images of Orbital Motion in the Trapezium Cluster: First Scientific Results from the Multiple Mirror Telescope Deformable Secondary Mirror Adaptive Optics System.

RICE, W. K. M. On the Formation Timescale and Core Masses of Gas Giant Planets. *W. K. M. Rice & Philip J. Armitage.* 598, L55 (2003)

RICH, MARGARET. *ROSAT* X-Ray Spectral Properties of Nearby Young Associations: TW Hydrae, Tucana-Horologium, and the β Pictoris Moving Group. *Joel H. Kastner, Lara Crigger, Margaret Rich, & David A. Weintraub.* 585, 878 (2003)

RICH, R. MICHAEL. Far-Ultraviolet Emission from Elliptical Galaxies at $z = 0.33$. *Thomas M. Brown, Henry C. Ferguson, Ed Smith, Charles W. Bowers, Randy A. Kimble, Alvio Renzini, & R. Michael Rich.* 584, L69 (2003)

Discovery of an Ultracool Subdwarf: LSR 1425+7102, the First Star with Spectral Type sdM8.0. *Sébastien Lépine, Michael M. Shara, & R. Michael Rich.* 585, L69 (2003)

LSR 0602+3910: Discovery of a Bright Nearby L-Type Brown Dwarf. *Samir Salim, Sébastien Lépine, R. Michael Rich, & Michael M. Shara.* 586, L149 (2003)

LSR 1610−0040: The First Early-Type L Subdwarf. *Sébastien Lépine, R. Michael Rich, & Michael M. Shara.* 591, L49 (2003)

Evidence of a Significant Intermediate-Age Population in the M31 Halo from Main-Sequence Photometry. *Thomas M. Brown, Henry C. Ferguson, Ed Smith, Randy A. Kimble, Allen V. Sweigart, Alvio Renzini, R. Michael Rich, & Don A. VandenBerg.* 592, L17 (2003)

Constraints on the Origin of Manganese from the Composition of the Sagittarius Dwarf Spheroidal Galaxy and the Galactic Bulge. *Andrew McWilliam, R. Michael Rich, & Tammy A. Smecker-Hane.* 592, L21 (2003)

Constraints on the Origin of Manganese from the Composition of the Sagittarius Dwarf Galaxy and the Galactic Bulge: Erratum (ApJ, 592, L21 [2003]). *Andrew McWilliam, R. Michael Rich, & Tammy A. Smecker-Hane.* 593, L145 (2003) (Orig. paper in 592, L21 (2003))

RICHARDS, A. M. S. The Sizes of OH (1720 MHz) Supernova Remnant Masers: MERLIN and Very Long Baseline Array Observations of IC 443. *I. M. Hoffman, W. M. Goss, C. L. Brogan, M. J. Claussen, & A. M. S. Richards.* 583, 272 (2003)

The Formaldehyde Masers in NGC 7538 and G29.96−0.02: Very Long Baseline Array, Multielement Radio-linked Interferometer Network, and Very Large Array Observations. *Ian M. Hoffman, W. M. Goss, Patrick Palmer, & A. M. S. Richards.* 598, 1061 (2003)

RICHARDS, DONALD ST. P. Statistical Analysis of 5 Year Continuous Radio Flare Data from β Persei, V711 Tauri, δ Librae, and UX Arietis. *Mercedes T. Richards, Elizabeth B. Waltman, Frank D. Ghigo, & Donald St. P. Richards.* 147, 337 (2003)

RICHARDS, E. A. See CHAPMAN, S. C., et al. The Properties of Microjansky Radio Sources in the Hubble Deep Field–North, SSA 13, and SSA 22 Fields.

RICHARDS, MERCEDES T. Statistical Analysis of 5 Year Continuous Radio Flare Data from β Persei, V711 Tauri, δ Librae, and UX Arietis. *Mercedes T. Richards, Elizabeth B. Waltman, Frank D. Ghigo, & Donald St. P. Richards.* 147, 337 (2003)

RICHARDSON, G. Particle Acceleration in Relativistic Jets due to Weibel Instability. *K.-I. Nishikawa, P. Hardee, G. Richardson, R. Preece, H. Sol, & G. J. Fishman.* 595, 555 (2003)

RICHARDSON, I. G. Coronal Mass Ejections, the Tail of the Solar Wind Magnetic Field Distribution, and 11 Year Cosmic-Ray Modulation at 1 AU. *E. W. Cliver, A. G. Ling, & I. G. Richardson.* 592, 574 (2003)

RICHARDSON, J. D. *Voyager 1* and *2* Observations of Magnetic Fields and Associated Cosmic-Ray Variations from 2000 through 2001: 60–87 AU. *L. F. Burlaga, N. F. Ness, F. B. McDonald, J. D. Richardson, & C. Wang.* 582, 540 (2003)

Large-Scale Magnetic Field Fluctuations and Development of the 1999–2000 Global Merged Interaction Region: 1–60 AU. *L. F. Burlaga, C. Wang, J. D. Richardson, & N. F. Ness.* 585, 1158 (2003)

Evolution of Magnetic Fields in Corotating Interaction Regions from 1 to 95 AU: Order to Chaos. *L. F. Burlaga, C. Wang, J. D. Richardson, & N. F. Ness.* 590, 554 (2003)

RICHARDSON, L. JEREMY. Infrared Observations during the Secondary Eclipse of HD 209458b. I. 3.6 Micron Occultation Spectroscopy Using the Very Large Telescope. *L. Jeremy Richardson, Drake Deming, Guenter Wiedemann, Cedric Goukenleuque, David Steyert, Joseph Harrington, & Larry W. Esposito.* 584, 1053 (2003)

Infrared Observations During the Secondary Eclipse of HD 209458b. II. Strong Limits on the Infrared Spectrum near 2.2 Microns. *L. Jeremy Richardson, Drake Deming, & Sara Seager.* 597, 581 (2003)

RICHER, HARVEY B. The Pulsar/White Dwarf/Planet System in M4: Improved Astrometry. *Harvey B. Richer, Rodrigo Ibata, Gregory G. Fahlman, & Mark Huber.* 597, L45 (2003)

RICHSTONE, DOUGLAS. See GEBHARDT, KARL, et al. Axisymmetric Dynamical Models of the Central Regions of Galaxies.

See PINKNEY, JASON, et al. Kinematics of 10 Early-Type Galaxies from *Hubble Space Telescope* and Ground-based Spectroscopy.

RICHSTONE, DOUGLAS O. Formation of Supermassive Black Holes in Galactic Bulges: A Rotating Collapse Model Consistent with the M_{BH}-σ Relation. *Fred C. Adams, David S. Graff, Manasse Mbonye, & Douglas O. Richstone.* 591, 125 (2003)

RICHTER, G. M. Analysis of the Interaction Effects in the Southern Galaxy Pair Tol 1238−364 and ESO 381-G009. *S. Temporin, S. Ciroi, P. Rafanelli, M. Radovich, J. Vennik, G. M. Richter, & K. Birkle.* 148, 353 (2003)

RICHTER, M. Kinematics of Ultracompact H II Regions Revealed: High Spatial and Spectral Resolution Mapping of the 12.8 Micron [Ne II] Line in Monoceros R2. *D. T. Jaffe, Q. Zhu, J. H. Lacy, & M. Richter.* 596, 1053 (2003)

RICHTER, M. J. Propane on Titan. *H. G. Roe, T. K. Greathouse, M. J. Richter, & J. H. Lacy.* 597, L65 (2003)

RICHTER, P. See WAKKER, B. P., et al. The *Far Ultraviolet Spectroscopic Explorer* Survey of O VI Absorption in and near the Galaxy.

See SAVAGE, B. D., et al. Distribution and Kinematics of O VI in the Galactic Halo.

See SEMBACH, K. R., et al. Highly Ionized High-Velocity Gas in the Vicinity of the Galaxy.

RICHTER, PHILIPP. Origins of the Highly Ionized Gas along the Line of Sight toward HD 116852. *Andrew J. Fox, Blair D. Savage, Kenneth R. Sembach, Dirk Fabian, Philipp Richter, David M. Meyer, James Lauroesch, & J. Christopher Howk.* 582, 793 (2003)

A *Far Ultraviolet Spectroscopic Explorer* Survey of Molecular Hydrogen in Intermediate-Velocity Clouds in the Milky Way Halo. *Philipp Richter, Bart P. Wakker, Blair D. Savage, & Kenneth R. Sembach.* 586, 230 (2003)

RICHTER, S. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

RICKER, G. R. See PRICE, P. A., et al. GRB 010921: Strong Limits on an Underlying Supernova from the *Hubble Space Telescope*.

See MUNO, M. P., et al. A Deep *Chandra* Catalog of X-Ray Point Sources toward the Galactic Center.

See BAGANOFF, F. K., et al. *Chandra* X-Ray Spectroscopic Imaging of Sagittarius A* and the Central Parsec of the Galaxy.

See CREW, G. B., et al. *HETE-2* Localization and Observation of the Bright, X-Ray–rich Gamma-Ray Burst GRB 021211.

X-Ray Sources with Periodic Variability in a Deep *Chandra* Image of the Galactic Center. *M. P. Muno, F. K. Baganoff, M. W. Bautz, W. N. Brandt, G. P. Garmire, & G. R. Ricker.* 599, 465 (2003)

RICKER, GEORGE R. The X-Ray Afterglows of GRB 020813 and GRB 021004 with *Chandra* HETGS: Possible Evidence for a Supernova prior to GRB 020813. *Nathanial R. Butler, Herman L. Marshall, George R. Ricker, Roland K. Vanderspek, Peter G. Ford, Geoffrey B. Crew, Donald Q. Lamb, & J. Garrett Jernigan.* 597, 1010 (2003)

RICKER, P. M. See DURSI, L. J., et al. The Response of Model and Astrophysical Thermonuclear Flames to Curvature and Stretch.

RIDDLE, R. See MUKADEM, ANJUM S., et al. Constraining the Evolution of ZZ Ceti.

RIDDLE, R. L. See GIES, D. R., et al. Wind Accretion and State Transitions in Cygnus X-1.

RIDGWAY, STEPHEN T. See SMITH, VERNE V., et al. High-Resolution Infrared Spectroscopy of the Brown Dwarf ϵ Indi Ba.

RIEKE, G. H. Gravity Indicators in the Near-Infrared Spectra of Brown Dwarfs. *N. I. Gorlova, M. R. Meyer, G. H. Rieke, & J. Liebert.* 593, 1074 (2003)

A Census of the Young Cluster IC 348. *K. L. Luhman, John R. Stauffer, A. A. Muench, G. H. Rieke, E. A. Lada, J. Bouvier, & C. J. Lada.* 593, 1093 (2003)

RIEKE, M. *Hubble Space Telescope* Paα and 1.9 Micron Imaging of Sagittarius A West. *N. Z. Scoville, S. R. Stolovy, M. Rieke, M. Christopher, & F. Yusef-Zadeh.* 594, 294 (2003)

RIEKE, MARCIA J. Measuring Distances and Probing the Unresolved Stellar Populations of Galaxies Using Infrared Surface Brightness Fluctuations. *Joseph B. Jensen, John L. Tonry, Brian J. Barris, Rodger I. Thompson, Michael C. Liu, Marcia J. Rieke, Edward A. Ajhar, & John P. Blakeslee.* 583, 712 (2003)

Infrared Observations of Galaxies in the Local Universe. II. 391 Calibrated Images with Photometric and Structural Measurements. *Albert D. Grauer, Marcia J. Rieke, & Alice C. Quillen.* 149, 327 (2003)

RIESS, ADAM G. See BLAKESLEE, JOHN P., et al. Discovery of Two Distant Type Ia Supernovae in the Hubble Deep Field–North with the Advanced Camera for Surveys.

See TONRY, JOHN L., et al. Cosmological Results from High-z Supernovae.

Have the Elusive Progenitors of Type Ia Supernovae Been Discovered? *Mario Livio & Adam G. Riess.* 594, L93 (2003)

RIFFESER, ARNO. The Wendelstein Calar Alto Pixellensing Project (WeCAPP): First MACHO Candidates. *Arno Riffeser, Jürgen Fliri, Ralf Bender, Stella Seitz, & Claus A. Gössl.* 599, L17 (2003)

RIGAZIO, MATT. Charge Abundances of the Solar Wind Ions Inferred from Cometary X-Ray Spectra. *V. Kharchenko, Matt Rigazio, A. Dalgarno, & V. A. Krasnopolsky.* 585, L73 (2003)

RIGBY, J. See GREEN, E. M., et al. Discovery of a New Class of Pulsating Stars: Gravity-Mode Pulsators among Subdwarf B Stars.

RIGBY, JANE R. High-Resolution STIS/*Hubble Space Telescope* and HIRES/Keck Spectra of Three Weak Mg II Absorbers toward PG 1643+706. *Jane C. Charlton, Jie Ding, Stephanie G. Zonak, Christopher W. Churchill, Nicholas A. Bond, & Jane R. Rigby.* 589, 111 (2003)

Stellar Hydrodynamics in Radiative Regions. *Patrick A. Young, Karen A. Knierman, Jane R. Rigby, & David Arnett.* 595, 1114 (2003)

RILEY, K. See DURSI, L. J., et al. The Response of Model and Astrophysical Thermonuclear Flames to Curvature and Stretch.

RILEY, P. Temporal Evolution of a Streamer Complex: Coronal and in Situ Plasma Parameters. *A. Bemporad, G. Poletto, S. T. Suess, Y.-K. Ko, S. Parenti, P. Riley, M. Romoli, & T. Z. Zurbuchen.* 593, 1146 (2003)

RIMMELE, THOMAS. Properties of Magnetic and Velocity Fields in and around Solar Pores. *K. Sankarasubramanian & Thomas Rimmele.* 598, 689 (2003)

RINGWALD, F. A. The Origin of Soft X-Rays in DQ Herculis. *K. Mukai, M. Still, & F. A. Ringwald.* 594, 428 (2003)

RISALITI, G. A *Chandra* Minisurvey of X-Ray–weak Quasars. *G. Risaliti, M. Elvis, R. Gilli, & M. Salvati.* 587, L9 (2003)

Revealing the Active Galactic Nucleus in the Superantennae through *L*-Band Spectroscopy. *G. Risaliti, R. Maiolino, A. Marconi, L. Bassani, S. Berta, V. Braito, R. Della Ceca, A. Franceschini, & M. Salvati.* 595, L17 (2003)

RIX, H. W. See DADDI, E., et al. Detection of Strong Clustering of Red *K*-selected Galaxies at $2 < z_{\rm phot} < 4$ in the Hubble Deep Field–South.

RIX, H.-W. See RUSIN, D., et al. The Evolution of a Mass-selected Sample of Early-Type Field Galaxies.

See PRADA, FRANCISCO, et al. Observing the Dark Matter Density Profile of Isolated Galaxies.

RIX, HANS-WALTER. Dark Matter within High Surface Brightness Spiral Galaxies. *Thilo Kranz, Adrianne Slyz, & Hans-Walter Rix.* 586, 143 (2003)

See FRANX, MARIJN, et al. A Significant Population of Red, Near-Infrared–selected High-Redshift Galaxies.

See VAN DOKKUM, PIETER G., et al. Spectroscopic Confirmation of a Substantial Population of Luminous Red Galaxies at Redshifts $z \gtrsim 2$.

See LABBÉ, IVO, et al. Large Disklike Galaxies at High Redshift.

The Tully-Fisher Relation of Barred Galaxies. *Stéphane Courteau, David R. Andersen, Matthew A. Bershady, Lauren A. MacArthur, & Hans-Walter Rix.* 594, 208 (2003)

See NEWBERG, HEIDI JO, et al. Sagittarius Tidal Debris 90 kiloparsecs from the Galactic Center.

See RUDNICK, GREGORY, et al. The Rest-Frame Optical Luminosity Density, Color, and Stellar Mass Density of the Universe from $z = 0$ to $z = 3$.

RIZZI, LUCA. RR Lyrae and Short-Period Variable Stars in the Dwarf Irregular Galaxy NGC 6822. *Gisella Clementini, Enrico V. Held, Lara Baldacci, & Luca Rizzi.* 588, L85 (2003)

Clues to the Evolution of the Carina Dwarf Spheroidal Galaxy from the Color Distribution of Its Red Giant Stars. *Luca Rizzi, Enrico V. Held, Gianpaolo Bertelli, & Ivo Saviane.* 589, L85 (2003)

RIZZO, J. R. Detection of Reactive Ions in the Ultracompact H II Regions Monoceros R2 and G29.96−0.02. *J. R. Rizzo, A. Fuente, A. Rodríguez-Franco, & S. García-Burillo.* 597, L153 (2003)

ROBB, R. See BÖTTCHER, M., et al. Coordinated Multiwavelength Observations of BL Lacertae in 2000.

ROBBA, N. Coupling between Periodic and Aperiodic Variability in SAX J1808.4−3658. *M. T. Menna, L. Burderi, L. Stella, N. Robba, & M. van der Klis.* 589, 503 (2003)

ROBBA, N. R. *BeppoSAX* Serendipitous Discovery of the X-Ray Pulsar SAX J1802.7−2017. *G. Augello, R. Iaria, N. R. Robba, T. Di Salvo, L. Burderi, G. Lavagetto, & L. Stella.* 596, L63 (2003)

ROBERGE, W. G. A Test Case for the Organic Refractory Model of Interstellar Dust. *S. S. Shenoy, D. C. B. Whittet, J. E. Chiar, A. J. Adamson, W. G. Roberge, & G. E. Hassel.* 591, 962 (2003)

ROBERT, CARMELLE. Synthetic High-Resolution Line Spectra of Star-forming Galaxies below 1200 Å. *Carmelle Robert, Anne Pellerin, Alessandra Aloisi, Claus Leitherer, Charles Hoopes, & Timothy M. Heckman.* 144, 21 (2003)

ROBERTS, D. A. Thermal OH (1667/1665 MHz) Absorption and Nonthermal OH (1720 MHz) Emission toward the W28 Supernova Remnant. *F. Yusef-Zadeh, M. Wardle, & D. A. Roberts.* 583, 267 (2003)

ROBERTS, HELEN. Enhanced Deuterium Fractionation in Dense Interstellar Cores Resulting from Multiply Deuterated H_3^+. *Helen Roberts, Eric Herbst, & T. J. Millar.* 591, L41 (2003)

ROBERTS, LEWIS C., JR. ι Cassiopeiae: Orbit, Masses, and Photometry from Adaptive Optics Imaging in the *I* and *H* Bands. *Jack Drummond, Scott Milster, Patrick Ryan, & Lewis C. Roberts, Jr.* 585, 1007 (2003)

ROBERTS, M. S. E. A Major Soft Gamma Repeater–like Outburst and Rotation Glitch in the No-longer-so-anomalous X-Ray Pulsar 1E 2259+586. *V. M. Kaspi, F. P. Gavriil, P. M. Woods, J. B. Jensen, M. S. E. Roberts, & D. Chakrabarty.* 588, L93 (2003)

ROBERTS, MALLORY S. E. The Pulsar Wind Nebula in G11.2−0.3. *Mallory S. E. Roberts, Cindy R. Tam, Victoria M. Kaspi, Maxim Lyutikov, Gautam Vasisht, Michael Pivovaroff, Eric V. Gotthelf, & Nobuyuki Kawai.* 588, 992 (2003)

The Expansion of G11.2−0.3, a Radio Composite Supernova Remnant. *Cindy Tam & Mallory S. E. Roberts.* 598, L27 (2003)

ROBERTS, MORTON S. X-Ray Emission from a Sample of Young Supernovae. *Joel N. Bregman, John C. Houck, Roger A. Chevalier, & Morton S. Roberts.* 596, 323 (2003)

ROBERTSON, STANLEY L. On Intrinsic Magnetic Moments in Black Hole Candidates. *Stanley L. Robertson & Darryl J. Leiter.* 596, L203 (2003)

ROBINSON, A. Black Hole Masses in Three Seyfert Galaxies. *C. A. Onken, B. M. Peterson, M. Dietrich, A. Robinson, & I. M. Salamanca.* 585, 121 (2003)

Resolved Mid-Infrared Emission in the Narrow-Line Region of NGC 4151. *James T. Radomski, Robert K. Piña, Christopher Packham, Charles M. Telesco, James M. De Buizer, R. Scott Fisher, & A. Robinson.* 587, 117 (2003)

ROBINSON, EDWARD L. The Baldwin Effect and Black Hole Accretion: A Spectral Principal Component Analysis of a Complete Quasar Sample. *Zhaohui Shang, Beverley J. Wills, Edward L. Robinson, D. Wills, Ari Laor, Bingrong Xie, & Juntao Yuan.* 586, 52 (2003)

ROBINSON, F. J. Global Parameter and Helioseismic Tests of Solar Variability Models. *L. H. Li, S. Basu, S. Sofia, F. J. Robinson, P. Demarque, & D. B. Guenther.* 591, 1267 (2003)

ROBINSON, RICHARD D. A *Far Ultraviolet Spectroscopic Explorer* Survey of Coronal Forbidden Lines in Late-Type Stars. *Seth Redfield, Thomas R. Ayres, Jeffrey L. Linsky, Thomas B. Ake, A. K. Dupree, Richard D. Robinson, & Peter R. Young.* 585, 993 (2003)

ROBSON, E. I. See HOLLAND, W. S., et al. Submillimeter Observations of an Asymmetric Dust Disk around Fomalhaut.

ROCHA-PINTO, HELIO J. Tracing the Galactic Anticenter Stellar Stream with 2MASS M Giants. *Helio J. Rocha-Pinto, Steven R. Majewski, M. F. Skrutskie, & Jeffrey D. Crane.* 594, L115 (2003)

Exploring Halo Substructure with Giant Stars: Spectroscopy of Stars in the Galactic Anticenter Stellar Structure. *Jeffrey D. Crane, Steven R. Majewski, Helio J. Rocha-Pinto, Peter M. Frinchaboy, Michael F. Skrutskie, & David R. Law.* 594, L119 (2003)

ROCKOSI, CONSTANCE. See SZALAY, ALEXANDER S., et al. Karhunen-Loève Estimation of the Power Spectrum Parameters from the Angular Distribution of Galaxies in Early Sloan Digital Sky Survey Data.

ROCKOSI, CONSTANCE M. See HELMI, AMINA, et al. Selection of Metal-poor Giant Stars Using the Sloan Digital Sky Survey Photometric System.

ROCKSTROH, J. M. Updated Formula for Calculating Partial Cross Sections for Nuclear Reactions of Nuclei with $Z \leq 28$ and $E > 150$ MeV per Nucleon in Hydrogen Targets. *W. R. Webber, A. Soutoul, J. C. Kish, & J. M. Rockstroh.* 144, 153 (2003)

RODGERS, A. See AKERLOF, C. W., et al. A Search for Correlations of TeV Gamma Rays with Ultra–High-Energy Cosmic Rays.

See ALCOCK, C., et al. The MACHO Project Large Magellanic Cloud Variable Star Inventory. XI. Frequency Analysis of the Fundamental Mode RR Lyrae Stars.

RODGERS, S. D. Chemical Evolution in Protostellar Envelopes: Cocoon Chemistry. *S. D. Rodgers & S. B. Charnley.* 585, 355 (2003)

RODRIGUES, CLAUDIA V. Optical Polarization and Near-Infrared Photometry of the Proto–Planetary Nebula Henize 3-1475. *Claudia V. Rodrigues, Francisco J. Jablonski, Jane Gregorio-Hetem, Gabriel R. Hickel, & Marilia J. Sartori.* 587, 312 (2003)

RODRIGUEZ, D. See BÖTTCHER, M., et al. Coordinated Multiwavelength Observations of BL Lacertae in 2000.

RODRIGUEZ, J. Spectral Evolution of the Microquasar XTE J1550−564 over Its Entire 2000 Outburst. *J. Rodriguez, S. Corbel, & J. A. Tomsick.* 595, 1032 (2003)

RODRÍGUEZ, L. F. Very Large Array Observations of Proper Motions in YLW 15. *S. Curiel, J. M. Girart, L. F. Rodríguez, & J. Canto.* 582, L109 (2003)

VLA and BIMA Observations toward the Exciting Source of the Massive HH 80–81 Outflow. *Y. Gómez, L. F. Rodríguez, J. M. Girart, G. Garay, & J. Martí.* 597, 414 (2003)

See TORRELLES, J. M., et al. Evidence for Evolution of the Outflow Collimation in Very Young Stellar Objects.

RODRÍGUEZ, LUIS F. Very Large Array Observations of Proper Motions in L1551 IRS 5. *Luis F. Rodríguez, Salvador Curiel, Jorge Cantó, Laurent Loinard, Alejandro C. Raga, & Jose M. Torrelles.* 583, 330 (2003)

The Binary Jet in L1551 IRS 5. *Luis F. Rodríguez, Alicia Porras, Mark J. Claussen, Salvador Curiel, David J. Wilner, & Paul T. P. Ho.* 586, L137 (2003)

Ejection of a Low-Mass Star in a Young Stellar System in Taurus. *Laurent Loinard, Luis F. Rodríguez, & Monica I. Rodríguez.* 587, L47 (2003)

See TRINIDAD, MIGUEL A., et al. Observations of Water Masers and Radio Continuum Emission in AFGL 2591.

A Cluster of Compact Radio Sources in NGC 2024 (Orion B). *Luis F. Rodríguez, Yolanda Gómez, & Bo Reipurth.* 598, 1100 (2003)

RODRIGUEZ, MONICA. [Fe IV] Emission in Ionized Nebulae. *Monica Rodriguez.* 590, 296 (2003)

RODRÍGUEZ, MONICA I. Ejection of a Low-Mass Star in a Young Stellar System in Taurus. *Laurent Loinard, Luis F. Rodríguez, & Monica I. Rodríguez.* 587, L47 (2003)

RODRIGUEZ, R. A Bayesian Analysis of the Cepheid Distance Scale. *Thomas G. Barnes III, W. H. Jefferys, J. O. Berger, Peter J. Mueller, K. Orr, & R. Rodriguez.* 592, 539 (2003)

RODRÍGUEZ-FRANCO, A. Detection of Reactive Ions in the Ultracompact H II Regions Monoceros R2 and G29.96−0.02. *J. R. Rizzo, A. Fuente, A. Rodríguez-Franco, & S. García-Burillo.* 597, L153 (2003)

First Evidence of Dusty Disks around Herbig Be Stars. *A. Fuente, A. Rodríguez-Franco, L. Testi, A. Natta, R. Bachiller, & R. Neri.* 598, L39 (2003)

RODRÍGUEZ-MARTÍNEZ, MARIO. Technique for Detecting Warm-Hot Intergalactic Gas in Quasar Ultraviolet Spectra. *Luc Binette, Mario Rodríguez-Martínez, Sinhue Haro-Corzo, & Isidro Ballinas.* 590, 58 (2003)

RODRÍGUEZ MARTINO, J. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

ROE, H. G. Propane on Titan. *H. G. Roe, T. K. Greathouse, M. J. Richter, & J. H. Lacy.* 597, L65 (2003)

ROEPKE, F. K. On the Small-Scale Stability of Thermonuclear Flames in Type Ia Supernovae. *F. K. Roepke, J. C. Niemeyer, & W. Hillenbrandt.* 588, 952 (2003)

RÖTTGERING, H. J. A. See DADDI, E., et al. Detection of Strong Clustering of Red *K*-selected Galaxies at $2 < z_{\rm phot} < 4$ in the Hubble Deep Field–South.

See COHEN, A. S., et al. The Low-Frequency Radio Counterpart of the *XMM* Large-Scale Structure Survey.

RÖTTGERING, HUUB. An Obscured Radio Galaxy at High Redshift. *Michiel Reuland, Wil van Breugel, Huub Röttgering, Wim de Vries, Carlos De Breuk, & Daniel Stern.* 582, L71 (2003)

See FRANX, MARIJN, et al. A Significant Population of Red, Near-Infrared–selected High-Redshift Galaxies.

See VAN DOKKUM, PIETER G., et al. Spectroscopic Confirmation of a Substantial Population of Luminous Red Galaxies at Redshifts $z \gtrsim 2$.

See LABBÉ, IVO, et al. Large Disklike Galaxies at High Redshift.

See REULAND, MICHIEL, et al. Giant Lyα Nebulae Associated with High-Redshift Radio Galaxies.

See RUDNICK, GREGORY, et al. The Rest-Frame Optical Luminosity Density, Color, and Stellar Mass Density of the Universe from $z = 0$ to $z = 3$.

RÖTTGERING, HUUB J. A. The Infrared Counterparts of the Optically Unidentified Chandra Deep Field–South 1 Ms Sources. *Haojing Yan, Rogier A. Windhorst, Huub J. A. Röttgering, Seth H. Cohen, Stephen C. Odewahn, Scott C. Chapman, & William C. Keel.* 585, 67 (2003)

ROGER, R. S. Neutral Hydrogen Associated with NGC 7129. *H. E. Matthews, C. R. Purton, R. S. Roger, P. E. Dewdney, & G. F. Mitchell.* 592, 176 (2003)

ROGERS, B. See ARAUJO-BETANCOR, S., et al. System Parameters of DW Ursae Majoris.

ROGERS, JOEY W. Chirality of Chromospheric Filaments. *Alexei A. Pevtsov, K. S. Balasubramaniam, & Joey W. Rogers.* 595, 500 (2003)

ROHWER, ERICH G. Accurate Laboratory Wavelengths of the Vacuum Ultraviolet $A(\Upsilon' = 3) - X(\Upsilon'' = 0)$ Band of $^{12}C^{17}O$ and $^{12}C^{18}O$. *Christine Steinmann, Erich G. Rohwer, & Herbert Stafast.* 590, L123 (2003)

Accurate Laboratory Wavelengths of the Vacuum Ultraviolet $A(v' = 3)$–$X(v'' = 0)$ Band of $^{12}C^{17}O$ and ^{1218}O: Erratum (ApJ, 590, L123 [2003]). *Christine M. Steinmann, Erich G. Rohwer, & Herbert Stafast.* 591, L167 (2003) (Orig. paper in 590, L123 (2003))

ROIGER, RICHARD J. How Sample Completeness Affects Gamma-Ray Burst Classification. *Jon Hakkila, Timothy W. Giblin, Richard J. Roiger, David J. Haglin, William S. Paciesas, & Charles A. Meegan.* 582, 320 (2003)

ROL, E. See HJORTH, J., et al. Very High Column Density and Small Reddening toward GRB 020124 at $z = 3.20$.

See GREINER, J., et al. GRB 011121: A Collimated Outflow into Wind-blown Surroundings.

ROMANI, ROGER W. The Pulsar Wind Nebula Torus of PSR J0538+2817 and the Origin of Pulsar Velocities. *Roger W. Romani & C.-Y. Ng.* 585, L41 (2003)

The Gamma-Ray Blazar Content of the Northern Sky. *David Sowards-Emmerd, Roger W. Romani, & Peter F. Michelson.* 590, 109 (2003)

Giant Pulses from PSR B0540−69 in the Large Magellanic Cloud. *Simon Johnston & Roger W. Romani.* 590, L95 (2003)

ROMANISHIN, W. Color Patterns in the Kuiper Belt: A Possible Primordial Origin. *S. C. Tegler, W. Romanishin, & G. J. Consolmagno, S.J.* 599, L49 (2003)

ROMANOVA, M. M. Lepton Acceleration by Relativistic Collisionless Magnetic Reconnection. *D. A. Larrabee, R. V. E. Lovelace, & M. M. Romanova.* 586, 72 (2003)

Magnetohydrodynamic Simulations of Accretion to a Star in the "Propeller" Regime. *M. M. Romanova, O. D. Toropina, Yu. M. Toropin, & R. V. E. Lovelace.* 588, 400 (2003)

Magnetic Inhibition of Accretion and Observability of Isolated Old Neutron Stars. *O. D. Toropina, M. M. Romanova, Yu. M. Toropin, & R. V. E. Lovelace.* 593, 472 (2003)

Three-Dimensional Simulations of Disk Accretion to an Inclined Dipole. I. Magnetospheric Flows at Different Θ. *M. M. Romanova, G. V. Ustyugova, A. V. Koldoba, J. V. Wick, & R. V. E. Lovelace.* 595, 1009 (2003)

Relativistic Poynting Jets from Accretion Disks. *R. V. E. Lovelace & M. M. Romanova.* 596, L159 (2003)

ROMENESKO, P. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

ROMEO, G. See CRILL, B. P., et al. BOOMERANG: A Balloon-Borne Millimeter-Wave Telescope and Total Power Receiver for Mapping Anisotropy in the Cosmic Microwave Background.

See RUHL, J. E., et al. Improved Measurement of the Angular Power Spectrum of Temperature Anisotropy in the Cosmic Microwave Background from Two New Analyses of BOOMERANG Observations.

ROMER, A. KATHY. See GOMEZ, PERCY L., et al. Galaxy Star Formation as a Function of Environment in the Early Data Release of the Sloan Digital Sky Survey.

ROMERO, G. E. Discovery of a New Radio Galaxy within the Error Box of the Unidentified Gamma-Ray Source 3EG J1735−1500. *J. A. Combi, G. E. Romero, J. M. Paredes, D. F. Torres, & M. Ribó.* 588, 731 (2003)

ROMERO, GUSTAVO E. Signatures of Hadronic Cosmic Rays in Starbursts? High-Energy Photons and Neutrinos from NGC 253. *Gustavo E. Romero & Diego F. Torres.* 586, L33 (2003)

Neutrinos from Accreting Neutron Stars. *Luis A. Anchordoqui, Diego F. Torres, Thomas P. McCauley, Gustavo E. Romero, & Felix A. Aharonian.* 589, 481 (2003)

Testing the Binary Black Hole Paradigm through the Fe Kα Line Profile: Application to 3C 273. *Diego F. Torres, Gustavo E. Romero, Xavier Barcons, & Youjun Lu.* 596, L31 (2003)

See BUTT, YOUSAF M., et al. *Chandra*/Very Large Array Follow-up of TeV J2032+4131, the Only Unidentified TeV Gamma-Ray Source.

ROMERO, VAN D. Rotation of a Pulsed Jet, or Plume in a Rotation Flow: A Source of Helicity for an α-ω Astrophysical Dynamo. *Howard F. Beckley, Stirling A. Colgate, Van D. Romero, & Ragnar Ferrel.* 599, 702 (2003)

ROMING, PETER W. A. An X-Ray Pulsar in the Oxygen-rich Supernova Remnant G292.0+1.8. *John P. Hughes, Patrick O. Slane, Sangwook Park, Peter W. A. Roming, & David N. Burrows.* 591, L139 (2003)

ROMNEY, JONATHAN D. Very Long Baseline Array Continuum and H I Absorption Observations of the Ultraluminous Infrared Galaxy IRAS 17208−0014. *Emmanuel Momjian, Jonathan D. Romney, Christopher L. Carilli, Thomas H. Troland, & Gregory B. Taylor.* 587, 160 (2003)

Sensitive VLBI Continuum and H I Absorption Observations of NGC 7474: First Scientific Observations with the Combined Array VLBA, VLA, and Arecibo. *Emmanuel Momjian, Jonathan D. Romney, Christopher L. Carilli, & Thomas H. Troland.* 597, 809 (2003)

ROMOLI, M. Temporal Evolution of a Streamer Complex: Coronal and in Situ Plasma Parameters. *A. Bemporad, G. Poletto, S. T. Suess, Y.-K. Ko, S. Parenti, P. Riley, M. Romoli, & T. Z. Zurbuchen.* 593, 1146 (2003)

ROMOLI, MARCO. The Nascent Solar Wind: Origin and Acceleration. *Luca Teriaca, Giannina Poletto, Marco Romoli, & Doug A. Biesecker.* 588, 566 (2003)

ROOD, R. T. The Puzzling Dynamical Status of the Core of the Globular Cluster NGC 6752. *F. R. Ferraro, A. Possenti, E. Sabbi, P. Lagani, R. T. Rood, N. D'Amico, & L. Origlia.* 595, 179 (2003)

ROOD, ROBERT T. Blue Horizontal-Branch Stars in Old, Metal-rich Stellar Systems. *Ruth C. Peterson, Bruce W. Carney, Ben Dorman, Elizabeth M. Green, Wayne Landsman, James Liebert, Robert W. O'Connell, & Robert T. Rood.* 588, 299 (2003)

Blue Straggler Stars: A Direct Comparison of Star Counts and Population Ratios in Six Galactic Globular Clusters. *Francesco R. Ferraro, Alison Sills, Robert T. Rood, Barbara Paltrinieri, & Roberto Buonanno.* 588, 464 (2003)

Age and Abundance Discrimination in Old Stellar Populations Using Mid-Ultraviolet Colors. *Ben Dorman, Robert W. O'Connell, & Robert T. Rood.* 591, 878 (2003)

ROQUES, F. A Search for Small Kuiper Belt Objects by Stellar Occultations. *F. Roques, M. Moncuquet, N. Lavillonière, M. Auvergne, M. Chevreton, F. Colas, & J. Lecacheux.* 594, L63 (2003)

ROQUES, J. P. See MEREGHETTI, S., et al. *Integral* and *XMM-Newton* Observations of the Weak Gamma-Ray Burst GRB 030227.

ROQUES, S. See PRIEUR, J. L., et al. Speckle Observations of Composite Spectrum Stars. II. Differential Photometry of the Binary Components.

ROS, E. 4C +12.50: A Superluminal Precessing Jet in the Recent Merger System IRAS 13451+1232. *M. L. Lister, K. I. Kellermann, R. C. Vermeulen, M. H. Cohen, J. A. Zensus, & E. Ros.* 584, 135 (2003)

Jet Collimation in Action: Realignment on Kiloparsec Scales in 3C 279. *D. C. Homan, M. L. Lister, K. I. Kellermann, M. H. Cohen, E. Ros, J. A. Zensus, M. Kadler, & R. C. Vermeulen.* 589, L9 (2003)

ROSADO, MARGARITA. Diffuse X-Ray Emission from the Quiescent Superbubble M17, the Omega Nebula. *Bryan C. Dunne, You-Hua Chu, C.-H. Rosie Chen, Justin D. Lowry, Leisa Townsley, Robert A. Gruendl, Martín A. Guerrero, & Margarita Rosado.* 590, 306 (2003)

ROSATI, P. See TRAN, H. D., et al. Advanced Camera for Surveys Observations of Young Star Clusters in the Interacting Galaxy UGC 10214.

Chandra X-Ray Analysis of the Massive High-Redshift Galaxy Clusters Cl J1113.1−2615 and Cl J0152.7−1357. *B. J. Maughan, L. R. Jones, H. Ebeling, E. Perlman, P. Rosati, C. Frye, & C. R. Mullis.* 587, 589 (2003)

See WANG, J., et al. A Puzzling X-Ray Source Found in the *Chandra* Deep Field–South.

See GILLI, R., et al. Tracing the Large-Scale Structure in the *Chandra* Deep Field South.

Iron Abundance in the Intracluster Medium at High Redshift. *P. Tozzi, P. Rosati, S. Ettori, S. Borgani, V. Mainieri, & C. Norman.* 593, 705 (2003)

See BOUWENS, R. J., et al. Star Formation at $z \sim 6$: *i*-Dropouts in the Advanced Camera for Surveys Guaranteed Time Observation Fields.

See GROGIN, N. A., et al. *Hubble Space Telescope* Imaging in the *Chandra* Deep Field–South. III. Quantitative Morphology of the 1 Million Second *Chandra* Counterparts and Comparison with the Field Population.

See FOSBURY, R. A. E., et al. Massive Star Formation in a Gravitationally Lensed H II Galaxy at $z = 3.357$.

See MEURER, GERHARDT R., et al. The Discovery of Globular Clusters in the Protospiral Galaxy NGC 2915: Implications for Hierarchical Galaxy Evolution.

ROSATI, PIERO. See BLAKESLEE, JOHN P., et al. Discovery of Two Distant Type Ia Supernovae in the Hubble Deep Field–North with the Advanced Camera for Surveys.

See BLAKESLEE, JOHN P., et al. Advanced Camera for Surveys Photometry of the Cluster RDCS 1252.9−2927: The Color-Magnitude Relation at $z = 1.24$.

ROSE, H. J. See HOLDER, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.

See HALL, T. A., et al. Search for TeV Emissions from Pulsars in Binary Systems.

See AKERLOF, C. W., et al. A Search for Correlations of TeV Gamma Rays with Ultra–High-Energy Cosmic Rays.

See DE LA CALLE PÉREZ, I., et al. Search for High-Energy Gamma Rays from an X-Ray–Selected Blazar Sample.

ROSENBERG, JESSICA L. The Contribution of H I–rich Galaxies to the Damped Lyα Absorber Population at $z = 0$. *Jessica L. Rosenberg & Stephen E. Schneider.* 585, 256 (2003)

Probing the Size of Low-Redshift Lyα Absorbers. *Jessica L. Rosenberg, Rajib Ganguly, Mark L. Giroux, & John T. Stocke.* 591, 677 (2003)

ROSENTHAL, C. S. See BOGDAN, T. J., et al. Waves in the Magnetized Solar Atmosphere. II. Waves from Localized Sources in Magnetic Flux Concentrations.

ROSER, J. E. Measurement of the Kinetic Energy of Hydrogen Molecules Desorbing from Amorphous Water Ice. *J. E. Roser, S. Swords, G. Vidali, G. Manicò, & V. Pirronello.* 596, L55 (2003)

ROSNER, R. See DURSI, L. J., et al. The Response of Model and Astrophysical Thermonuclear Flames to Curvature and Stretch.

ROSOLOWSKY, E. Giant Molecular Clouds in M33. I. BIMA All-Disk Survey. *G. Engargiola, R. L. Plambeck, E. Rosolowsky, & L. Blitz.* 149, 343 (2003)

Giant Molecular Clouds in M33. II. High-Resolution Observations. *E. Rosolowsky, G. Engargiola, R. Plambeck, & L. Blitz.* 599, 257 (2003)

ROSS, D. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

ROSSI, SABRINA. High-Frequency Quasi-Periodic Oscillations in the Black Holes X-Ray Transient XTE J1650−500. *Jeroen Homan, Marc Klein-Wolt, Sabrina Rossi, Jon M. Miller, Rudy Wijnands, Tomaso Belloni, Michiel van der Klis, & Walter H. G. Lewin.* 586, 1262 (2003)

ROSTAS, F. An Atlas of the Intersystem Transitions of CO. *M. Eidelsberg & F. Rostas.* 145, 89 (2003)

ROTHSCHILD, R. E. Limits to the Cassiopeia A ^{44}Ti Line Flux and Constraints on the Ejecta Energy and the Compact Source. *R. E. Rothschild & R. E. Lingenfelter.* 582, 257 (2003)

X-Ray Temporal Properties of XTE J1650−500 during Outburst Decay. *E. Kalemci, J. A. Tomsick, R. E. Rothschild, K. Pottschmidt, S. Corbel, R. Wijnands, J. M. Miller, & P. Kaaret.* 586, 419 (2003)

ROTS, A. The Time-variable Ultraluminous X-Ray Sources of "The Antennae." *G. Fabbiano, A. Zezas, A. R. King, T. J. Ponman, A. Rots, & Francois Schweizer.* 584, L5 (2003)

A Variable Ultraluminous Supersoft X-Ray Source in "The Antennae": Stellar-Mass Black Hole or White Dwarf? *G. Fabbiano, A. R. King, A. Zezas, T. J. Ponman, A. Rots, & François Schweizer.* 591, 843 (2003)

The Multicolored Hot Interstellar Medium of the "Antennae" Galaxies (NGC 4038/4039). *G. Fabbiano, M. Krauss, A. Zezas, A. Rots, & S. Neff.* 598, 272 (2003)

ROUAN, D. See GENZEL, R., et al. The Stellar Cusp around the Supermassive Black Hole in the Galactic Center.

ROUSSEL, H. Nascent Starbursts in Synchrotron-deficient Galaxies with Hot Dust. *H. Roussel, G. Helou, R. Beck, J. J. Condon, A. Bosma, K. Matthews, & T. H. Jarrett.* 593, 733 (2003)

ROUSSET, G. See FELDT, M., et al. Discovery of a Candidate for the Central Star of the Ultracompact H II Region G5.89−0.39.

ROUSSEV, I. I. A Three-dimensional Model of the Solar Wind Incorporating Solar Magnetogram Observations. *I. I. Roussev, T. I. Gombosi, I. V. Sokolov, M. Velli, W. Manchester IV, D. L. DeZeeuw, P. Liewer, G. Toth, & J. Luhmann.* 595, L57 (2003)

ROUSSEV, ILIA I. A Three-dimensional Flux Rope Model for Coronal Mass Ejections Based on a Loss of Equilibrium. *Ilia I. Roussev, Terry G. Forbes, Tamas I. Gombosi, Igor V. Sokolov, Darren L. DeZeeuw, & Joachim Birn.* 588, L45 (2003)

ROUTLEDGE, D. A New Distance Technique for Galactic Plane Objects. *T. Foster & D. Routledge.* 598, 1005 (2003)

ROVIRA, MARTA. Properties of Fast Submillimeter Time Structures during a Large Solar Flare. *Jean-Pierre Raulin, Pierre Kaufmann, Carlos G. Giménez de Castro, Alessandra A. Pacini, Vladimir S. Makhmutov, Hugo Levato, & Marta Rovira.* 592, 580 (2003)

RUBIN, VERA C. Stellar Motions in the Polar Ring Galaxy NGC 4650A. *Rob A. Swaters & Vera C. Rubin.* 587, L23 (2003)

RUDAK, B. Two-Pole Caustic Model for High-Energy Light Curves of Pulsars. *J. Dyks & B. Rudak.* 598, 1201 (2003)

RUDEEN, A. See COLAVITA, M., et al. Observations of DG Tauri with the Keck Interferometer.

RUDER, H. X-Ray Pulses from Accretion Columns: Contributions to the Energy Dependence of the Pulse Shape. *U. Kraus, C. Zahn, C. Weth, & H. Ruder.* 590, 424 (2003)

RUDERMAN, MALVIN A. Isolated Magnetar Spin-Down, Soft X-Ray Emission, and RX J1856.5−3754. *Kaya Mori & Malvin A. Ruderman.* 592, L75 (2003)

RUDNICK, G. See DADDI, E., et al. Detection of Strong Clustering of Red *K*-selected Galaxies at $2 < z_{\rm phot} < 4$ in the Hubble Deep Field–South.

RUDNICK, GREGORY. See FRANX, MARIJN, et al. A Significant Population of Red, Near-Infrared–selected High-Redshift Galaxies.

See VAN DOKKUM, PIETER G., et al. Spectroscopic Confirmation of a Substantial Population of Luminous Red Galaxies at Redshifts $z \gtrsim 2$.

See LABBÉ, IVO, et al. Large Disklike Galaxies at High Redshift.

The Rest-Frame Optical Luminosity Density, Color, and Stellar Mass Density of the Universe from $z = 0$ to $z = 3$. *Gregory Rudnick, Hans-Walter Rix, Marijn Franx, Ivo Labbé, Michael Blanton, Emanuele Daddi, Natascha M. Förster Schreiber, Alan Moorwood, Huub Röttgering, Ignacio Trujillo, Arjen van de Wel, Paul van der Werf, Pieter G. van Dokkum, & Lottie van Starkenburg.* 599, 847 (2003)

RUDNICK, L. The Identification of Infrared Synchrotron Radiation from Cassiopeia A. *T. J. Jones, L. Rudnick, T. DeLaney, & J. Bowden.* 587, 227 (2003)

RUDNICK, LAWRENCE. Lowering Infrared Cluster Magnetic Field Strengths: The Radio Galaxy Contributions. *Lawrence Rudnick & Katherine M. Blundell.* 588, 143 (2003)

The First Measurement of Cassiopeia A's Forward Shock Expansion Rate. *Tracey DeLaney & Lawrence Rudnick.* 589, 818 (2003)

RUDY, RICHARD J. Near-Infrared Spectrophotometry and the CO Emission in V2274 Cygni (Nova Cygni 2001 No. 1). *Richard J. Rudy, William L. Dimpfl, David K. Lynch, S. Mazuk, Catherine C. Venturini, John C. Wilson, R. C. Puetter, & R. Brad Perry.* 596, 1229 (2003)

RÜDIGER, GÜNTHER. Magnetic Star-Disk Coupling in Classical T Tauri Systems. *Manfred Küker, Thomas Henning, & Günther Rüdiger.* 589, 397 (2003)

RUFFOLO, D. Ionization Fractions of Slow Ions in a Plasma with Kappa Distributions for the Electron Velocity. *S. Wannawichian, D. Ruffolo, & Yu. Yu. Kartavykh.* 146, 443 (2003)

Loss Cone Precursors to Forbush Decreases and Advance Warning of Space Weather Effects. *K. Leerungnavarat, D. Ruffolo, & J. W. Bieber.* 593, 587 (2003)

Trapping of Solar Energetic Particles by the Small-Scale Topology of Solar Wind Turbulence. *D. Ruffolo, W. H. Matthaeus, & P. Chuychai.* 597, L169 (2003)

RUHL, J. See RUNYAN, M. C., et al. ACBAR: The Arcminute Cosmology Bolometer Array Receiver.

RUHL, J. E. See CRILL, B. P., et al. BOOMERANG: A Balloon-Borne Millimeter-Wave Telescope and Total Power Receiver for Mapping Anisotropy in the Cosmic Microwave Background.

See GOLDSTEIN, J. H., et al. Estimates of Cosmological Parameters Using the Cosmic Microwave Background Angular Power Spectrum of ACBAR.

Improved Measurement of the Angular Power Spectrum of Temperature Anisotropy in the Cosmic Microwave Background from Two New Analyses of BOOMERANG Observations. *J. E. Ruhl, P. A. R. Ade, J. J. Bock, J. R. Bond, J. Borrill, A. Boscaleri, C. R. Contaldi, B. P. Crill, P. de Bernardis, G. De Troia, K. Ganga, M. Giacometti, E. Hivon, V. V. Hristov, A. Iacoangeli, A. H. Jaffe, W. C. Jones, A. E. Lange, S. Masi, P. Mason, P. D. Mauskopf, A. Melchiorri, T. Montroy, C. B. Netterfield, E. Pascale, F. Piacentini, D. Pogosyan, G. Polenta, S. Prunet, & G. Romeo.* 599, 786 (2003)

RUITERKAMP, R. The Astrobiology of Nucleobases. *Z. Peeters, O. Botta, S. B. Charnley, R. Ruiterkamp, & P. Ehrenfreud.* 593, L129 (2003)

RUIZ, MARÍA TERESA. Very Large Telescope Echelle Spectrophotometry of the Planetary Nebula NGC 5307 and Temperature Variations. *María Teresa Ruiz, Antonio Peimbert, Manuel Peimbert, & César Esteban.* 595, 247 (2003)

Using Optical and Near-Infrared Photometry to Test MACHO Lens Candidates. *Ted von Hippel, Ata Sarajedini, & Maria Teresa Ruiz.* 595, 794 (2003)

See STORCHI-BERGMANN, THAISA, et al. Evolution of the Nuclear Accretion Disk Emission in NGC 1097: Getting Closer to the Black Hole.

RUIZ-LAPUENTE, P. See KNOP, R. A., et al. New Constraints on Ω_M, Ω_Λ, and w from an Independent Set of 11 High-Redshift Supernovae Observed with the *Hubble Space Telescope*.

RUNNEGAR, B. Successive Refinements in Long-Term Integrations of Planetary Orbits. *F. Varadi, B. Runnegar, & M. Ghil.* 592, 620 (2003)

RUNYAN, M. C. See BENSON, B. A., et al. Peculiar Velocity Limits from Measurements of the Spectrum of the Sunyaev-Zeldovich Effect in Six Clusters of Galaxies.

ACBAR: The Arcminute Cosmology Bolometer Array Receiver. *M. C. Runyan, P. A. R. Ade, R. S. Bhatia, J. J. Bock, M. D. Daub, J. H. Goldstein, C. V. Haynes, W. L. Holzapfel, C. L. Kuo, A. E. Lange, J. Leong, M. Lueker, M. Newcomb, J. B. Peterson, C. Reichardt, J. Ruhl, G. Sirbi, E. Torbet, C. Tucker, A. D. Turner, & D. Woolsey.* 149, 265 (2003)

See GOLDSTEIN, J. H., et al. Estimates of Cosmological Parameters Using the Cosmic Microwave Background Angular Power Spectrum of ACBAR.

RUPEN, MICHAEL. See BUTT, YOUSAF M., et al. *Chandra*/Very Large Array Follow-up of TeV J2032+4131, the Only Unidentified TeV Gamma-Ray Source.

RUPEN, MICHAEL P. See TOMSICK, JOHN A., et al. *Chandra* Detections of Two Quiescent Black Hole X-Ray Transients.

RUPEN, N. P. SN 1993J VLBI. III. The Evolution of the Radio Shell. *M. F. Bietenholz, N. Bartel, & N. P. Rupen.* 597, 374 (2003)

RUSIN, D. The Evolution of a Mass-selected Sample of Early-Type Field Galaxies. *D. Rusin, C. S. Kochanek, E. E. Falco, C. R. Keeton, B. A. McLeod, C. D. Impey, J. Lehár, J. A. Muñoz, C. Y. Peng, & H.-W. Rix.* 587, 143 (2003)

Self-similar Models for the Mass Profiles of Early-Type Lens Galaxies. *D. Rusin, C. S. Kochanek, & C. R. Keeton.* 595, 29 (2003)

RUSIN, DAVID. The Multiband Magnification Bias for Gravitational Lenses. *J. Stuart B. Wyithe, Joshua N. Winn, & David Rusin.* 583, 58 (2003)

Investigation of the Possible Third Image and Mass Models of the Gravitational Lens PMN J1632−0033. *Joshua N. Winn, David Rusin, & Christopher S. Kochanek.* 587, 80 (2003)

RUSSELL, C. T. Possible Distortion of the Interplanetary Magnetic Field by the Dust Trail of Comet 122P/de Vico. *G. H. Jones, A. Balogh, C. T. Russell, & M. K. Dougherty.* 597, L61 (2003)

RUSZKOWSKI, MATEUSZ. Eddington Limit and Radiative Transfer in Highly Inhomogeneous Atmospheres. *Mateusz Ruszkowski & Mitchell C. Begelman.* 586, 384 (2003)

RUTLEDGE, ROBERT E. A Limit on the Number of Isolated Neutron Stars Detected in the *ROSAT* Bright Source Catalogue. *Robert E. Rutledge, Derek W. Fox, Milan Bogosavljevic, & Ashish Mahabal.* 598, 458 (2003)

RUTTEN, R. G. M. The Dynamics of M15: Observations of the Velocity Dispersion Profile and Fokker-Planck Models: Addendum (ApJ, 481, 267 [1997]). *J. D. Dull, H. N. Cohn, P. M. Lugger, B. W. Murphy, P. O. Seitzer, P. J. Callanan, R. G. M. Rutten, & P. A. Charles.* 585, 598 (2003) (Orig. paper in 481, 267 (1997))

RUZMAIKIN, A. Photospheric Sources and Brightening of the Internetwork Chromosphere. *A. C. Cadavid, J. K. Lawrence, T. E. Berger, & A. Ruzmaikin.* 586, 1409 (2003)

Influence of Photospheric Magnetic Fields and Dynamics on Chromospheric K-Line Emission. *J. K. Lawrence, A. C. Cadavid, D. Miccolis, T. E. Berger, & A. Ruzmaikin.* 597, 1178 (2003)

RYAN, E. The Optical Light Curves of XTE J2123−058. III. The Mass of the Binary Components and the Structure of the Quiescent Accretion Disk. *T. Shahbaz, C. Zurita, J. Casares, G. Dubus, P. A. Charles, R. Mark Wagner, & E. Ryan.* 585, 443 (2003)

RYAN, J. M. See ATKINS, R., et al. The High-Energy Gamma-Ray Fluence and Energy Spectrum of GRB 970417A from Observations with Milagrito.

See FALCONE, A., et al. Observation of GeV Solar Energetic Particles from the 1997 November 6 Event Using Milagrito.

See ATKINS, R., et al. Observation of TeV Gamma Rays from the Crab Nebula with Milagro Using a New Background Rejection Technique.

RYAN, PATRICK. ι Cassiopeiae: Orbit, Masses, and Photometry from Adaptive Optics Imaging in the *I* and *H* Bands. *Jack Drummond, Scott Milster, Patrick Ryan, & Lewis C. Roberts, Jr.* 585, 1007 (2003)

RYAN, SEAN G. See AOKI, WAKO, et al. Europium Isotope Ratios in *s*-Process Element-enhanced Metal-poor Stars: A New Probe of the ^{151}Sm Branching.

RYBICKI, GEORGE. Bondi Accretion and the Problem of the Missing Isolated Neutron Stars. *Rosalba Perna, Ramesh Narayan, George Rybicki, Luigi Stella, & Aldo Treves.* 594, 936 (2003)

RYBICKI, GEORGE B. A New Kinetic Equation for Compton Scattering. *George B. Rybicki.* 584, 528 (2003)

RYDE, FELIX. Search for Relativistic Curvature Effects in Gamma-Ray Burst Pulses. *Dan Kocevski, Felix Ryde, & Edison Liang.* 596, 389 (2003)

RYKOFF, E. S. See SMITH, D. A., et al. ROTSE-III Observations of the Early Afterglow from GRB 030329.

RYU, DONGSU. Two-dimensional Axisymmetric Collapse of Thermally Unstable Primordial Clouds. *Chang Hyun Baek, Hyesung Kang, & Dongsu Ryu.* 584, 675 (2003)

The Effect of Cosmic-Ray Diffusion on the Parker Instability. *Dongsu Ryu, Jongsoo Kim, Seung Soo Hong, & T. W. Jones.* 589, 338 (2003)

Cosmological Shock Waves and Their Role in the Large-Scale Structure of the Universe. *Dongsu Ryu, Hyesung Kang, Eric Hallman, & T. W. Jones.* 593, 599 (2003)

Numerical Study of Compressible Magnetohydrodynamic Turbulence in Two Dimensions. *Hyesook Lee, Dongsu Ryu, Jongsoo Kim, T. W. Jones, & Dinshaw Balsara.* 594, 627 (2003)

SAANUM, OYVIND. See COLLEY, WESLEY N., et al. Around-the-Clock Observations of the Q9057+561A,B Gravitationally Lensed Quasar. II. Results for the Second Observing Season.

SAATHOFF, G. See SAVIN, D. W., et al. Dielectronic Recombination of the Fe XXI and Fe XXII via $N = 2 \rightarrow N' = 2$ Core Excitations.

SAAVIK FORD, K. E. Detections of OH toward the Extreme Carbon Star IRC +10216. *K. E. Saavik Ford, David A. Neufeld, Paul F. Goldsmith, & Gary J. Melnick.* 589, 430 (2003)

SABBI, E. Accurate Mass Ratio and Heating Effects in the Dual-Line Millisecond Binary Pulsar in NGC 6397. *F. R. Ferraro, E. Sabbi, R. Gratton, A. Possenti, N. D'Amico, A. Bragaglia, & F. Camilo.* 584, L13 (2003)

The Complex Hα Line Profile of the Bright Companion to PSR J1740−5340 in NGC 6397. *E. Sabbi, R. Gratton, F. R. Ferraro, A. Bragaglia, A. Possenti, N. D'Amico, & F. Camilo.* 589, L41 (2003)

The Puzzling Dynamical Status of the Core of the Globular Cluster NGC 6752. *F. R. Ferraro, A. Possenti, E. Sabbi, P. Lagani, R. T. Rood, N. D'Amico, & L. Origlia.* 595, 179 (2003)

SABBI, ELENA. The Helium White Dwarf Orbiting the Millisecond Pulsar in the Halo of the Globular Cluster NGC 6752. *Francesco R. Ferraro, Andrea Possenti, Elena Sabbi, & Nichi D'Amico.* 596, L211 (2003)

SABRA, BASSEM M. Emission and Absorption in the M87 LINER. *Bassem M. Sabra, Joseph C. Shields, Luis C. Ho, Aaron J. Barth, & Alexei V. Filippenko.* 584, 164 (2003)

The Nature of the Ultraviolet/X-Ray Absorber in PG 2302+029. *Bassem M. Sabra, Fred Hamann, Buell T. Jannuzi, Ian M. George, & Joseph C. Shields.* 590, 66 (2003)

SACKETT, P. D. See FIELDS, DALE L., et al. High-Precision Limb-Darkening Measurement of a K3 Giant Using Microlensing.

SACKMANN, I.-JULIANA. Our Sun. IV. The Standard Model and Helioseismology: Consequences of Uncertainties in Input Physics and in Observed Solar Parameters. *Arnold I. Boothroyd & I.-Juliana Sackmann.* 583, 1004 (2003)

Our Sun. V. A Bright Young Sun Consistent with Helioseismology and Warm Temperatures on Ancient Earth and Mars. *I.-Juliana Sackmann & Arnold I. Boothroyd.* 583, 1024 (2003)

SADAKANE, K. See BÖTTCHER, M., et al. Coordinated Multiwavelength Observations of BL Lacertae in 2000.

SADOYAN, A. A. Gravitational Radiation from Pulsating White Dwarfs. *M. Benacquista, D. M. Sedrakian, M. V. Hairapetyan, K. M. Shahabasyan, & A. A. Sadoyan.* 596, L223 (2003)

SADUN, A. C. See BÖTTCHER, M., et al. Coordinated Multiwavelength Observations of BL Lacertae in 2000.

SAFI-HARB, S. *Chandra* Detection of a Pulsar Wind Nebula Associated with Supernova Remnant 3C 396. *C. M. Olbert, J. W. Keohane, K. A. Arnaud, K. K. Dyer, S. P. Reynolds, & S. Safi-Harb.* 592, L45 (2003)

SAFI-HARB, SAMAR. New Constraints on the Energetics, Progenitor Mass, and Age of the Supernova Remnant G292.0+1.8 Containing PSR J1124−5916. *Marjorie Gonzalez & Samar Safi-Harb.* 583, L91 (2003)

Chandra Detection of the High Magnetic Field Radio Pulsar J1119−6127 in the Supernova Remnant G292.2−0.5. *Marjorie Gonzalez & Samar Safi-Harb.* 591, L143 (2003)

SAGAR, RAM. Clear Evidence for Intranight Optical Variability in Radio-quiet Quasars. *Gopal-Krishna, C. S. Stalin, Ram Sagar, & Paul J. Wiita.* 586, L25 (2003)

SAGE, LESLIE J. The Cool Interstellar Medium in S0 Galaxies. I. A Survey of Molecular Gas. *Gary A. Welch & Leslie J. Sage.* 584, 260 (2003)

SAHA, A. The Cepheid Distance to NGC 5236 (M83) with the ESO Very Large Telescope. *Frank Thim, G. A. Tammann, A. Saha, A. Dolphin, Allan Sandage, E. Tolstoy, & Lukas Labhardt.* 590, 256 (2003)

SAHA, ABHIJIT. Deep *Hubble Space Telescope* Imaging of IC 1613. II. The Star Formation History. *Evan D. Skillman, Eline Tolstoy, Andrew A. Cole, Andrew E. Dolphin, Abhijit Saha, J. S. Gallagher, R. C. Dohm-Palmer, & Mario Mateo.* 596, 253 (2003)

SAHA, ABI. See PRITZL, BARTON J., et al. Anomalous Evolution of the Dwarf Galaxy HIPASS J1321−31.

SAHAI, R. An Icy, Bipolar Proto–Planetary Nebula with Knotty Jets: IRAS 22036+5306. *R. Sahai, A. Zijlstra, C. Sánchez Contreras, & M. Morris.* 586, L81 (2003)

SAHAI, RAGHVENDRA. Shaping Proto–Planetary and Young Planetary Nebulae with Collimated Fast Winds. *Chin-Fei Lee & Raghvendra Sahai.* 586, 319 (2003)

X-Ray Emission from the Pre–Planetary Nebula Henize 3-1475. *Raghvendra Sahai, Joel H. Kastner, Adam Frank, Mark Morris, & Eric G. Blackman.* 599, L87 (2003)

SAHAYANATHAN, S. A Continuous Injection Plasma Model for the X-Ray/Radio Knots in Kiloparsec-Scale Jets of Active Galactic Nuclei. *S. Sahayanathan, R. Misra, A. K. Kembhavi, & C. L. Kaul.* 588, L77 (2003)

SAHNOW, D. J. See WAKKER, B. P., et al. The *Far Ultraviolet Spectroscopic Explorer* Survey of O VI Absorption in and near the Galaxy.

SAHU, K. C. See FIELDS, DALE L., et al. High-Precision Limb-Darkening Measurement of a K3 Giant Using Microlensing.

SAHU, KAILASH C. Studying the Galactic Bulge through the Spectroscopy of Microlensed Sources. II. Observations. *Stephen R. Kane & Kailash C. Sahu.* 582, 743 (2003)

Near-Field Microlensing and Its Effects on Stellar Transit Observations by *Kepler*. *Kailash C. Sahu & Ronald L. Gilliland.* 584, 1042 (2003)

SAIA, MALINDA. Doppler Modulation of X-Ray Lines in Cygnus X-3. *Michael J. Stark & Malinda Saia.* 587, L101 (2003)

SAIJO, MOTOYUKI. One-armed Spiral Instability in Differentially Rotating Stars. *Motoyuki Saijo, Thomas W. Baumgarte, & Stuart L. Shapiro.* 595, 352 (2003)

SAINT-JACQUES, D. See GOTO, MIWA, et al. Carbon Isotope Ratio in $^{12}CO/^{13}CO$ toward Local Molecular Clouds with Near-Infrared High-Resolution Spectroscopy of Vibrational Transition Bands.

SAINT-JACQUES, D. J. See GOTO, MIWA, et al. Spatially Resolved 3 Micron Spectroscopy of IRAS 22272+5435: Formation and Evolution of Aliphatic Hydrocarbon Dust in Proto–Planetary Nebulae.

SAINTON, G. See KNOP, R. A., et al. New Constraints on Ω_M, Ω_Λ, and w from an Independent Set of 11 High-Redshift Supernovae Observed with the *Hubble Space Telescope*.

SAITO, MASAO. Molecular Outflow Search in the ρ Ophiuchi A and B2 Regions. *Takeshi Kamazaki, Masao Saito, Naomi Hirano, Tomofumi Umemoto, & Ryohei Kawabe.* 584, 357 (2003)

$H^{13}CO^+$ and CH_3OH Line Observations of Prestellar Dense Cores in the TMC-1C Region. II. Internal Structure. *Shigehisa Takakuwa, Takeshi Kamazaki, Masao Saito, & Naomi Hirano.* 584, 818 (2003)

SAITO, SHUJI. See KAMEGAI, KAZUHISA, et al. Distribution of the C I Emission in the ρ Ophiuchi Dark Cloud.

SAITO, T. See AMENOMORI, M., et al. Multi-TeV Gamma-Ray Flares from Markarian 421 in 2000 and 2001 Observed with the Tibet Air Shower Array.

SAITO, TO. See SUMI, T., et al. Microlensing Optical Depth toward the Galactic Bulge from Microlensing Observations during 2000 with Difference Image Analysis.

SAITO, Y. See SUMI, T., et al. Microlensing Optical Depth toward the Galactic Bulge from Microlensing Observations during 2000 with Difference Image Analysis.

SAITO, YOSHIHIKO. See IYE, MASANORI, et al. ERO R1 in the Field of Cl 0939+4713: Evidence for an S0-Like Galaxy at $z \sim 1.5$.

SÁIZ, A. Conservation Laws in Smooth Particle Hydrodynamics: The DEVA Code. *A. Serna, R. Domínguez-Tenreiro, & A. Sáiz.* 597, 878 (2003)

SAKAI, J. I. Formation of a Sporadic Plasma Jet from a Disrupting Magnetic Flux Tube. *J. I. Sakai, K. Nishi, & I. V. Sokolov.* 584, 1095 (2003)

SAKAI, NOBUYUKI. General Relativistic Electromagnetism and Particle Acceleration in Pulsar Polar Cap. *Nobuyuki Sakai & Shinpei Shibata.* 584, 427 (2003)

SAKAI, TAKESHI. See KAMEGAI, KAZUHISA, et al. Distribution of the C I Emission in the ρ Ophiuchi Dark Cloud.

SAKAJIRI, TAKUMA. Analysis of the Temperature and Emission Measure of Solar Coronal Arcades and Test of a Scaling Law of Flare/Arcade Loop Length: Erratum (ApJ, 579, L45 [2002]). *Tetsuya T. Yamamoto, Daikou Shiota, Takuma Sakajiri, Sachiko Akiyama, Hiroaki Isobe, & Kazunari Shibata.* 592, L107 (2003) (Orig. paper in 579, L45 (2002))

SAKAMOTO, SEIICHI. Small-Scale Structure of Low-Density Gas in a Dark Cloud Envelope: Kinematic Evidence for Phase Transition? *Seiichi Sakamoto & Kazuyoshi Sunada.* 594, 340 (2003)

See GOTO, MIWA, et al. Carbon Isotope Ratio in $^{12}CO/^{13}CO$ toward Local Molecular Clouds with Near-Infrared High-Resolution Spectroscopy of Vibrational Transition Bands.

SAKAMOTO, T. See KAWABATA, K. S., et al. On the Spectrum and Spectropolarimetry of Type Ic Hypernova SN 2003dh/GRB 030329.

See CREW, G. B., et al. *HETE-2* Localization and Observation of the Bright, X-Ray–rich Gamma-Ray Burst GRB 021211.

SAKAMOTO, TSUYOSHI. Kinematics of Tidal Debris from ω Centauri's Progenitor Galaxy. *Arihiro Mizutani, Masashi Chiba, & Tsuyoshi Sakamoto.* 589, L89 (2003)

SAKANO, M. OH (1720 MHz) Masers and Mixed-Morphology Supernova Remnants. *F. Yusef-Zadeh, M. Wardle, J. Rho, & M. Sakano.* 585, 319 (2003)

SAKAO, TARO. See NAGATA, SHIN'ICHI, et al. Spatial and Temporal Properties of Hot and Cool Coronal Loops.

SAKATA, M. See AMENOMORI, M., et al. Multi-TeV Gamma-Ray Flares from Markarian 421 in 2000 and 2001 Observed with the Tibet Air Shower Array.

SAKHIBULLIN, NAIL. See COLLEY, WESLEY N., et al. Around-the-Clock Observations of the Q9057+561A,B Gravitationally Lensed Quasar. II. Results for the Second Observing Season.

SAKO, MASAO. Resolving the Effects of Resonant X-Ray Line Scattering in Centaurus X-3 with *Chandra*. *Patrick S. Wojdowski, Duane A. Liedahl, Masao Sako, Steven M. Kahn, & Frederik Paerels.* 582, 959 (2003)

Carbon-Nitrogen-Oxygen Line Radiation and the X-Ray Bowen Fluorescence Mechanism in Optically Thick, Highly Ionized Media. *Masao Sako.* 594, 1108 (2003)

Can a Dusty Warm Absorber Model Reproduce the Soft X-Ray Spectra of MCG −6-30-15 and Markarian 766? *Masao Sako, Steven M. Kahn, Graziella Branduardi-Raymont, Jelle S. Kaastra, Albert C. Brinkman, Mathew J. Page, Ehud Behar, Frits Paerels, Ali Kinkhabwala, Duane A. Liedahl, & Jan Willem den Herder.* 596, 114 (2003)

See WATANABE, SHIN, et al. Detection of a Fully Resolved Compton Shoulder of the Iron Kα Line in the *Chandra* X-Ray Spectrum of GX 301-2.

A Long Look at NGC 3783 with the *XMM-Newton* Reflection Grating Spectrometer. *Ehud Behar, Andrew P. Rasmussen, Alexander J. Blustin, Masao Sako, Steven M. Kahn, Jelle S. Kaastra, Graziella Branduardi-Raymont, & Katrien C. Steenbrugge.* 598, 232 (2003)

SAKO, SHIGEYUKI. K3-50A: An Ultracompact H II Region Ionized by a Massive Stellar Cluster. *Yoshiko K. Okamoto, Hirokazu Kataza, Takuya Yamashita, Takashi Miyata, Shigeyuki Sako, Shinya Takubo, Mitsuhiko Honda, & Takashi Onaka.* 584, 368 (2003)

Detection of Crystalline Silicates around the T Tauri Star Hen 3-600A. *Mitsuhiko Honda, Hirokazu Kataza, Yoshiko K. Okamoto, Takashi Miyata, Takuya Yamashita, Shigeyuki Sako, Shinya Takubo, & Takashi Onaka.* 585, L59 (2003)

SAKO, T. See WATANABE, K., et al. Solar Neutron Event in Association with a Large Solar Flare on 2000 November 24.

SAKURAI, TAKASHI. Spectroscopic Studies of the Solar Corona. IV. Physical Properties of Coronal Structure. *Jagdev Singh, Kiyoshi Ichimoto, Takashi Sakurai, & S. Muneer.* 585, 516 (2003)

SAKURAZAWA, K. See ENOMOTO, R., et al. Search for TeV Gamma Rays from SN 1987A in 2001.

SALAMA, F. See CLAYTON, GEOFFREY C., et al. The Role of Polycyclic Aromatic Hydrocarbons in Ultraviolet Extinction. I. Probing Small Molecular Polycyclic Aromatic Hydrocarbons.

SALAMA, FARID. Time-dependent Density Functional Theory Calculations of Large Compact Polycyclic Aromatic Hydrocarbon Cations: Implications for the Diffuse Interstellar Bands. *Jennifer L. Weisman, Timothy J. Lee, Farid Salama, & Martin Head-Gordon.* 587, 256 (2003)

SALAMANCA, I. M. Black Hole Masses in Three Seyfert Galaxies. *C. A. Onken, B. M. Peterson, M. Dietrich, A. Robinson, & I. M. Salamanca.* 585, 121 (2003)

SALARIS, M. The Distance to the Large Magellanic Cloud Cluster NGC 1866 and the Surrounding Field. *M. Salaris, S. Percival, E. Brocato, G. Raimondo, & A. R. Walker.* 588, 801 (2003)

SALARIS, MAURIZIO. First Full Evolutionary Computation of the Helium Flash-induced Mixing in Population II Stars. *Santi Cassisi, Helmut Schlattl, Maurizio Salaris, & Achim Weiss.* 582, L43 (2003)

The Initial Helium Content of Galactic Globular Cluster Stars from the *R*-Parameter: Comparison with the Cosmic Microwave Background Constraint. *Santi Cassisi, Maurizio Salaris, & Alan W. Irwin.* 588, 862 (2003)

SALEM, C. Electron Properties and Coulomb Collisions in the Solar Wind at 1 AU: *WIND* Observations. *C. Salem, D. Hubert, C. Lacombe, S. D. Bale, A. Mangeney, D. E. Larson, & R. P. Lin.* 585, 1147 (2003)

SALERNO, E. Measurement of $^3He/^4He$ in the Local Interstellar Medium: The Collisa Experiment on *Mir*. *E. Salerno, F. Bühler, P. Bochsler, H. Busemann, M. L. Bassi, G. N. Zastenker, Yu. N. Agafonov, & N. A. Eismont.* 585, 840 (2003)

SALIM, S. See GHEZ, A. M., et al. The First Measurement of Spectral Lines in a Short-Period Star Bound to the Galaxy's Central Black Hole: A Paradox of Youth.

SALIM, SAMIR. Improved Astrometry and Photometry for the Luyten Catalog. I. Bright Stars. *Andrew Gould & Samir Salim.* 582, 1001 (2003)

Improved Astrometry and Photometry for the Luyten Catalog. II. Faint Stars and Revised Catalog. *Samir Salim & Andrew Gould.* 582, 1011 (2003)

LSR 0602+3910: Discovery of a Bright Nearby L-Type Brown Dwarf. *Samir Salim, Sébastien Lépine, R. Michael Rich, & Michael M. Shara.* 586, L149 (2003)

SALIMBENI, S. See POLI, F., et al. The Evolution of the Galaxy Luminosity Function in the Rest-Frame Blue Band up to $z = 3.5$.

SALINARI, PIERO. See CLOSE, LAIRD M., et al. High-Resolution Images of Orbital Motion in the Trapezium Cluster: First Scientific Results from the Multiple Mirror Telescope Deformable Secondary Mirror Adaptive Optics System.

SALMONSON, JAY D. Perspective on Afterglows: Numerically Computed Views, Light Curves, and the Analysis of Homogeneous and Structured Jets with Lateral Expansion. *Jay D. Salmonson.* 592, 1002 (2003)

SALOGA, T. See COLAVITA, M., et al. Observations of DG Tauri with the Keck Interferometer.

SALVADOR-SOLÉ, EDUARD. On the Origin of the Inner Structure of Halos. *Alberto Manrique, Andreu Raig, Eduard Salvador-Solé, Teresa Sanchis, & José María Solanes.* 593, 26 (2003)

SALVATI, M. A *Chandra* Minisurvey of X-Ray–weak Quasars. *G. Risaliti, M. Elvis, R. Gilli, & M. Salvati.* 587, L9 (2003)

See RISALITI, G., et al. Revealing the Active Galactic Nucleus in the Superantennae through *L*-Band Spectroscopy.

SALVATO, M. See GREINER, J., et al. GRB 011121: A Collimated Outflow into Wind-blown Surroundings.

SALVIANDER, SARAH. The Black Hole–Bulge Relationship in Quasars. *Gregory A. Shields, Karl Gebhardt, Sarah Salviander, Beverley J. Wills, Bingrong Xie, Michael S. Brotherton, Juntao Yuan, & Matthias Dietrich.* 583, 124 (2003)

SAMBRUNA, R. M. The *XMM-Newton* View of the Nucleus of NGC 4261. *R. M. Sambruna, M. Gliozzi, M. Eracleous, W. N. Brandt, & R. Mushotzky.* 586, L37 (2003)

SAMBRUNA, RITA M. Long-Term Continuous Monitoring of the Broad-Line Radio Galaxies 3C 390.3 and 3C 120 with the *Rossi X-Ray Timing Explorer*. *Mario Gliozzi, Rita M. Sambruna, & Michael Eracleous.* 584, 176 (2003)

Emission-Line Diagnostics of the Central Engines of Weak-Line Radio Galaxies. *Karen T. Lewis, Michael Eracleous, & Rita M. Sambruna.* 593, 115 (2003)

SAMUELSON, F. See AKERLOF, C. W., et al. A Search for Correlations of TeV Gamma Rays with Ultra–High-Energy Cosmic Rays.

SAMUELSON, F. W. See ATKINS, R., et al. The High-Energy Gamma-Ray Fluence and Energy Spectrum of GRB 970417A from Observations with Milagrito.

See ATKINS, R., et al. Observation of TeV Gamma Rays from the Crab Nebula with Milagro Using a New Background Rejection Technique.

SÁNCHEZ ALMEIDA, J. Polarization of Photospheric Lines from Turbulent Dynamo Simulations. *J. Sánchez Almeida, T. Emonet, & F. Cattaneo.* 585, 536 (2003)

Magnetic Fields in the Quiet Sun: Observational Discrepancies and Unresolved Structure. *H. Socas-Navarro & J. Sánchez Almeida.* 593, 581 (2003)

Simultaneous Visible and Infrared Spectropolarimetry of a Solar Internetwork Region. *J. Sánchez Almeida, I. Domínguez Cerdeña, & F. Kneer.* 597, L177 (2003)

SÁNCHEZ-BLÁZQUEZ, P. Differences in Carbon and Nitrogen Abundances between Field and Cluster Early-Type Galaxies. *P. Sánchez-Blázquez, J. Gorgas, N. Cardiel, J. Cenarro, & J. J. González.* 590, L91 (2003)

SÁNCHEZ CONTRERAS, C. An Icy, Bipolar Proto–Planetary Nebula with Knotty Jets: IRAS 22036+5306. *R. Sahai, A. Zijlstra, C. Sánchez Contreras, & M. Morris.* 586, L81 (2003)

SÁNCHEZ-SALCEDO, F. J. Unstable Cold Dark Matter and the Cuspy Halo Problem in Dwarf Galaxies. *F. J. Sánchez-Salcedo.* 591, L107 (2003)

SANCHIS, TERESA. On the Origin of the Inner Structure of Halos. *Alberto Manrique, Andreu Raig, Eduard Salvador-Solé, Teresa Sanchis, & José María Solanes.* 593, 26 (2003)

SAND, DAVID J. A Unique Small-Scale Gravitational Arc in A1201. *Alastair C. Edge, Graham P. Smith, David J. Sand, Tommaso Treu, Harald Ebeling, Steven W. Allen, & Pieter G. van Dokkum.* 599, L69 (2003)

SANDAGE, ALLAN. See DINESCU, DANA I., et al. Absolute Proper Motions to $B \sim 22.5$. V. Detection of Sagittarius Dwarf Spheroidal Debris in the Direction of the Galactic Anticenter: Erratum (ApJ, 575, L67 [2002]).

The Cepheid Distance to NGC 5236 (M83) with the ESO Very Large Telescope. *Frank Thim, G. A. Tammann, A. Saha, A. Dolphin, Allan Sandage, E. Tolstoy, & Lukas Labhardt.* 590, 256 (2003)

SANDELL, GÖRAN. NGC 7538S—a High-Mass Protostar with a Massive Rotating Disk. *Göran Sandell, Melvyn Wright, & James R. Forster.* 590, L45 (2003)

SANDER, H.-G. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

SANDERS, D. B. Imaging Large-Scale Structure in the X-Ray Sky. *Yuxuan Yang, R. F. Mushotzky, A. J. Barger, L. L. Cowie, D. B. Sanders, & A. T. Steffen.* 585, L85 (2003)

Optical and Near-Infrared Imaging of the *IRAS* 1 Jy Sample of Ultraluminous Infrared Galaxies. I. The Atlas: Addendum (ApJS, 143, 277 [2002]). *D.-C. Kim, S. Veilleux, & D. B. Sanders.* 147, 221 (2003) (Orig. paper in 143, 277 (2002))

Optical and Near-Infrared Imaging of the *IRAS* 1 Jy Sample of Ultraluminous Infrared Galaxies. II. The Analysis: Addendum (ApJS, 143, 315 [2002]). *S. Veilleux, D.-C. Kim, & D. B. Sanders.* 147, 223 (2003) (Orig. paper in 143, 315 (2002))

SANDERS, DAVID B. See TANIGUCHI, YOSHIAKI, et al. The Discovery of a Very Narrow Line Star-forming Object at a Redshift of 5.66.

SANDERS, ROBERT H. Modified Newtonian Dynamics and the "Dearth of Dark Matter in Ordinary Elliptical Galaxies." *Mordehai Milgrom & Robert H. Sanders.* 599, L25 (2003)

SANDFORD, SCOTT A. Side Group Addition to the Polycyclic Aromatic Hydrocarbon Coronene by Proton Irradiation in Cosmic Ice Analogs. *Max P. Bernstein, Marla H. Moore, Jamie E. Elsila, Scott A. Sandford, Louis J. Allamandola, & Richard N. Zare.* 582, L25 (2003)

SANDQUIST, ERIC L. Cataclysmic Variable Evolution with Circumbinary Disks. *Ronald E. Taam, Eric L. Sandquist, & Guillaume Dubus.* 592, 1124 (2003)

SANIN, A. See PRICE, P. A., et al. Discovery of GRB 020405 and Its Late Red Bump.

See GREINER, J., et al. GRB 011121: A Collimated Outflow into Wind-blown Surroundings.

SANIN, ANTON B. See MITROFANOV, IGOR G., et al. Comparison of Redshift-known Gamma-Ray Bursts with the Main Groups of Bright BATSE Events.

SANKARASUBRAMANIAN, K. Properties of Magnetic and Velocity Fields in and around Solar Pores. *K. Sankarasubramanian & Thomas Rimmele.* 598, 689 (2003)

SANKRIT, RAVI. Far-Ultraviolet Spectra of a Nonradiative Shock Wave in the Cygnus Loop. *John C. Raymond, Parviz Ghavamian, Ravi Sankrit, William P. Blair, & Salvador Curiel.* 584, 770 (2003)

Far Ultraviolet Spedtroscopic Explorer Detection of Galactic O VI Emission in the Halo above the Perseus Arm. *Birgit Otte, W. Van Dyke Dixon, & Ravi Sankrit.* 586, L53 (2003)

Far-Ultraviolet and Hα Spectroscopy of SNR 0057−7226 in the Small Magellanic Cloud H II Region N66. *Charles W. Danforth, Ravi Sankrit, William P. Blair, J. Christopher Howk, & You-Hua Chu.* 586, 1179 (2003)

Optical and Far-Ultraviolet Spectroscopy of Knot D in the Vela Supernova Remnant. *Ravi Sankrit, William P. Blair, & John C. Raymond.* 589, 242 (2003)

SANO, T. Local Three-dimensional Simulations of Magnetorotational Instability in Radiation-dominated Accretion Disks. *N. J. Turner, J. M. Stone, J. H. Krolik, & T. Sano.* 593, 992 (2003)

SANO, TAKAYOSHI. A Local One-Zone Model of Magnetohydrodynamic Turbulence in Dwarf Nova Disks. *Takayoshi Sano & James M. Stone.* 586, 1297 (2003)

SANT'ANNA, M. M. See AGUILAR, A., et al. Absolute Photoionization Cross Section Measurements of O II Ions from 29.7 to 46.2 eV.

SANTOS, MÁRIO G. Small-Scale Cosmic Microwave Background Temperature and Polarization Anisotropies due to Patchy Reionization. *Mário G. Santos, Asantha Cooray, Zoltán Haiman, Lloyd Knox, & Chung-Pei Ma.* 598, 756 (2003)

SANTOS-LLEÓ, M. Nuclear Activity and Massive Star Formation in the Low-Luminosity Active Galactic Nucleus NGC 4303: *Chandra* X-Ray Observations. *E. Jiménez-Bailón, M. Santos-Lleó, J. M. Mas-Hesse, M. Guainazzi, L. Colina, M. Cerviño, & Rosa M. González Delgado.* 593, 127 (2003)

SANTOSTASI, GIOVANNI. Detectability of Gravitational Waves from SN 1987A. *Giovanni Santostasi, Warren Johnson, & Juhan Frank.* 586, 1191 (2003)

SANWAL, D. The Variable Jet of the Vela Pulsar. *G. G. Pavlov, M. A. Teter, O. Kargaltsev, & D. Sanwal.* 591, 1157 (2003)

See MUKADEM, ANJUM S., et al. Constraining the Evolution of ZZ Ceti.

SANZ-FORCADA, J. The Structure of Stellar Coronae in Active Binary Systems. *J. Sanz-Forcada, N. S. Brickhouse, & A. K. Dupree.* 145, 147 (2003)

SANZ-FORCADA, JORGE. The Coronae of AR Lacertae. *David P. Huenemoerder, Claude R. Canizares, Jeremy J. Drake, & Jorge Sanz-Forcada.* 595, 1131 (2003)

SARACCO, P. See POLI, F., et al. The Evolution of the Galaxy Luminosity Function in the Rest-Frame Blue Band up to $z = 3.5$.

See FONTANA, A., et al. The Assembly of Massive Galaxies from Near-Infrared Observations of the Hubble Deep Field–South.

SARAJEDINI, ATA. Using Optical and Near-Infrared Photometry to Test MACHO Lens Candidates. *Ted von Hippel, Ata Sarajedini, & Maria Teresa Ruiz.* 595, 794 (2003)

Sarajedini, Vicki L. See Gebhardt, Karl, et al. The DEEP Groth Strip Survey. IX. Evolution of the Fundamental Plane of Field Galaxies.
A *V*-Band Survey for Variable Galactic Nuclei in the Hubble Deep Field. *Vicki L. Sarajedini, Ronald L. Gilliland, & Christina Kasm.* 599, 173 (2003)
See Kobulnicky, Henry A., et al. The DEEP Groth Strip Survey. VII. The Metallicity of Field Galaxies at $0.26 < z < 0.82$ and the Evolution of the Luminosity-Metallicity Relation.
Sarazin, Craig L. Nonthermal Emissions from Particles Accelerated by Turbulence in Clusters of Galaxies. *Yutaka Fujita, Motokazu Takizawa, & Craig L. Sarazin.* 584, 190 (2003)
Chandra Observations of the Cooling Flow Cluster Abell 2052. *Elizabeth L. Blanton, Craig L. Sarazin, & Brian R. McNamara.* 585, 227 (2003)
Chandra Observation of the Merging Cluster A2034. *Joshua C. Kempner, Craig L. Sarazin, & Maxim Markevitch.* 593, 291 (2003)
Chandra Obsrevations of the Central Region of A3112. *Motokazu Takizawa, Craig L. Sarazin, Elizabeth L. Blanton, & Greg B. Taylor.* 595, 142 (2003)
Low-Mass X-Ray Binaries and Globular Clusters in Early-Type Galaxies. *Craig L. Sarazin, Arunav Kundu, Jimmy A. Irwin, Gregory R. Sivakoff, Elizabeth L. Blanton, & Scott W. Randall.* 595, 743 (2003)
Chandra Observations of Low-Mass X-Ray Binaries and Diffuse Gas in the Early-Type Galaxies NGC 4365 and NGC 4382 (M85). *Gregory R. Sivakoff, Craig L. Sarazin, & Jimmy A. Irwin.* 599, 218 (2003)
Sargent, A. See Colavita, M., et al. Observations of DG Tauri with the Keck Interferometer.
See Swain, Mark, et al. Interferometer Observations of Subparsec-Scale Infrared Emission in the Nucleus of NGC 4151.
Sargent, A. I. The Inner Rings of β Pictoris. *Z. Wahhaj, D. W. Koerner, M. E. Ressler, M. W. Werner, D. E. Backman, & A. I. Sargent.* 584, L27 (2003)
Near-Infrared Interferometric Measurements of Herbig Ae/Be Stars. *J. A. Eisner, B. F. Lane, R. L. Akeson, L. A. Hillenbrand, & A. I. Sargent.* 588, 360 (2003)
Sargent, Anneila I. Continuum and CO/HCO^+ Emission from the Disk around the T Tauri Star LkCa 15. *Chunhua Qi, Jacqueline E. Kessler, David W. Koerner, Anneila I. Sargent, & Geoffrey A. Blake.* 597, 986 (2003)
Sargent, W. L. W. See Fosbury, R. A. E., et al. Massive Star Formation in a Gravitationally Lensed H II Galaxy at $z = 3.357$.
Sargent, Wallace L. W. The Black Hole Masses and Host Galaxies of BL Lacertae Objects. *Aaron J. Barth, Luis C. Ho, & Wallace L. W. Sargent.* 583, 134 (2003)
A Search for "Dwarf" Seyfert Nuclei. VI. Properties of Emission-Line Nuclei in Nearby Galaxies. *Luis C. Ho, Alexei V. Filippenko, & Wallace L. W. Sargent.* 583, 159 (2003)
Metallicity of the Intergalactic Medium Using Pixel Statistics. II. The Distribution of Metals as Traced by C IV. *Joop Schaye, Anthony Aguirre, Tae-Sun Kim, Tom Theuns, Michael Rauch, & Wallace L. W. Sargent.* 596, 768 (2003)
A Measurement of the Temperature-Density Relation in the Intergalactic Medium Using a New Lyα Absorption Line Fitting Method: Erratum (ApJ, 562, 52 [2001]). *Patrick McDonald, Jordi Miralda-Escudé, Michael Rauch, Wallace L. W. Sargent, Tom A. Barlow, & Renyue Cen.* 598, 712 (2003) (Orig. paper in 562, 52 (2001))
Sari, R. See Price, P. A., et al. GRB 010921: Strong Limits on an Underlying Supernova from the *Hubble Space Telescope*.
Continued Radio Monitoring of the Gamma-Ray Burst 991208. *T. J. Galama, D. A. Frail, R. Sari, E. Berger, G. B. Taylor, & S. R. Kulkarni.* 585, 899 (2003)
See Fox, D. W., et al. Discovery of Early Optical Emission from GRB 021211.
See Galama, T. J., et al. *Hubble Space Telescope* and Ground-based Optical and Ultraviolet Observations of GRB 010222.
See Price, P. A., et al. Discovery of GRB 020405 and Its Late Red Bump.
See Frail, D. A., et al. The Broadband Afterglow of GRB 980703.
A Study of the Afterglows of Four Gamma-Ray Bursts: Constraining the Explosion and Fireball Model. *S. A. Yost, F. A. Harrison, R. Sari, & D. A. Frail.* 597, 459 (2003)
Sari, Re'em. See Barth, Aaron J., et al. Optical Spectropolarimetry of the GRB 020813 Afterglow.
Eccentricity Evolution for Planets in Gaseous Disks. *Peter Goldreich & Re'em Sari.* 585, 1024 (2003)
Jets in Gamma-Ray Bursts: Tests and Predictions for the Structured Jet Model. *Rosalba Perna, Re'em Sari, & Dale Frail.* 594, 379 (2003)
Saripalli, Lakshmi. Renewed Activity in the Radio Galaxy PKS B1545−321: Twin Edge-brightened Beams within Diffuse Radio Lobes. *Lakshmi Saripalli, Ravi Subrahmanyan, & N. Udaya Shankar.* 590, 181 (2003)
Sarkissian, J. Three Binary Millisecond Pulsars in NGC 6266. *A. Possenti, N. D'Amico, R. N. Manchester, F. Camilo, A. G. Lyne, J. Sarkissian, & A. Corongiu.* 599, 475 (2003)
Sarna, Marek J. X-Ray Evidence of the Common Envelope Phase of V471 Tauri. *Jeremy J. Drake & Marek J. Sarna.* 594, L55 (2003)
Sartakov, Boris G. Laboratory Infrared Spectroscopy of Cationic Polycyclic Aromatic Hydrocarbon Molecules. *Jos Oomens, A. G. G. M. Tielens, Boris G. Sartakov, Gert von Helden, & Gerard Meijer.* 591, 968 (2003)
Sartori, Marilla J. Optical Polarization and Near-Infrared Photometry of the Proto–Planetary Nebula Henize 3-1475. *Claudia V. Rodrigues, Francisco J. Jablonski, Jane Gregorio-Hetem, Gabriel R. Hickel, & Marilla J. Sartori.* 587, 312 (2003)
Sarugaku, Y. Discovery of Dust Trail of *STARDUST* Comet Sample Return Mission Target: 81P/Wild 2. *M. Ishiguro, S. M. Kwon, Y. Sarugaku, S. Hasegawa, F. Usui, S. Nishiura, Y. Nakada, & H. Yano.* 589, L101 (2003)
Sasaki, Shin. Mass-Temperature Relation of Galaxy Clusters: Implication from the Observed Luminosity-Temperature Relation and X-Ray Temperature Function. *Mamoru Shimizu, Tetsu Kitayama, Shin Sasaki, & Tasushi Suto.* 590, 197 (2003)
Sasaki, T. See Kawabata, K. S., et al. On the Spectrum and Spectropolarimetry of Type Ic Hypernova SN 2003dh/GRB 030329.
See Amenomori, M., et al. Multi-TeV Gamma-Ray Flares from Markarian 421 in 2000 and 2001 Observed with the Tibet Air Shower Array.
Sasao, Tetsuo. See Imai, Hiroshi, et al. The Three-dimensional Kinematics of Water Masers around the Semiregular Variable RT Virginis.
Sasseen, T. Detection of Pulsed X-Ray Emission from *XMM-Newton* Observations of PSR J0538+2817. *K. E. McGowan, J. A. Kennea, S. Zane, F. A. Córdova, M. Cropper, C. Ho, T. Sasseen, & W. T. Vestrand.* 591, 380 (2003)
Sasseen, T. P. See Mason, K. O., et al. The X-Ray Spectrum of the Seyfert 1 Galaxy Markarian 766: Dusty Warm Absorber or Relativistic Emission Lines?
Sasselov, D. D. Dispersing the Gaseous Protoplanetary Disk and Halting Type II Migration. *M. Lecar & D. D. Sasselov.* 596, L99 (2003)
See Matheson, T., et al. Photometry and Spectroscopy of GRB 03029 and Its Associated Supernova 2003dh: The First Two Months.
Sasselov, Dimitar D. Theoretical Limb Darkening for Classical Cepheids. II. Corrections for the Geometric Baade-Wesselink Method. *Massimo Marengo, Margarita Karovska, Dimitar D. Sasselov, Costas Papaliolios, John T. Armstrong, & Tyler E. Nordgren.* 589, 968 (2003)
Radiative Transfer on Perturbations in Protoplanetary Disks. *Hannah Jang-Condell & Dimitar D. Sasselov.* 593, 1116 (2003)
Limits on Eclipses of the Pre–Main-Sequence Star KH 15D in the First Half of the 20th Century. *Joshua N. Winn, Peter M. Garnavich, K. Z. Stanek, & Dimitar D. Sasselov.* 593, L121 (2003)
The New Transiting Planet OGLE-TR-56b: Orbit and Atmosphere. *Dimitar D. Sasselov.* 596, 1327 (2003)
High-Resolution Spectroscopic Follow-up of OGLE Planetary Transit Candidates in the Galactic Bulge: Two Possible Jupiter-Mass Planets and Two Blends. *Maciej Konacki, Guillermo Torres, Dimitar D. Sasselov, & Saurabh Jha.* 597, 1076 (2003)
Sastry, Ch. V. Metric Radio Observations of the Evolution of a "Halo" Coronal Mass Ejection Close to the Sun. *R. Ramesh, C. Kathiravan, & Ch. V. Sastry.* 591, L163 (2003)
Sato, Bun'ei. A Planetary Companion to the G-Type Giant Star HD 104985. *Bun'ei Sato, Hiroyasu Ando, Eiji Kambe, Yoichi Takeda, Hideyuki Izumiura, Seiji Masuda, Etsuji Watanabe, Kunio Noguchi, Setsuko Wada, Norio Okada, Hisashi Koyano, Hideo Maehara, Yuji Norimoto, Takafumi Okada, Yasuhiro Shimizu, Fumihiro Uraguchi, Kenshi Yanagisawa, & Michitoshi Yoshida.* 597, L157 (2003)
Sato, H. See Sumi, T., et al. Microlensing Optical Depth toward the Galactic Bulge from Microlensing Observations during 2000 with Difference Image Analysis.
Sato, Jun'ichi. The Topology of a Weak Lensing Field in the Neighborhood of MS 1054−03. *Jun'ichi Sato, Keiichi Umetsu, Toshifumi Futamase, & Toru Yamada.* 582, L67 (2003)
Sato, K. Explosive Nucleosynthesis Associated with Formation of Jet-induced Gamma-Ray Bursts in Massive Stars. *S. Nagataki, A. Mizuta, S. Yamada, H. Takabe, & K. Sato.* 596, 401 (2003)

SATO, KATSUHIKO. Small-Scale Clustering in Isotropic Arrival Distribution of Ultra–High-Energy Cosmic Rays and Implications for Their Source Candidates. *Hiroyuki Yoshiguchi, Shigehiro Nagataki, Sin-ya Tsubaki, & Katsuhiko Sato.* 586, 1211 (2003)

Arrival Distribution of Ultra–High-Energy Cosmic Rays: Prospects for the Future. *Hiroyuki Yoshiguchi, Shigehiro Nagataki, & Katsuhiko Sato.* 592, 311 (2003)

Anisotropic Neutrino Radiation in Rotational Core Collapse. *Kei Kotake, Shoichi Yamada, & Katsuhiko Sato.* 595, 304 (2003)

A New Method for Calculating Arrival Distribution of Ultra–High-Energy Cosmic Rays above 10^{19} eV with Modifications by the Galactic Magnetic Field. *Hiroyuki Yoshiguchi, Shigehiro Nagataki, & Katsuhiko Sato.* 596, 1044 (2003)

SATO, R. Earliest Detection of the Optical Afterglow of GRB 030329 and Its Variability. *R. Sato, N. Kawai, M. Suzuki, Y. Yatsu, J. Kataoka, R. Takagi, K. Yanagisawa, & H. Yamaoka.* 599, L9 (2003)

SATO, SHUJI. Simultaneous Optical and Near-Infrared Spectropolorimetry of Type 2 Seyfert Galaxies. *Makoto Watanabe, Tetsuya Nagata, Shuji Sato, Hidehiko Nakaya, & J. H. Hough.* 591, 714 (2003)

SATYAPAL, S. The [C II] 158 Micron Line Deficit in Ultraluminous Infrared Galaxies Revisited. *M. L. Luhman, S. Satyapal, J. Fischer, M. G. Wolfire, E. Sturm, C. C. Dudley, D. Lutz, & R. Genzel.* 594, 758 (2003)

SAUCEDO, JOSÉ. The Spatial Distribution of Fluorescent H_2 Emission near T Tauri. *José Saucedo, Nuria Calvet, Lee Hartmann, & John Raymond.* 591, 275 (2003)

SAULT, R. J. Polarization Observations in a Low Synchrotron Emission Field at 1.4 GHz. *G. Bernardi, E. Carretti, S. Cortiglioni, R. J. Sault, M. J. Kesteven, & S. Poppi.* 594, L5 (2003)

SAULT, ROBERT J. A Neutral Hydrogen Survey of the Large Magellanic Cloud: Aperture Synthesis and Multibeam Data Combined. *Sungeun Kim, Lister Staveley-Smith, Michael A. Dopita, Robert J. Sault, Youngung Lee, & You-Hua Chu.* 148, 473 (2003)

SAURER, W. Detection of Nonrandom Galaxy Orientations in X-Ray Subclusters of the Coma Cluster. *Manfred Kitzbichler & W. Saurer.* 590, L9 (2003)

SAVAGE, B. D. Highly Ionized Gas in the Galactic Halo: A *FUSE* Survey of O VI Absorption toward 22 Halo Stars. *J. Zsargó, K. R. Sembach, J. C. Howk, & B. D. Savage.* 586, 1019 (2003)

See WAKKER, B. P., et al. The *Far Ultraviolet Spectroscopic Explorer* Survey of O VI Absorption in and near the Galaxy.

Distribution and Kinematics of O VI in the Galactic Halo. *B. D. Savage, K. R. Sembach, B. P. Wakker, P. Richter, M. Meade, E. B. Jenkins, J. M. Shull, H. W. Moos, & G. Sonneborn.* 146, 125 (2003)

See SEMBACH, K. R., et al. Highly Ionized High-Velocity Gas in the Vicinity of the Galaxy.

SAVAGE, BLAIR D. Origins of the Highly Ionized Gas along the Line of Sight toward HD 116852. *Andrew J. Fox, Blair D. Savage, Kenneth R. Sembach, Dirk Fabian, Philipp Richter, David M. Meyer, James Lauroesch, & J. Christopher Howk.* 582, 793 (2003)

A *Far Ultraviolet Spectroscopic Explorer* Survey of Molecular Hydrogen in Intermediate-Velocity Clouds in the Milky Way Halo. *Philipp Richter, Bart P. Wakker, Blair D. Savage, & Kenneth R. Sembach.* 586, 230 (2003)

Ionized Gas in the First 10 Kiloparsecs of the Interstellar Galactic Halo. *J. Christopher Howk, Kenneth R. Sembach, & Blair D. Savage.* 586, 249 (2003)

SAVAGE, M. L. CO $J = 7 \rightarrow 6$ Observations of NGC 253: Cosmic-Ray–heated Warm Molecular Gas. *C. M. Bradford, T. Nikola, G. J. Stacey, A. D. Bolatto, J. M. Jackson, M. L. Savage, J. A. Davidson, & S. J. Higdon.* 586, 891 (2003)

SAVAGLIO, S. Abundances in the Neutral Interstellar Medium of I Zw 18 from *Far Ultrviolet Spectroscopic Explorer* Observations. *A. Aloisi, S. Savaglio, T. M. Heckman, C. G. Hoopes, C. Leitherer, & K. R. Sembach.* 595, 760 (2003)

SAVAGLIO, SANDRA. Heavy-Element Abundances and Dust Depletions in the Host Galaxies of Three Gamma-Ray Bursts. *Sandra Savaglio, S. Michael Fall, & Fabrizio Fiore.* 585, 638 (2003)

SAVIANE, IVO. Clues to the Evolution of the Carina Dwarf Spheroidal Galaxy from the Color Distribution of Its Red Giant Stars. *Luca Rizzi, Enrico V. Held, Gianpaolo Bertelli, & Ivo Saviane.* 589, L85 (2003)

SAVIN, D. W. Assessment of the Fluorescence and Auger Database used in Plasma Modeling. *T. W. Gorczyca, C. N. Kodituwakku, K. T. Korista, O. Zatsarinny, N. R. Badnell, E. Behar, M. H. Chen, & D. W. Savin.* 592, 636 (2003)

Dielectronic Recombination of the Fe XXI and Fe XXII via $N = 2 \rightarrow N' = 2$ Core Excitations. *D. W. Savin, S. M. Kahn, G. Gwinner, M. Grieser, R. Repnow, G. Saathoff, D. Schwalm, A. Wolf, A. Müller, S. Schippers, P. A. Závodszky, M. H. Chen, T. W. Gorczyca, O. Zatsarinny, & M. F. Gu.* 147, 421 (2003)

SAVINI, G. See BATTISTELLI, E. S., et al. Triple Experiment Spectrum of the Sunyaev-Zel'dovich Effect in the Coma Cluster: H_0.

SAWICKI, MARCIN. The Absorption and Emission Kinematics in the $z = 0.7450$ Mg II Absorber toward Q1331+17. *Sara L. Ellison, Gabriela Mallén-Ornelas, & Marcin Sawicki.* 589, 709 (2003)

SAZ PARKINSON, P. M. Long-Term X-Ray Variability of Circinus X-1. *P. M. Saz Parkinson, D. M. Tournear, E. D. Bloom, W. B. Focke, K. T. Reilly, K. S. Wood, P. S. Ray, M. T. Wolff, & Jeffrey D. Scargle.* 595, 333 (2003)

SCANNAPIECO, EVAN. The Detectability of the First Stars and Their Cluster Enrichment Signatures. *Evan Scannapieco, Raffaella Schneider, & Andrea Ferrara.* 589, 35 (2003)

On the Spatial Correlations of Lyman Break Galaxies. *Evan Scannapieco & Robert J. Thacker.* 590, L69 (2003)

The Clustering of Intergalactic Metals. *Christophe Pichon, Evan Scannapieco, Bastien Aracil, Patrick Petitjean, Dominique Aubert, Jacqueline Bergeron, & Stéphane Colombi.* 597, L97 (2003)

SCARAMUZZI, F. See CRILL, B. P., et al. BOOMERANG: A Balloon-Borne Millimeter-Wave Telescope and Total Power Receiver for Mapping Anisotropy in the Cosmic Microwave Background.

SCARDIA, M. See PRIEUR, J. L., et al. Speckle Observations of Composite Spectrum Stars. II. Differential Photometry of the Binary Components.

SCARGLE, JEFFREY D. See SAZ PARKINSON, P. M., et al. Long-Term X-Ray Variability of Circinus X-1.

See TOURNEAR, D., et al. X-Ray Bursts in Neutron Star and Black Hole Binaries from Unconvetional Stellar Aspect Experiment and *Rossi X-Ray Timing Explorer* Data: Detections and Upper Limits.

SCARLATA, C. See MARCONI, A., et al. Is There Really a Black Hole at the Center of NGC 4041? Constraints from Gas Kinematics.

SCARPA, RICCARDO. Near-Infrared Observations of BL Lacertae Host Galaxies. *C. C. Cheung, C. Megan Urry, Riccardo Scarpa, & Mauro Giavalisco.* 599, 155 (2003)

SCHAEFER, B. See SMITH, D. A., et al. ROTSE-III Observations of the Early Afterglow from GRB 030329.

See KNOP, R. A., et al. New Constraints on Ω_M, Ω_Λ, and w from an Independent Set of 11 High-Redshift Supernovae Observed with the *Hubble Space Telescope*.

SCHAEFER, BRADLEY E. Gamma-Ray Burst Hubble Diagram to $z = 4.5$. *Bradley E. Schaefer.* 583, L67 (2003)

Explaining the Gamma-Ray Burst $E_{\rm peak}$ Distribution. *Bradley E. Schaefer.* 583, L71 (2003)

Revised Analysis of the Supersoft X-Ray Phase, Helium Enrichment, and Turnoff Time in the 2000 Outburst of the Recurrent Nova CI Aquilae. *Izumi Hachisu, Mariko Kato, & Bradley E. Schaefer.* 584, 1008 (2003)

GRB 021004: A Massive Progenitor Star Surrounded by Shells. *Bradley E. Schaefer, C. L. Gerardy, P. Höflich, A. Panaitescu, R. Quimby, J. Mader, G. J. Hill, P. Kumar, J. C. Wheeler, M. Eracleous, S. Sigurdsson, P. Mészáros, B. Zhang, L. Wang, F. V. Hessman, & V. Petrosian.* 588, 387 (2003)

SCHÄFER, GREGOR. Early Quintessence in Light of the *Wilkinson Microwave Anisotropy Probe*. *Robert R. Caldwell, Michael Doran, Christian M. Müller, Gregor Schäfer, & Christof Wetterich.* 591, L75 (2003)

SCHAHMANECHE, K. See KNOP, R. A., et al. New Constraints on Ω_M, Ω_Λ, and w from an Independent Set of 11 High-Redshift Supernovae Observed with the *Hubble Space Telescope*.

SCHARF, C. A. *Chandra* Detections of SCUBA Galaxies around High-z Radio Sources. *Ian Smail, C. A. Scharf, R. J. Ivison, J. A. Stevens, R. G. Bower, & J. S. Dunlop.* 599, 86 (2003)

SCHARF, CALEB. Extended X-Ray Emission around 4C 41.17 at $z = 3.8$. *Caleb Scharf, Ian Smail, Rob Ivison, Richard Bower, Wil van Breugel, & Michiel Reuland.* 596, 105 (2003)

SCHATZ, HENDRIK. Photodisintegration-triggered Nuclear Energy Release in Superbursts. *Hendrik Schatz, Lars Bildsten, & Andrew Cumming.* 583, L87 (2003)

SCHAYE, JOOP. Metallicity of the Intergalactic Medium Using Pixel Statistics. II. The Distribution of Metals as Traced by C IV. *Joop Schaye, Anthony Aguirre, Tae-Sun Kim, Tom Theuns, Michael Rauch, & Wallace L. W. Sargent.* 596, 768 (2003)

Mapping the Cosmic Web with Lyα Emission. *Steven R. Furlanetto, Joop Schaye, Volker Springel, & Lars Hernquist.* 599, L1 (2003)

SCHECHTER, PAUL L. The Mean Number of Extra Microimage Pairs for Macrolensed Quasars. *Jonathan Granot, Paul L. Schechter, & Joachim Wambsganss.* 583, 575 (2003)

Microlensing of Relativistic Knots in the Quasar HE 1104−1805 AB. *Paul L. Schechter, A. Udalski, M. Szymański, M. Kubiak, G. Pietrzyński, I. Soszyński, P. Woźniak, K. Żebruń, O. Szewczyk, & Ł. Wyrzykowski.* 584, 657 (2003)

External Shear in Quadruply Imaged Lens Systems. *Gilbert P. Holder & Paul L. Schechter.* 589, 688 (2003)

Mass and Dust in the Disk of a Spiral Lens Galaxy. *Joshua N. Winn, Patrick B. Hall, & Paul L. Schechter.* 597, 672 (2003)

SCHENK, A. KATRIN. Saturation of the r-Mode Instability. *Phil Arras, Eanna E. Flanagan, Sharon M. Morsink, A. Katrin Schenk, Saul A. Teukolsky, & Ira Wasserman.* 591, 1129 (2003)

SCHERRER, P. H. Optimal Masks for Solar g-Mode Detection. *R. Wachter, J. Schou, A. G. Kosovichev, & P. H. Scherrer.* 588, 1199 (2003)

SCHIAVON, R. P. A Multiwavelength Approach to the Star Formation Rate Estimation in Galaxies at Intermediate Redshifts. *N. Cardiel, D. Elbaz, R. P. Schiavon, C. N. A. Willmer, D. C. Koo, A. C. Phillips, & J. Gallego.* 584, 76 (2003)

SCHIEDER, R. [C I] 492 GHz Mapping Observations of the High-Latitude Translucent Cloud MCLD 123.5+24.9. *F. Bensch, U. Leuenhagen, J. Stutzki, & R. Schieder.* 591, 1013 (2003)

SCHILD, R. See STANEK, K. Z., et al. Spectroscopic Discovery of the Supernova 2003dh Associated with GRB 030329.

See MATHESON, T., et al. Photometry and Spectroscopy of GRB 030329 and Its Associated Supernova 2003dh: The First Two Months.

SCHILD, RUDOLPH E. See COLLEY, WESLEY N., et al. Around-the-Clock Observations of the Q0957+561A,B Gravitationally Lensed Quasar. II. Results for the Second Observing Season.

A Rapid Microlensing Event in the Q0957+561A, B Gravitational Lens System. *Wesley N. Colley & Rudolph E. Schild.* 594, 97 (2003)

SCHILKE, P. From Massive Protostars to a Giant H II Region: Submillimeter Imaging of the Galactic Ministarburst W43. *F. Motte, P. Schilke, & D. C. Lis.* 582, 277 (2003)

Detection of HCN Direct l-Type Transitions Probing Hot Molecular Gas in the Proto–Planetary Nebula CRL 618. *S. Thorwirth, F. Wyrowski, P. Schilke, K. M. Menten, S. Brünken, H. S. P. Müller, & G. Winnewisser.* 586, 338 (2003)

Physical Conditions in the Proto–Planetary Nebula CRL 618 Derived from Observations of Vibrationally Excited HC_3N. *F. Wyrowski, P. Schilke, S. Thorwirth, K. M. Menten, & G. Winnewisser.* 586, 344 (2003)

Dense Molecular Clumps in the Orion Bar Photon-dominated Region. *D. C. Lis & P. Schilke.* 597, L145 (2003)

SCHILKE, PETER. First Detection of Vibrationally Excited HNC in Space. *Peter Schilke, Claudio Comito, & Sven Thorwirth.* 582, L101 (2003)

Detection of a Second, Strong Submillimeter HCN Laser Line toward Carbon Stars. *Peter Schilke & Karl M. Menten.* 583, 446 (2003)

SCHIMINOVICH, D. Models for Evolution of Dusty and E/S0 Galaxies Seen in Multiband Surveys. *C. K. Xu, C. J. Lonsdale, D. L. Shupe, A. Franceschini, C. Martin, & D. Schiminovich.* 587, 90 (2003)

SCHINDLER, KARL. Models of Three-dimensional Flux Ropes. *Joachim Birn, Terry G. Forbes, & Karl Schindler.* 588, 578 (2003)

SCHINNERER, E. The Host Galaxies of Optically Bright Quasi-stellar Objects: Molecular Gas in $z \leq 0.1$ Palomar-Green Quasi-stellar Objects. *N. Z. Scoville, D. T. Frayer, E. Schinnerer, & M. Christopher.* 585, L105 (2003)

Further Discoveries of ^{12}CO in Low Surface Brightness Galaxies. *K. O'Neil, E. Schinnerer, & P. Hofner.* 588, 230 (2003)

The First CO Map of a Low Surface Brightness Galaxy. *K. O'Neil & E. Schinnerer.* 588, L81 (2003)

SCHINNERER, EVA. Molecular Gas and the Nuclear Star Cluster in IC 342: Sufficient Inflow for Recurring Star Formation Events? *Eva Schinnerer, Torsten Böker, & David S. Meier.* 591, L115 (2003)

SCHIPPERS, S. See SAVIN, D. W., et al. Dielectronic Recombination of the Fe XXI and Fe XXII via $N = 2 \rightarrow N' = 2$ Core Excitations.

SCHIRBER, MICHAEL. Faint Active Galactic Nuclei and the Ionizing Background. *Michael Schirber & James S. Bullock.* 584, 110 (2003)

SCHLACHTER, A. S. See AGUILAR, A., et al. Absolute Photoionization Cross Section Measurements of O II Ions from 29.7 to 46.2 eV.

SCHLATTL, HELMUT. First Full Evolutionary Computation of the Helium Flash-induced Mixing in Population II Stars. *Santi Cassisi, Helmut Schlattl, Maurizio Salaris, & Achim Weiss.* 582, L43 (2003)

SCHLEGEL, DAVID. See SZALAY, ALEXANDER S., et al. Karhunen-Loève Estimation of the Power Spectrum Parameters from the Angular Distribution of Galaxies in Early Sloan Digital Sky Survey Data.

SCHLEGEL, DAVID J. See HOGG, DAVID W., et al. The Overdensities of Galaxy Environments as a Function of Luminosity and Color.

See EISENSTEIN, DANIEL J., et al. Average Spectra of Massive Galaxies in the Sloan Digital Sky Survey.

See BLANTON, MICHAEL R., et al. The Broadband Optical Properties of Galaxies with Redshifts $0.02 < z < 0.22$.

See SCHMIDT, GARY D., et al. Magnetic White Dwarfs from the Sloan Digital Sky Survey: The First Data Release.

See PRADA, FRANCISCO, et al. Observing the Dark Matter Density Profile of Isolated Galaxies.

SCHLEGEL, E. M. *Chandra* Observation of the X-Ray Source Population of NGC 6946. *S. S. Holt, E. M. Schlegel, U. Hwang, & R. Petre.* 588, 792 (2003)

SCHLEGEL, ERIC M. *Chandra* Observations of Associates of η Carinae. I. Luminosities. *Nancy Remage Evans, Frederick D. Seward, Miriam I. Krauss, Takashi Isobe, Joy Nichols, Eric M. Schlegel, & Scott J. Wolk.* 589, 509 (2003)

A Deep *Chandra* X-Ray Observation of NGC 1637. *Stefan Immler, Q. Daniel Wang, Douglas C. Leonard, & Eric M. Schlegel.* 595, 727 (2003)

A *Chandra* Observation of The Diffuse Emission in the Face-on Spiral NGC 6946. *Eric M. Schlegel, S. S. Holt, & R. Petre.* 598, 982 (2003)

SCHLICKEISER, R. The Influence of Electron Impact Ionization in the Relativistic Pickup of Interstellar Neutrals. *R. Schlickeiser, M. Pohl, & R. Vainio.* 596, 840 (2003)

Cosmological Magnetic Field Generation by the Weibel Instability. *R. Schlickeiser & P. K. Shukla.* 599, L57 (2003)

SCHMAHL, EDWARD J. Observations of the Failed Eruption of a Filament. *Haisheng Ji, Haimin Wang, Edward J. Schmahl, Y.-J. Moon, & Yunchun Jiang.* 595, L135 (2003)

SCHMELZ, J. T. The Effect of Background Subtraction on the Temperature of EIT Coronal Loops. *J. T. Schmelz, J. E. Beene, K. Nasraoui, H. T. Blevins, P. C. H. Martens, & J. W. Cirtain.* 599, 604 (2003)

SCHMIDT, B. P. See PRICE, P. A., et al. GRB 010921: Strong Limits on an Underlying Supernova from the *Hubble Space Telescope*.

See PRICE, P. A., et al. Discovery of GRB 020405 and Its Late Red Bump.

SCHMIDT, BRIAN. See MICHAEL, ELI, et al. *Hubble Space Telescope* Observations of High-Velocity Lyα and Hα Emission from Supernova Remnant 1987A: The Structure and Development of the Reverse Shock.

SCHMIDT, BRIAN P. See TONRY, JOHN L., et al. Cosmological Results from High-z Supernovae.

SCHMIDT, G. D. A Multiwavelength Study of the High-Field Magnetic White Dwarf EUVE J0317−85.5 (=RE J0317−853). *Stéphane Vennes, G. D. Schmidt, L. Ferrario, D. J. Christian, D. T. Wickramasinghe, & A. Kawka.* 593, 1040 (2003)

SCHMIDT, GARY. See SZKODY, PAULA, et al. Two Rare Magnetic Cataclysmic Variables with Extreme Cyclotron Features Identified in the Sloan Digital Sky Survey.

SCHMIDT, GARY D. A *Hubble Space Telescope*/WFPC2 Snapshot Survey of 2MASS-selected Red QSOs. *Andrew R. Marble, Dean C. Hines, Gary D. Schmidt, Paul S. Smith, Jason A. Surace, Lee Armus, Roc M. Cutri, & Brant O. Nelson.* 590, 707 (2003)

Optical Spectropolarimetry of Quasi-stellar Objects Discovered by the Two-Micron All Sky Survey. *Paul S. Smith, Gary D. Schmidt, Dean C. Hines, & Craig B. Foltz.* 593, 676 (2003)

Magnetic White Dwarfs from the Sloan Digital Sky Survey: The First Data Release. *Gary D. Schmidt, Hugh C. Harris, James Liebert, Daniel J. Eisenstein, Scott F. Anderson, J. Brinkmann, Patrick B. Hall, Michael Harvanek, Suzanne Hawley, S. J. Kleinman, Gillian R. Knapp, Jurek Krzesinski, Don Q. Lamb, Dan Long, Jeffrey A. Munn, Eric H. Neilsen, Peter R. Newman, Atsuko Nitta, David J. Schlegel, Donald P. Schneider, Nicole M. Silvestri, J. Allyn Smith, Stephanie A. Snedden, Paula Szkody, & Dan Vanden Berk.* 595, 1101 (2003)

SCHMIDT, T. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

SCHMITT, H. R. A *Hubble Space Telescope* Survey of Extended [O III] λ5007 Emission in a Far-Infrared Selected Sample of Seyfert Galaxies:

Observations. *H. R. Schmitt, J. L. Donley, R. R. J. Antonucci, J. B. Hutchings, & A. L. Kinney.* 148, 327 (2003)

A *Hubble Space Telescope* Survey of Extended [O III] λ5007 Emission in a Far-Infrared Selected Sample of Seyfert Galaxies: Results. *H. R. Schmitt, J. L. Donley, R. R. J. Antonucci, J. B. Hutchings, A. L. Kinney, & J. E. Pringle.* 597, 768 (2003)

SCHNEIDER, D. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

SCHNEIDER, DON. See GLAZEBROOK, KARL, et al. The Sloan Digital Sky Survey: The Cosmic Spectrum and Star Formation History.

See BAHCALL, NETA A., et al. A Merged Catalog of Clusters of Galaxies from Early Sloan Digital Sky Survey Data.

SCHNEIDER, DONALD P. See SZKODY, PAULA, et al. Two Rare Magnetic Cataclysmic Variables with Extreme Cyclotron Features Identified in the Sloan Digital Sky Survey.

See GOMEZ, PERCY L., et al. Galaxy Star Formation as a Function of Environment in the Early Data Release of the Sloan Digital Sky Survey.

See BAHCALL, NETA A., et al. The Cluster Mass Function from Early Sloan Digital Sky Survey Data: Cosmological Implications.

See HOGG, DAVID W., et al. The Overdensities of Galaxy Environments as a Function of Luminosity and Color.

See EISENSTEIN, DANIEL J., et al. Average Spectra of Massive Galaxies in the Sloan Digital Sky Survey.

See HELMI, AMINA, et al. Selection of Metal-poor Giant Stars Using the Sloan Digital Sky Survey Photometric System.

Sloan Digital Sky Survey Catalog of Stars in the Draco Dwarf Spheroidal Galaxy. *Heather A. Rave, Chongshan Zhao, Heidi Jo Newberg, Brian Yanny, Donald P. Schneider, J. Brinkman, & Don Q. Lamb.* 145, 245 (2003)

See BLANTON, MICHAEL R., et al. The Galaxy Luminosity Function and Luminosity Density at Redshift $z = 0.1$.

VLT+UVES Spectroscopy of the Ca II Low-Ionization Broad Absorption Line Quasar SDSS J030000.56+004828.0. *Patrick B. Hall, Damien Hutsmékers, Scott F. Anderson, J. Brinkmann, Xiaohui Fan, Donald P. Schneider, & Donald G. York.* 593, 189 (2003)

See SCHMIDT, GARY D., et al. Magnetic White Dwarfs from the Sloan Digital Sky Survey: The First Data Release.

See NEWBERG, HEIDI JO, et al. Sagittarius Tidal Debris 90 kiloparsecs from the Galactic Center.

Multiepoch Sky Surveys and the Lifetime of Quasars. *Paul Martini & Donald P. Schneider.* 597, L109 (2003)

The Richness-dependent Cluster Correlation Function: Early Sloan Digital Sky Survey Data. *Neta A. Bahcall, Feng Dong, Lei Hao, Paul Bode, Jim Annis, James E. Gunn, & Donald P. Schneider.* 599, 814 (2003)

SCHNEIDER, M. See ATKINS, R., et al. Observation of TeV Gamma Rays from the Crab Nebula with Milagro Using a New Background Rejection Technique.

SCHNEIDER, RAFFAELLA. The Detectability of the First Stars and Their Cluster Enrichment Signatures. *Evan Scannapieco, Raffaella Schneider, & Andrea Ferrara.* 589, 35 (2003)

SCHNEIDER, S. E. Clusters of Galaxies in the Local Universe. *C. S. Kochanek, Martin White, J. Huchra, L. Macri, T. H. Jarrett, S. E. Schneider, & J. Mader.* 585, 161 (2003)

SCHNEIDER, STEPHEN E. The Contribution of H I–rich Galaxies to the Damped Lyα Absorber Population at $z = 0$. *Jessica L. Rosenberg & Stephen E. Schneider.* 585, 256 (2003)

SCHÖDEL, R. The Position of Sagittarius A*. II. Accurate Positions and Proper Motions of Stellar SiO Masers near the Galactic Center. *M. J. Reid, K. M. Menten, R. Genzel, T. Ott, R. Schödel, & A. Eckart.* 587, 208 (2003)

See GENZEL, R., et al. The Stellar Cusp around the Supermassive Black Hole in the Galactic Center.

Stellar Dynamics in the Central Arcsecond of Our Galaxy. *R. Schödel, T. Ott, R. Genzel, A. Eckart, N. Mouawad, & T. Alexander.* 596, 1015 (2003)

A Geometric Determination of the Distance to the Galactic Center. *F. Eisenhauer, R. Schödel, R. Genzel, T. Ott, M. Tecza, R. Abuter, A. Eckart, & T. Alexander.* 597, L121 (2003)

SCHOENFELDER, V. See MEREGHETTI, S., et al. *Integral* and *XMM-Newton* Observations of the Weak Gamma-Ray Burst GRB 030227.

SCHOLZ, R. D. See GREINER, J., et al. GRB 011121: A Collimated Outflow into Wind-blown Surroundings.

SCHOMMER, ROBERT. See TONRY, JOHN L., et al. Cosmological Results from High-z Supernovae.

SCHOU, J. Optimal Masks for Solar g-Mode Detection. *R. Wachter, J. Schou, A. G. Kosovichev, & P. H. Scherrer.* 588, 1199 (2003)

A Comparison of Solar p-Mode Parameters from MDI and GONG: Mode Frequencies and Structure Inversion. *S. Basu, J. Christensen-Dalsgaard, R. Howe, J. Schou, M. J. Thompson, F. Hill, & R. Komm.* 591, 432 (2003)

Wavelike Properties of Solar Supergranulation Detected in Doppler Shift Data. *J. Schou.* 596, L259 (2003)

SCHREIER, E. J. See GROGIN, N. A., et al. *Hubble Space Telescope* Imaging in the *Chandra* Deep Field–South. III. Quantitative Morphology of the 1 Million Second *Chandra* Counterparts and Comparison with the Field Population.

SCHREYER, K. NGC 2264 IRS 1: The Central Engine and Its Cavity. *K. Schreyer, B. Stecklum, H. Linz, & Th. Henning.* 599, 334 (2003)

SCHRIJVER, CAROLUS J. The Properties of Small Magnetic Regions on the Solar Surface and the Implications for the Solar Dynamo(s). *Hermance J. Hagenaar, Carolus J. Schrijver, & Alan M. Title.* 584, 1107 (2003)

A New Method to Constrain the Iron Abundance from Cooling Delays in Coronal Loops. *Markus J. Aschwanden, Carolus J. Schrijver, Amy R. Winebarger, & Harry P. Warren.* 588, L49 (2003)

Asterospheric Magnetic Fields and Winds of Cool Stars. *Carolus J. Schrijver, Marc L. DeRosa, & Alan M. Title.* 590, 493 (2003)

The Magnetic Connection between the Solar Photosphere and the Corona. *Carolus J. Schrijver & Alan M. Title.* 597, L165 (2003)

SCHROEDER, JOSH. See BAHCALL, NETA A., et al. The Cluster Mass Function from Early Sloan Digital Sky Survey Data: Cosmological Implications.

See BAHCALL, NETA A., et al. A Merged Catalog of Clusters of Galaxies from Early Sloan Digital Sky Survey Data.

SCHROEDTER, M. See HOLDER, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.

See DE LA CALLE PÉREZ, I., et al. Search for High-Energy Gamma Rays from an X-Ray–Selected Blazar Sample.

SCHUBERT, G. A Three-dimensional Spherical Nonlinear Interface Dynamo. *K. Zhang, K. H. Chan, J. Zou, X. Liao, & G. Schubert.* 596, 663 (2003)

SCHUBERT, GERALD. Nonaxisymmetric Instabilities of a Toroidal Magnetic Field in a Rotating Sphere. *Keke Zhang, Xinhao Liao, & Gerald Schubert.* 585, 1124 (2003)

SCHUBNELL, M. S. See AKERLOF, C. W., et al. A Search for Correlations of TeV Gamma Rays with Ultra–High-Energy Cosmic Rays.

SCHÜSSLER, M. Why Solar Magnetic Flux Concentrations Are Bright in Molecular Bands. *M. Schüssler, S. Shelyag, S. Berdyugina, A. Vögler, & S. K. Solanki.* 597, L173 (2003)

SCHUH, S. L. See GREEN, E. M., et al. Discovery of a New Class of Pulsating Stars: Gravity-Mode Pulsators among Subdwarf B Stars.

SCHULZ, A. E. Surveys of Galaxy Clusters with the Sunyaev-Zel'dovich Effect. *A. E. Schulz & Martin White.* 586, 723 (2003)

SCHULZ, N. S. *Chandra* Observations of Variable Embedded X-Ray Sources in Orion. I. Resolving the Orion Trapezium: Erratum (ApJ, 549, 441 [2001]). *N. S. Schulz, C. Canizares, D. Huenemoerder, J. H. Kastner, S. C. Taylor, & E. J. Bergstrom.* 586, 1441 (2003) (Orig. paper in 549, 441 (2001))

XMM-Newton Observations of PSR B1823−13: An Asymmetric Synchrotron Nebula around a Vela-like Pulsar. *B. M. Gaensler, N. S. Schulz, V. M. Kaspi, M. J. Pivovaroff, & W. E. Becker.* 588, 441 (2003)

Discrete X-Ray Signatures of a Photoionized Plasma above the Accretion Disk of the Neutron Star EXO 0748−676. *M. A. Jimenez-Garate, N. S. Schulz, & H. L. Marshall.* 590, 432 (2003)

X-Ray Modeling of Very Young Early-Type Stars in the Orion Trapezium: Signatures of Magnetically Confined Plasmas and Evolutionary Implications. *N. S. Schulz, C. Canizares, D. Huenemoerder, & K. Tibbets.* 595, 365 (2003)

SCHULZ, NORBERT S. Refining *Chandra*/ACIS Subpixel Event Repositioning Using a Backside-illuminated CCD Model. *Jingqiang Li, Joel H. Kastner, Gregory Y. Prigozhin, & Norbert S. Schulz.* 590, 586 (2003)

SCHURCH, N. See MARKOWITZ, A., et al. X-Ray Fluctuation Power Spectral Densities of Seyfert 1 Galaxies.

SCHURCH, N. J. *XMM-Newton* Observation of Broad Iron Kα Emission from Seyfert 1.9 Galaxy MCG −5-23-16. *G. C. Dewangan, R. E. Griffiths, & N. J. Schurch.* 592, 52 (2003)

SCHWADRON, N. A. Solar Wind Scaling Law. *N. A. Schwadron & D. J. McComas.* 599, 1395 (2003)

SCHWALM, D. See SAVIN, D. W., et al. Dielectronic Recombination of the Fe XXI and Fe XXII via $N = 2 \rightarrow N' = 2$ Core Excitations.

SCHWARTZ, D. See MARKEVITCH, M., et al. *Chandra* Spectra of the Soft X-Ray Diffuse Background.

SCHWARTZ, D. A. An X-Ray Jet Discovered by *Chandra* in the $z = 4.3$ Radio-selected Quasar GB 1508+5714. *Aneta Siemiginowska, Randall K. Smith, Thomas L. Aldcroft, D. A. Schwartz, Frederik Paerels, & Andreea O. Petric.* 598, L15 (2003)

SCHWARTZ, R. A. See LIN, R. P., et al. *RHESSI* Observations of Particle Acceleration and Energy Release in an Intense Solar Gamma-Ray Line Flare.

First Gamma-Ray Images of a Solar Flare. *G. J. Hurford, R. A. Schwartz, S. Krucker, R. P. Lin, D. M. Smith, & N. Vilmer.* 595, L77 (2003)

High-Resolution Spectroscopy of Gamma-Ray Lines from the X-Class Solar Flare of 2002 July 23. *D. M. Smith, G. H. Share, R. J. Murphy, R. A. Schwartz, A. Y. Shih, & R. P. Lin.* 595, L81 (2003)

Physical Implications of *RHESSI* Neutron-Capture Line Measurements. *R. J. Murphy, G. H. Share, X.-M. Hua, R. P. Lin, D. M. Smith, & R. A. Schwartz.* 595, L93 (2003)

SCHWARTZ, R. D. See BÖTTCHER, M., et al. Coordinated Multiwavelength Observations of BL Lacertae in 2000.

SCHWARTZ, RICHARD A. See SHARE, GERALD H., et al. High-Resolution Observation of the Solar Positron-Electron Annihilation Line.

Directionality of Flare-accelerated α-Particles at the Sun. *Gerald H. Share, Ronald J. Murphy, David M. Smith, Robert P. Lin, Brian R. Dennis, & Richard A. Schwartz.* 595, L89 (2003)

Electron Bremsstrahlung Hard X-Ray Spectra, Electron Distributions, and Energetics in the 2002 July 23 Solar Flare. *Gordon D. Holman, Linhui Sui, Richard A. Schwartz, & A. Gordon Emslie.* 595, L97 (2003)

An Explanation for Non–Power-Law Behavior in the Hard X-Ray Spectrum of the 2002 July 23 Solar Flare. *Eduard P. Kontar, John C. Brown, A. Gordon Emslie, Richard A. Schwartz, David M. Smith, & R. Calum Alexander.* 595, L123 (2003)

Regularized Electron Flux Spectra in the 2002 July 23 Solar Flare. *Michele Piana, Anna Maria Massone, Eduard P. Kontar, A. Gordon Emslie, John C. Brown, & Richard A. Schwartz.* 595, L127 (2003)

SCHWARZ, R. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

See GREINER, J., et al. GRB 011121: A Collimated Outflow into Wind-blown Surroundings.

SCHWEIKER, H. See MATHESON, T., et al. Photometry and Spectroscopy of GRB 03029 and Its Associated Supernova 2003dh: The First Two Months.

SCHWEITZER, A. The Molecular Line Opacity of MgH in Cool Stellar Atmospheres. *P. F. Weck, A. Schweitzer, P. C. Stancil, P. H. Hauschildt, & K. Kirby.* 582, 1059 (2003)

The Molecular Continuum Opacity of ^{24}MgH in Cool Stellar Atmospheres. *P. F. Weck, A. Schweitzer, P. C. Stancil, P. H. Hauschildt, & K. Kirby.* 584, 459 (2003)

SCHWEIZER, FRANCOIS. The Time-variable Ultraluminous X-Ray Sources of "The Antennae." *G. Fabbiano, A. Zezas, A. R. King, T. J. Ponman, A. Rots, & Francois Schweizer.* 584, L5 (2003)

A Variable Ultraluminous Supersoft X-Ray Source in "The Antennae": Stellar-Mass Black Hole or White Dwarf? *G. Fabbiano, A. R. King, A. Zezas, T. J. Ponman, A. Rots, & François Schweizer.* 591, 843 (2003)

SCIORTINO, S. *Chandra* X-Ray Observation of the Orion Nebula Cluster. I. Detection, Identification, and Determination of X-Ray Luminosities. *E. Flaccomio, F. Damiani, G. Micela, S. Sciortino, F. R. Harnden, Jr., S. S. Murray, & S. J. Wolk.* 582, 382 (2003)

Chandra X-Ray Observation of the Orion Nebula Cluster. II. Relationship between X-Ray Activity Indicators and Stellar Parameters. *E. Flaccomio, F. Damiani, G. Micela, S. Sciortino, F. R. Harnden, Jr., S. S. Murray, & S. J. Wolk.* 582, 398 (2003)

Chandra Observations of the Young Open Cluster NGC 2516. *F. Damiani, E. Flaccomio, G. Micela, S. Sciortino, F. R. Harnden, Jr., S. S. Murray, S. J. Wolk, & R. D. Jeffries.* 588, 1009 (2003)

SCOCCIMARRO, ROMÁN. Higher Order Moments of the Cosmic Shear and Other Spin-2 Fields. *Matias Zaldarriaga & Román Scoccimarro.* 584, 559 (2003)

Inferring the Linear Power Spectrum from the Lyα Forest. *Matias Zaldarriaga, Román Scoccimarro, & Lam Hui.* 590, 1 (2003)

See SZALAY, ALEXANDER S., et al. Karhunen-Loève Estimation of the Power Spectrum Parameters from the Angular Distribution of Galaxies in Early Sloan Digital Sky Survey Data.

SCOTT, D. See CHAPMAN, S. C., et al. The Properties of Microjansky Radio Sources in the Hubble Deep Field–North, SSA 13, and SSA 22 Fields.

SCOVILLE, N. Z. The Host Galaxies of Optically Bright Quasi-stellar Objects: Molecular Gas in $z \leq 0.1$ Palomar-Green Quasi-stellar Objects. *N. Z. Scoville, D. T. Frayer, E. Schinnerer, & M. Christopher.* 585, L105 (2003)

Hubble Space Telescope Pao and 1.9 Micron Imaging of Sagittarius A West. *N. Z. Scoville, S. R. Stolovy, M. Rieke, M. Christopher, & F. Yusef-Zadeh.* 594, 294 (2003)

SCOVILLE, NICHOLAS. The Mass Function of Supergiant Molecular Complexes and Implications for Forming Young Massive Star Clusters in the Antennae (NGC 4038/4039). *Christine D. Wilson, Nicholas Scoville, Suzanne C. Madden, & Vassilis Charmandaris.* 599, 1049 (2003)

SCOVILLE, NICHOLAS Z. Barred Galaxies at $z > 0.7$: NICMOS Hubble Deep Field–North Observations. *Kartik Sheth, Michael W. Regan, Nicholas Z. Scoville, & Linda E. Strubbe.* 592, L13 (2003)

SCRANTON, RYAN. See SZALAY, ALEXANDER S., et al. Karhunen-Loève Estimation of the Power Spectrum Parameters from the Angular Distribution of Galaxies in Early Sloan Digital Sky Survey Data.

See BUDAVÁRI, TAMÁS, et al. Angular Clustering with Photometric Redshifts in the Sloan Digital Sky Survey: Bimodality in the Clustering Properties of Galaxies.

SEAGER, S. The EXPLORE Project. I. A Deep Search for Transiting Extrasolar Planets. *G. Mallén-Ornelas, S. Seager, H. K. C. Yee, D. Minniti, Michael D. Gladders, G. M. Mallén-Fullerton, & T. M. Brown.* 582, 1123 (2003)

A Unique Solution of Planet and Star Parameters from an Extrasolar Planet Transit Light Curve. *S. Seager & G. Mallén-Ornelas.* 585, 1038 (2003)

SEAGER, SARA. "Weather" Variability of Close-in Extrasolar Giant Planets. *Kristen Menou, James Y-K. Cho, Sara Seager, & Bradley M. S. Hansen.* 587, L113 (2003)

The Changing Face of the Extrasolar Giant Planet HD 209458b. *Kristen Menou, James Y-K. Cho, Bradley M. S. Hansen, & Sara Seager.* 587, L117 (2003)

Source of Atomic Hydrogen in the Atmosphere of HD 209458b. *Mao-Chang Liang, Christopher D. Parkinson, Anthony Y. T. Lee, Yuk L. Yung, & Sara Seager.* 596, L247 (2003)

Infrared Observations During the Secondary Eclipse of HD 209458b. II. Strong Limits on the Infrared Spectrum near 2.2 Microns. *L. Jeremy Richardson, Drake Deming, & Sara Seager.* 597, 581 (2003)

Scattered Light from Close-in Extrasolar Planets: Prospects of Detection with the *MOST* Satellite. *Daniel Green, Jaymie Matthews, Sara Seager, & Rainer Kuschnig.* 597, 590 (2003)

Detection of Close-In Extrasolar Giant Planets Using the Fourier-Kelvin Stellar Interferometer. *William C. Danchi, Drake Deming, Marc J. Kuchner, & Sara Seager.* 597, L57 (2003)

SEAQUIST, E. R. A Multitransition CO Study of the Antennae Galaxies NGC 4038/9. *Ming Zhu, E. R. Seaquist, & Nario Kuno.* 588, 243 (2003)

CO Molecular Gas in Infrared-luminous Galaxies. *Lihong Yao, E. R. Seaquist, Nario Kuno, & Loretta Dunne.* 588, 771 (2003)

CO Molecular Gas in Infrared Luminous Galaxies: Erratum (ApJ, 588, 771 [2003]). *Lihong Yao, E. R. Seaquist, Nario Kuno, & Loretta Dunne.* 597, 1271 (2003) (Orig. paper in 588, 771 (2003))

SEATON, DANIEL B. Evolving Active Region Loops Observed With the *Transition Region and Coronal Explorer*. I. Observations. *Amy R. Winebarger, Harry P. Warren, & Daniel B. Seaton.* 593, 1164 (2003)

SEBASTIANELLI, A. Detection of Photospheric Impacts from Chromospheric Impulsive Events. *P. F. Moretti, F. Berrilli, A. Sebastianelli, C. Briand, & E. Pietropaolo.* 589, L109 (2003)

SEDRAKIAN, D. M. Gravitational Radiation from Pulsating White Dwarfs. *M. Benacquista, D. M. Sedrakian, M. V. Hairapetyan, K. M. Shahabasyan, & A. A. Sadoyan.* 596, L223 (2003)

SEDYSHEV, P. V. See REIFARTH, R., et al. Stellar Neutron Capture on Promethium: Implications for the s-Process Neutron Density.

SEENU, N. Test Particle Acceleration in Three-dimensional Magnetohydrodynamic Turbulence. *P. Dmitruk, W. H. Matthaeus, N. Seenu, & M. R. Brown.* 597, L81 (2003)

SEFAKO, RAMOTHOLO R. Constraints on Pulsar Magnetospheric and Wind Parameters for the Compact Nebulae of Vela and PSR B1706−44. *Ramotholo R. Sefako & Ocker C. de Jager.* 593, 1013 (2003)

SEGGEWISS, W. See MARCHENKO, S. V., et al. The Unusual 2001 Periastron Passage in the "Clockwork" Colliding-Wind Binary WR 140.

SEIRADAKIS, JOHN H. See HAWLEY, SUZANNE L., et al. Multiwavelength Observations of Flares on AD Leonis.

SEITENZAHL, I. R. See GREEN, E. M., et al. Discovery of a New Class of Pulsating Stars: Gravity-Mode Pulsators among Subdwarf B Stars.

SEITZ, STELLA. The Wendelstein Calar Alto Pixellensing Project (WeCAPP): First MACHO Candidates. *Arno Riffeser, Jürgen Fliri, Ralf Bender, Stella Seitz, & Claus A. Gössl.* 599, L17 (2003)

SEITZER, P. O. The Dynamics of M15: Observations of the Velocity Dispersion Profile and Fokker-Planck Models: Addendum (ApJ, 481, 267 [1997]). *J. D. Dull, H. N. Cohn, P. M. Lugger, B. W. Murphy, P. O. Seitzer, P. J. Callanan, R. G. M. Rutten, & P. A. Charles.* 585, 598 (2003) (Orig. paper in 481, 267 (1997))

SEITZER, PATRICK. A Scattered Light Echo around SN 1993J in M81. *Ji-Feng Liu, Joel N. Bregman, & Patrick Seitzer.* 582, 919 (2003)

SEKANINA, ZDENEK. Peculiar Pair of Distant Periodic Comets C/2002 A1 and C/2002 A2 (LINEAR). *Zdenek Sekanina, Paul W. Chodas, Miloš Tichý, Jana Tichá, & Michal Kočer.* 591, L67 (2003)

Erosion Model for the Sungrazing Comets Observed with the *Solar and Heliospheric Observatory*. *Zdenek Sekanina.* 597, 1237 (2003)

SEKIGUCHI, K. See KAWABATA, K. S., et al. On the Spectrum and Spectropolarimetry of Type Ic Hypernova SN 2003dh/GRB 030329.

See MUKADEM, ANJUM S., et al. Constraining the Evolution of ZZ Ceti.

SEKIGUCHI, M. See SHIMASAKU, K., et al. Subaru Deep Survey. IV. Discovery of a Large-Scale Structure at Redshift $\simeq$5.

See SUMI, T., et al. Microlensing Optical Depth toward the Galactic Bulge from Microlensing Observations during 2000 with Difference Image Analysis.

SEKIGUCHI, MAKI. See OUCHI, MASAMI, et al. Subaru Deep Survey. II. Luminosity Functions and Clustering Properties of Lyα Emitters at z = 4.86 in the Subaru Deep Field.

See KOMIYAMA, YUTAKA, et al. Discovery of Latent Star Formation in the Extended H I Gas around the Local Group Dwarf Irregular Galaxy NGC 6822.

See HAMANA, TAKASHI, et al. Cosmic Shear Statistics in the Suprime-Cam 2.1 Square Degree Field: Constraints on Ω_m and Σ_8.

SEKIMOTO, YUTARO. See KAMEGAI, KAZUHISA, et al. Distribution of the C I Emission in the ρ Ophiuchi Dark Cloud.

SELLGREN, K. Really Cool Stars and the Star Formation History at the Galactic Center. *R. D. Blum, Solange V. Ramírez, K. Sellgren, & K. Olsen.* 597, 323 (2003)

Spatial Separation of the 3.29 Micron Emission Feature and Associated 2 Micron Continuum in NGC 7023. *Jin H. An & K. Sellgren.* 599, 311 (2003)

SELLWOOD, J. A. Bars and Dark Matter Halo Cores. *J. A. Sellwood.* 587, 638 (2003)

SELSIS, F. Atmospheric Loss of Exoplanets Resulting from Stellar X-Ray and Extreme-Ultraviolet Heating. *H. Lammer, F. Selsis, I. Ribas, E. F. Guinan, S. J. Bauer, & W. W. Weiss.* 598, L121 (2003)

SEMBACH, K. R. Highly Ionized Gas in the Galactic Halo: A *FUSE* Survey of O VI Absorption toward 22 Halo Stars. *J. Zsargó, K. R. Sembach, J. C. Howk, & B. D. Savage.* 586, 1019 (2003)

See WAKKER, B. P., et al. The *Far Ultraviolet Spectroscopic Explorer* Survey of O VI Absorption in and near the Galaxy.

See SAVAGE, B. D., et al. Distribution and Kinematics of O VI in the Galactic Halo.

Highly Ionized High-Velocity Gas in the Vicinity of the Galaxy. *K. R. Sembach, B. P. Wakker, B. D. Savage, P. Richter, M. Meade, J. M. Shull, E. B. Jenkins, G. Sonneborn, & H. W. Moos.* 146, 165 (2003)

Far Ultraviolet Spectroscopic Explorer Snapshot Survey of O VI Variability in the Winds of 66 OB-Type Stars. *N. Lehner, A. W. Fullerton, D. Massa, K. R. Sembach, & J. Zsargó.* 589, 526 (2003)

Probing O VI Emission in the Halos of Edge-On Spiral Galaxies. *B. Otte, E. M. Murphy, J. C. Howk, Q. D. Wang, W. R. Oegerle, & K. R. Sembach.* 591, 821 (2003)

Abundances in the Neutral Interstellar Medium of I Zw 18 from *Far Ultrviolet Spectroscopic Explorer* Observations. *A. Aloisi, S. Savaglio, T. M. Heckman, C. G. Hoopes, C. Leitherer, & K. R. Sembach.* 595, 760 (2003)

SEMBACH, KENNETH R. Origins of the Highly Ionized Gas along the Line of Sight toward HD 116852. *Andrew J. Fox, Blair D. Savage, Kenneth R. Sembach, Dirk Fabian, Philipp Richter, David M. Meyer, James Lauroesch, & J. Christopher Howk.* 582, 793 (2003)

A *Far Ultraviolet Spectroscopic Explorer* Survey of Molecular Hydrogen in Intermediate-Velocity Clouds in the Milky Way Halo. *Philipp Richter, Bart P. Wakker, Blair D. Savage, & Kenneth R. Sembach.* 586, 230 (2003)

Ionized Gas in the First 10 Kiloparsecs of the Interstellar Galactic Halo. *J. Christopher Howk, Kenneth R. Sembach, & Blair D. Savage.* 586, 249 (2003)

Chandra Detection of Local O II Heα Absorption along the Sight Line toward 3C 273. *Taotao Fang, Kenneth R. Sembach, & Claude R. Canizares.* 586, L49 (2003)

Deuterium toward Two Milky Way Disk Stars: Probing Extended Sight Lines with the *Far Ultraviolet Spectroscopic Explorer*. *Charles G. Hoopes, Kenneth R. Sembach, Guillaume Hébrard, H. Warren Moos, & David C. Knauth.* 586, 1094 (2003)

On the Origin of the High-Ionization Intermediate-Velocity Gas toward HD 14434. *David C. Knauth, J. Christopher Howk, Kenneth R. Sembach, James T. Lauroesch, & David M. Meyer.* 592, 964 (2003)

An Intrinsic Absorption Complex toward RX J1230.8+0115: Geometry and Photoionization Conditions. *Rajib Ganguly, Joseph Masiero, Jane C. Charlton, & Kenneth R. Sembach.* 598, 922 (2003)

SEMBROSKI, G. See AKERLOF, C. W., et al. A Search for Correlations of TeV Gamma Rays with Ultra–High-Energy Cosmic Rays.

SEMBROSKI, G. H. See HOLDER, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.

See HALL, T. A., et al. Search for TeV Emissions from Pulsars in Binary Systems.

See DE LA CALLE PÉREZ, I., et al. Search for High-Energy Gamma Rays from an X-Ray–Selected Blazar Sample.

SEMIKOZ, V. B. Large Mixing Angle Oscillations as a Probe of the Deep Solar Interior. *C. Burgess, N. S. Dzhalilov, M. Maltoni, T. I. Rashba, V. B. Semikoz, M. A. Tórtola, & J. W. F. Valle.* 588, L65 (2003)

SEN, A. A. Observational Constraints on Cardassian Expansion. *S. Sen & A. A. Sen.* 588, 1 (2003)

SEN, S. Observational Constraints on Cardassian Expansion. *S. Sen & A. A. Sen.* 588, 1 (2003)

SENDYK, MAREK. Drifting Subpulses in PSR B0943+10. *Janusz A. Gil & Marek Sendyk.* 585, 453 (2003)

SENGUPTA, SUJAN. Explaining the Observed Polarization from Brown Dwarfs by Single Dust Scattering. *Sujan Sengupta.* 585, L155 (2003)

SEO, HEE-JONG. Probing Dark Energy with Baryonic Acoustic Oscillations from Future Large Galaxy Redshift Surveys. *Hee-Jong Seo & Daniel J. Eisenstein.* 598, 720 (2003)

SEPINSKY, J. F. Intrinsic Properties of the Young Stellar Object SU Aurigae. *L. E. DeWarf, J. F. Sepinsky, E. F. Guinan, I. Ribas, & I. Nadalin.* 590, 357 (2003)

SERABYN, E. See COLAVITA, M., et al. Observations of DG Tauri with the Keck Interferometer.

See SWAIN, MARK, et al. Interferometer Observations of Subparsec-Scale Infrared Emission in the Nucleus of NGC 4151.

SERNA, A. Conservation Laws in Smooth Particle Hydrodynamics: The DEVA Code. *A. Serna, R. Domínguez-Tenreiro, & A. Sáiz.* 597, 878 (2003)

SERRANO, ÁNGEL. K_s Number Counts in the Groth and Coppi Fields. *David Cristóbal-Hornillos, Marc Balcells, Mercedes Prieto, Rafael Guzmán, Jesús Gallego, Nicolás Cardiel, Ángel Serrano, & Roser Pelló.* 595, 71 (2003)

SERRA-RICART, MIQUEL. See COLLEY, WESLEY N., et al. Around-the-Clock Observations of the Q9057+561A,B Gravitationally Lensed Quasar. II. Results for the Second Observing Season.

SETIA GUNAWAN, DIAH Y. A. A Westerbork Synthesis Radio Telescope 1400 and 350 MHz Continuum Survey of the Cygnus OB2 Association, in Search of Hot Massive Stars. *Diah Y. A. Setia Gunawan, A. Ger de Bruyn, Karel A. van der Hucht, & Peredur M. Williams.* 149, 123 (2003)

SEVERINO, GIUSEPPE. How Well Can We Infer the Properties of the Solar Acoustic Sources? *Stuart M. Jefferies, Giuseppe Severino, Pier-Francesco Moretti, Maurizio Oliviero, & Cynthia Giebink.* 596, L117 (2003)

SEWARD, F. D. A Compact Central Object in the Supernova Remnant Kesteven 79. *F. D. Seward, P. O. Slane, R. K. Smith, & M. Sun.* 584, 414 (2003)

SEWARD, FREDERICK D. *Chandra* Observations of Associates of η Carinae. I. Luminosities. *Nancy Remage Evans, Frederick D. Seward, Miriam I. Krauss, Takashi Isobe, Joy Nichols, Eric M. Schlegel, & Scott J. Wolk.* 589, 509 (2003)

SEWILO, M. Resolution of Distance Ambiguities of Inner Galaxy Massive Star Formation Regions. I. *C. Watson, E. Araya, M. Sewilo, E. Churchwell, P. Hofner, & S. Kurtz.* 587, 714 (2003)

SFORNA, D. See CRILL, B. P., et al. BOOMERANG: A Balloon-Borne Millimeter-Wave Telescope and Total Power Receiver for Mapping Anisotropy in the Cosmic Microwave Background.

SHAH, R. Y. Discovery of Multiple Molecular Shells in the Outer Envelope of IRC +10216. *D. Fong, M. Meixner, & R. Y. Shah.* 582, L39 (2003)

A Survey of Acetic Acid toward Hot Molecular Cores. *A. Remijan, L. E. Snyder, D. N. Friedel, S.-Y. Liu, & R. Y. Shah.* 590, 314 (2003)

SHAHABASYAN, K. M. Gravitational Radiation from Pulsating White Dwarfs. *M. Benacquista, D. M. Sedrakian, M. V. Hairapetyan, K. M. Shahabasyan, & A. A. Sadoyan.* 596, L223 (2003)

SHAHBAZ, T. Evidence for Optical Flares in Quiescent Soft X-Ray Transients. *C. Zurita, J. Casares, & T. Shahbaz.* 582, 369 (2003)

The Optical Light Curves of XTE J2123−058. III. The Mass of the Binary Components and the Structure of the Quiescent Accretion Disk. *T. Shahbaz, C. Zurita, J. Casares, G. Dubus, P. A. Charles, R. Mark Wagner, & E. Ryan.* 585, 443 (2003)

SHAKED, S. See MCDOWELL, J. C., et al. *Chandra* Observations of Extended X-Ray Emission in Arp 220.

SHAKLAN, S. B. See TEEGARDEN, B. J., et al. Discovery of a New Nearby Star.

SHANG, ZHAOHUI. The Baldwin Effect and Black Hole Accretion: A Spectral Principal Component Analysis of a Complete Quasar Sample. *Zhaohui Shang, Beverley J. Wills, Edward L. Robinson, D. Wills, Ari Laor, Bingrong Xie, & Juntao Yuan.* 586, 52 (2003)

SHAO, M. See COLAVITA, M., et al. Observations of DG Tauri with the Keck Interferometer.

See SWAIN, MARK, et al. Interferometer Observations of Subparsec-Scale Infrared Emission in the Nucleus of NGC 4151.

SHAPIRO, I. I. Very Long Baseline Interferometry Imaging of the RS Canum Venaticorum Binary Star System HR 5110. *R. R. Ransom, N. Bartel, M. F. Bietenholz, M. I. Ratner, D. E. Lebach, I. I. Shapiro, & J.-F. Lestrade.* 587, 390 (2003)

SHAPIRO, IRWIN I. Rapid Brightness Fluctuations in Q0957+561A,B: Microlensing or Seeing? *Wesley N. Colley, Irwin I. Shapiro, Jennifer Pegg, Edwin L. Turner, Tomislav Kundić, Karen Loomis, N. C. Hastings, & Russet McMillan.* 588, 711 (2003)

SHAPIRO, STUART L. Effects of Differential Rotation on the Maximum Mass of Neutron Stars. *Nicholas D. Lyford, Thomas W. Baumgarte, & Stuart L. Shapiro.* 583, 410 (2003)

General Relativistic Magnetohydrodynamics for the Numerical Construction of Dynamical Spacetimes. *Thomas W. Baumgarte & Stuart L. Shapiro.* 585, 921 (2003)

Collapse of a Magnetized Star to a Black Hole. *Thomas W. Baumgarte & Stuart L. Shapiro.* 585, 930 (2003)

One-armed Spiral Instability in Differentially Rotating Stars. *Motoyuki Saijo, Thomas W. Baumgarte, & Stuart L. Shapiro.* 595, 352 (2003)

Magnetic Braking and Viscous Damping of Differential Rotation in Cylindrical Stars. *James N. Cook, Stuart L. Shapiro, & Branson C. Stephens.* 599, 1272 (2003)

SHAPLEY, A. See WEBB, T. M., et al. The Canada–United Kingdom Deep Submillimeter Survey. V. The Submillimeter Properties of Lyman Break Galaxies.

SHAPLEY, ALICE E. Galaxies and Intergalactic Matter at Redshift $z \sim 3$: Overview. *Kurt L. Adelberger, Charles C. Steidel, Alice E. Shapley, & Max Pettini.* 584, 45 (2003)

Rest-Frame Ultraviolet Spectra of $z \sim 3$ Lyman Break Galaxies. *Alice E. Shapley, Charles C. Steidel, Max Pettini, & Kurt L. Adelberger.* 588, 65 (2003)

Hα Spectroscopy of Galaxies at $z > 2$: Kinematics and Star Formation. *Dawn K. Erb, Alice E. Shapley, Charles C. Steidel, Max Pettini, Kurt L. Adelberger, Matthew P. Hunt, Alan F. M. Moorwood, & Jean-Gabriel Cuby.* 591, 101 (2003)

Lyman Break Galaxies at Redshift $z \sim 3$: Survey Description and Full Data Set. *Charles C. Steidel, Kurt L. Adelberger, Alice E. Shapley, Max Pettini, Mark Dickenson, & Mauro Giavalisco.* 592, 728 (2003)

SHAPOSHNIKOV, NICKOLAI. The Bursting Behavior of 4U 1728−34: The Parameters of a Neutron Star and the Geometry of a Neutron Star–Disk System. *Nickolai Shaposhnikov, Lev Titarchuk, & Frank Haberl.* 593, L35 (2003)

SHARA, MICHAEL M. Discovery of an Ultracool Subdwarf: LSR 1425+7102, the First Star with Spectral Type sdM8.0. *Sébastien Lépine, Michael M. Shara, & R. Michael Rich.* 585, L69 (2003)

LSR 0602+3910: Discovery of a Bright Nearby L-Type Brown Dwarf. *Samir Salim, Sébastien Lépine, R. Michael Rich, & Michael M. Shara.* 586, L149 (2003)

White Dwarf Sequences in Dense Star Clusters. *Jarrod R. Hurley & Michael M. Shara.* 589, 179 (2003)

LSR 1610−0040: The First Early-Type L Subdwarf. *Sébastien Lépine, R. Michael Rich, & Michael M. Shara.* 591, L49 (2003)

A Far-Ultraviolet Survey of 47 Tucanae. II. The Long-Period Cataclysmic Variable AKO 9. *Christian Knigge, David R. Zurek, Michael M. Shara, Knox S. Long, & Ronald L. Gilliland.* 599, 1320 (2003)

SHARE, G. H. See LIN, R. P., et al. *RHESSI* Observations of Particle Acceleration and Energy Release in an Intense Solar Gamma-Ray Line Flare.

High-Resolution Spectroscopy of Gamma-Ray Lines from the X-Class Solar Flare of 2002 July 23. *D. M. Smith, G. H. Share, R. J. Murphy, R. A. Schwartz, A. Y. Shih, & R. P. Lin.* 595, L81 (2003)

Physical Implications of *RHESSI* Neutron-Capture Line Measurements. *R. J. Murphy, G. H. Share, X.-M. Hua, R. P. Lin, D. M. Smith, & R. A. Schwartz.* 595, L93 (2003)

SHARE, GERALD H. High-Resolution Observation of the Solar Positron-Electron Annihilation Line. *Gerald H. Share, Ronald J. Murphy, Jeffrey G. Skibo, David M. Smith, Hugh S. Hudson, Robert P. Lin, Albert Y. Shih, Brian R. Dennis, Richard A. Schwartz, & Benzion Kozlovsky.* 595, L85 (2003)

Directionality of Flare-accelerated α-Particles at the Sun. *Gerald H. Share, Ronald J. Murphy, David M. Smith, Robert P. Lin, Brian R. Dennis, & Richard A. Schwartz.* 595, L89 (2003)

SHARMA, PRATEEK. Transition from Collisionless to Collisional Magnetorotational Instability. *Prateek Sharma, Gregory W. Hammett, & Eliot Quataert.* 596, 1121 (2003)

SHARP, C. M. Line Intensities and Molecular Opacities of the FeH $F\ ^4\Delta_i$–$X\ ^4\Delta_i$ Transition. *M. Dulick, C. W. Bauschlicher, Jr., Adam Burrows, C. M. Sharp, R. S. Ram, & Peter Bernath.* 594, 651 (2003)

SHARPEE, BRIAN. Introducing EMILI: Computer-Aided Emission Line Identification. *Brian Sharpee, Robert Williams, Jack A. Baldwin, & Peter A. M. van Hoof.* 149, 155 (2003)

SHAW, RICHARD A. Space Telescope Imaging Spectrograph Slitless Observations of Small Magellanic Cloud Planetary Nebulae: A Study on Morphology, Emission-Line Intensity, and Evolution. *Letizia Stanghellini, Richard A. Shaw, Bruce Balick, Max Mutchler, J. Chris Blades, & Eva Villaver.* 596, 997 (2003)

Post–Asymptotic Giant Branch Evolution in the Large Megellanic Cloud: A Study of the Central Stars of Planetary Nebulae. *Eva Villaver, Letizia Stanghellini, & Richard A. Shaw.* 597, 298 (2003)

Hubble Space Telescope Observations of Three Very Young Star Clusters in the Small Magellanic Cloud. *Letizia Stanghellini, Eva Villaver, Richard A. Shaw, & Max Mutchler.* 598, 1000 (2003)

SHEELEY, N. R., JR. The Solar Wind and Its Magnetic Sources at Sunspot Maximum. *Y.-M. Wang & N. R. Sheeley, Jr.* 587, 818 (2003)

Solar Wind Speed and Temperature outside 10 AU and the Termination Shock. *Y. C. Whang, L. F. Burlaga, Y.-M. Wang, & N. R. Sheeley, Jr.* 589, 635 (2003)

On the Fluctuating Component of the Sun's Large-Scale Magnetic Field. *Y.-M. Wang & N. R. Sheeley, Jr.* 590, 1111 (2003)

Modeling the Sun's Large-Scale Magnetic Field during the Maunder Minimum. *Y.-M. Wang & N. R. Sheeley, Jr.* 591, 1248 (2003)

Linear Polarization Measurements of Chromospheric Emission Lines. *N. R. Sheeley, Jr., & C. U. Keller.* 594, 1085 (2003)

On the Topological Evolution of the Coronal Magnetic Field During the Solar Cycle. *Y. M. Wang & N. R. Sheeley, Jr.* 599, 1404 (2003)

SHEFFER, YARON. Further Evidence for Chemical Fractionation from Ultraviolet Observations of Carbon Monoxide. *S. R. Federman, David L. Lambert, Yaron Sheffer, Jason A. Cardelli, B.-G. Andersson, Ewine F. van Dishoeck, & J. Zsargó.* 591, 986 (2003)

FUSE Measurements of Rydberg Bands of Interstellar CO between 925 and 1150 Å. *Yaron Sheffer, S. R. Federman, & B.-G. Andersson.* 597, L29 (2003)

SHEINIS, A. I. Keck Spectroscopy of Four Quasi-stellar Object Host Galaxies. *J. S. Miller & A. I. Sheinis.* 588, L9 (2003)

SHELTON, R. L. Surprisingly Little O VI Emission Arises in the Local Bubble. *R. L. Shelton.* 589, 261 (2003)

SHELYAG, S. Why Solar Magnetic Flux Concentrations Are Bright in Molecular Bands. *M. Schüssler, S. Shelyag, S. Berdyugina, A. Vögler, & S. K. Solanki.* 597, L173 (2003)

SHEMATOVICH, V. I. A Coupled Dynamical and Chemical Model of Starless Cores of Magnetized Molecular Clouds. II. Chemical Differentiation. *V. I. Shematovich, D. S. Wiebe, B. M. Shustov, & Zhi-Yun Li.* 588, 894 (2003)

SHEN, B. See ATKINS, R., et al. The High-Energy Gamma-Ray Fluence and Energy Spectrum of GRB 970417A from Observations with Milagrito.

See FALCONE, A., et al. Observation of GeV Solar Energetic Particles from the 1997 November 6 Event Using Milagrito.

See ATKINS, R., et al. Observation of TeV Gamma Rays from the Crab Nebula with Milagro Using a New Background Rejection Technique.

SHEN, JASON JIUN-SAN. ^{138}L Anomaly in the Early Solar System. *Jason Jiun-San Shen & Typhoon Lee.* 596, L109 (2003)

SHENOY, S. S. A Test Case for the Organic Refractory Model of Interstellar Dust. *S. S. Shenoy, D. C. B. Whittet, J. E. Chiar, A. J. Adamson, W. G. Roberge, & G. E. Hassel.* 591, 962 (2003)

SHEPHERD, D. S. Clustered Star Formation in W75 N. *D. S. Shepherd, L. Testi, & D. P. Stark.* 584, 882 (2003)

SHEPHERD, M. C. See MASON, B. S., et al. The Anisotropy of the Microwave Background to $l = 3500$: Deep Field Observatons with the Cosmic Background Imager.

See PEARSON, T. J., et al. The Anisotropy of the Microwave Background to $l = 3500$: Mosaic Observations with the Cosmic Background Imager.

See MYERS, S. T., et al. A Fast Gridded Method for the Estimation of the Power Spectrum of the Cosmic Microwave Background from Interferometer Data with Application to the Cosmic Background Imager.

See SIEVERS, J. L., et al. Cosmological Parameters from Cosmic Background Imager Observations and Comparisons with BOOMERANG, DASI, and MAXIMA.

SHERIDAN, P. M. Rotational Rest Frequencies for FeN ($X\ ^2\Delta_i$) and Revised Spectroscopic Constants for FeC ($X\ ^3\Delta_i$). *P. M. Sheridan, L. M. Ziurys, & T. Hirano.* 593, L141 (2003)

SHETH, KARTIK. Central Mass Concentration and Bar Dissolution in Nearby Spiral Galaxies. *Mousumi Das, Peter J. Teuben, Stuart N. Vogel, Michael W. Regan, Kartik Sheth, Andrew I. Harris, & William H. Jefferys.* 582, 190 (2003)

The BIMA Survey of Nearby Galaxies (BIMA SONG). II. The CO Data. *Tamara T. Helfer, Michele D. Thornley, Michael W. Regan, Tony Wong, Kartik Sheth, Stuart N. Vogel, Leo Blitz, & Douglas C.-J. Bock.* 145, 259 (2003)

Barred Galaxies at $z > 0.7$: NICMOS Hubble Deep Field–North Observations. *Kartik Sheth, Michael W. Regan, Nicholas Z. Scoville, & Linda E. Strubbe.* 592, L13 (2003)

Millimeter Observations of GRB 030329: Continued Evidence for a Two-Component Jet. *Kartik Sheth, Dale A. Frail, Stephen White, Mousumi Das, Frank Bertoldi, Fabian Walter, Shri R. Kulkarni, & Edo Berger.* 595, L33 (2003)

SHETH, RAVI. See GOMEZ, PERCY L., et al. Galaxy Star Formation as a Function of Environment in the Early Data Release of the Sloan Digital Sky Survey.

SHETH, RAVI K. See SZALAY, ALEXANDER S., et al. Karhunen-Loève Estimation of the Power Spectrum Parameters from the Angular Distribution of Galaxies in Early Sloan Digital Sky Survey Data.

SHETRONE, MATTHEW D. Carbon Isotopes in Globular Clusters Down to the Bump in the Luminosity Function. *Matthew D. Shetrone.* 585, L45 (2003)

SHI, Y. Can the Age Discrepancies of Neutron Stars Be Circumvented by an Accretion-assisted Torque? *Y. Shi & R. X. Xu.* 596, L75 (2003)

SHIBASAKI, K. Prominence Eruptions and Coronal Mass Ejection: A Statistical Study using Microwave Observations. *N. Gopalswamy, M. Shimojo, W. Lu, S. Yashiro, K. Shibasaki, & R. A. Howard.* 586, 562 (2003)

Radio and Hard X-Ray Images of High-Energy Electrons in an X-Class Solar Flare. *S. M. White, S. Krucker, K. Shibasaki, T. Yokoyama, M. Shimojo, & M. R. Kundu.* 595, L111 (2003)

SHIBATA, KATSUNORI M. See IMAI, HIROSHI, et al. The Three-dimensional Kinematics of Water Masers around the Semiregular Variable RT Virginis.

SHIBATA, KAZUNARI. Magnetic Reconnection Triggered by the Parker Instability in the Galaxy: Two-Dimensional Numerical Magnetohydrodynamic Simulations and Application to the Origin of X-Ray Gas in the Galactic Halo. *Syuniti Tanuma, Takaaki Yokoyama, Takahiro Kudoh, & Kazunari Shibata.* 582, 215 (2003)

Analysis of the Temperature and Emission Measure of Solar Coronal Arcades and Test of a Scaling Law of Flare/Arcade Loop Length: Erratum (ApJ, 579, L45 [2002]). *Tetsuya T. Yamamoto, Daikou Shiota, Takuma Sakajiri, Sachiko Akiyama, Hiroaki Isobe, & Kazunari Shibata.* 592, L107 (2003) (Orig. paper in 579, L45 (2002))

SHIBATA, M. See AMENOMORI, M., et al. Multi-TeV Gamma-Ray Flares from Markarian 421 in 2000 and 2001 Observed with the Tibet Air Shower Array.

SHIBATA, MASARU. Collapse of Rotating Supermassive Neutron Stars to Black Holes: Fully General Relativistic Simulations. *Masaru Shibata.* 595, 992 (2003)

SHIBATA, SHINPEI. General Relativistic Electromagnetism and Particle Acceleration in Pulsar Polar Cap. *Nobuyuki Sakai & Shinpei Shibata.* 584, 427 (2003)

Electrodynamics of an Outer Gap Accelerator: Formation of a Soft Power-Law Spectrum between 100 MeV and 3 GeV. *Kouichi Hirotani, Alice K. Harding, & Shinpei Shibata.* 591, 334 (2003)

SHIELDS, GREGORY A. The Black Hole–Bulge Relationship in Quasars. *Gregory A. Shields, Karl Gebhardt, Sarah Salviander, Beverley J. Wills, Bingrong Xie, Michael S. Brotherton, Juntao Yuan, & Matthias Dietrich.* 583, 124 (2003)

SHIELDS, J. C. Quasar Elemental Abundances at High Redshifts. *M. Dietrich, F. Hamann, J. C. Shields, A. Constantin, J. Heidt, K. Jäger, M. Vestergaard, & S. J. Wagner.* 589, 722 (2003)

SHIELDS, JOSEPH. See BECHTOLD, JILL, et al. *Chandra* Survey of Radio-quiet, High-Redshift Quasars.

SHIELDS, JOSEPH C. See GABEL, JACK R., et al. The Ionized Gas and Nuclear Environment in NGC 3783. II. Averaged *Hubble Space Telescope*/STIS and *Far Ultraviolet Spectroscopic Explorer* Spectra.

Emission and Absorption in the M87 LINER. *Bassem M. Sabra, Joseph C. Shields, Luis C. Ho, Aaron J. Barth, & Alexei V. Filippenko.* 584, 164 (2003)

The Nature of the Ultraviolet/X-Ray Absorber in PG 2302+029. *Bassem M. Sabra, Fred Hamann, Buell T. Jannuzi, Ian M. George, & Joseph C. Shields.* 590, 66 (2003)

See GABEL, JACK R., et al. The Ionized Gas and Nuclear Environment in NGC 3783. III. Detection of a Decreasing Radial Velocity in an Intrinsic Ultraviolet Absorber.

See NETZER, HAGAI, et al. The Ionized Gas and Nuclear Environment in NGC 3783. IV. Variability and Modeling of the 900 Kilosecond *Chandra* Spectrum.

SHIGEYAMA, TOSHIKAZU. Relics of Subluminous Supernovae in Metal-poor Stars. *Takuji Tsujimoto & Toshikazu Shigeyama.* 584, L87 (2003)

Excavation of the First Stars. *Toshikazu Shigeyama, Takuji Tsujimoto, & Yuzuru Yoshii.* 586, L57 (2003)

Accretion of Dust Grains as a Possible Origin of Metal-poor Stars with Low α/Fe Ratios. *Toshikazu Shigeyama & Takuji Tsujimoto.* 598, L47 (2003)

SHIGEYAMA, TOSHIKAZY. Star Formation History of ω Centauri Imprinted in Elemental Abundance Patterns. *Takuji Tsujimoto & Toshikazy Shigeyama.* 590, 803 (2003)

SHIH, A. Y. High-Resolution Spectroscopy of Gamma-Ray Lines from the X-Class Solar Flare of 2002 July 23. *D. M. Smith, G. H. Share, R. J. Murphy, R. A. Schwartz, A. Y. Shih, & R. P. Lin.* 595, L81 (2003)

SHIH, ALBERT Y. See SHARE, GERALD H., et al. High-Resolution Observation of the Solar Positron-Electron Annihilation Line.

SHIMA, TAKANORI. See IWAMURO, FUMIHIDE, et al. Infrared Spectroscopy of 15 Radio Galaxies at $2 < z < 2.6$.

SHIMASAKU, K. Subaru Deep Survey. IV. Discovery of a Large-Scale Structure at Redshift $\simeq 5$. *K. Shimasaku, M. Ouchi, S. Okamura, N. Kashikawa, M. Doi, H. Furusawa, M. Hamabe, T. Hayashino, K. Kawabata, M. Kimura, K. Kodaira, Y. Komiyama, Y. Matsuda, M. Miyazaki, S. Miyazaki, F. Nakata, K. Ohta, Y. Ohyama, M. Sekiguchi, Y. Shioya, H. Tamura, Y. Taniguchi, M. Yagi, T. Yamada, & N. Yasuda.* 586, L111 (2003)

SHIMASAKU, KAZUHIRO. See OUCHI, MASAMI, et al. Subaru Deep Survey. II. Luminosity Functions and Clustering Properties of Lyα Emitters at $z = 4.86$ in the Subaru Deep Field.

See KOMIYAMA, YUTAKA, et al. Discovery of Latent Star Formation in the Extended H I Gas around the Local Group Dwarf Irregular Galaxy NGC 6822.

See IYE, MASANORI, et al. ERO R1 in the Field of Cl 0939+4713: Evidence for an S0-Like Galaxy at $z \sim 1.5$.

See BLANTON, MICHAEL R., et al. The Galaxy Luminosity Function and Luminosity Density at Redshift $z = 0.1$.

See BLANTON, MICHAEL R., et al. The Broadband Optical Properties of Galaxies with Redshifts $0.02 < z < 0.22$.

See HAMANA, TAKASHI, et al. Cosmic Shear Statistics in the Suprime-Cam 2.1 Square Degree Field: Constraints on Ω_m and Σ_8.

SHIMIZU, MAMORU. Mass-Temperature Relation of Galaxy Clusters: Implication from the Observed Luminosity-Temperature Relation and X-Ray Temperature Function. *Mamoru Shimizu, Tetsu Kitayama, Shin Sasaki, & Tasushi Suto.* 590, 197 (2003)

SHIMIZU, T. The Evolution of Vector Magnetic Fields in an Emerging Flux Region. *M. Kubo, T. Shimizu, & B. W. Lites.* 595, 465 (2003)

SHIMIZU, TETSUYA. Global Anisotrophy versus Small-Scale Fluctuations in Neutrino Flux in Core-Collapse Supernova Explosions. *Hideki Madokoro, Tetsuya Shimizu, & Yuko Mochizuki.* 592, 1035 (2003)

SHIMIZU, YASUHIRO. See SATO, BUN'EI, et al. A Planetary Companion to the G-Type Giant Star HD 104985.

SHIMIZY, TOSHIFUMI. See NAGATA, SHIN'ICHI, et al. Spatial and Temporal Properties of Hot and Cool Coronal Loops.

SHIMOJO, M. Prominence Eruptions and Coronal Mass Ejection: A Statistical Study using Microwave Observations. *N. Gopalswamy, M. Shimojo, W. Lu, S. Yashiro, K. Shibasaki, & R. A. Howard.* 586, 562 (2003)

Radio and Hard X-Ray Images of High-Energy Electrons in an X-Class Solar Flare. *S. M. White, S. Krucker, K. Shibasaki, T. Yokoyama, M. Shimojo, & M. R. Kundu.* 595, L111 (2003)

SHIMOJO, MASUMI. Evolution of Conjugate Footpoints inside Flare Ribbons during a Great Two-Ribbon Flare on 2001 April 10. *Ayumi Asai, Takako T. Ishii, Hiroki Kurokawa, Takaaki Yokoyama, & Masumi Shimojo.* 586, 624 (2003)

SHIMON, M. See BATTISTELLI, E. S., et al. Triple Experiment Spectrum of the Sunyaev-Zel'dovich Effect in the Coma Cluster: H_0.

SHINOHARA, C. See PRICE, P. A., et al. Discovery of GRB 020405 and Its Late Red Bump.

SHIOMI, A. See AMENOMORI, M., et al. Multi-TeV Gamma-Ray Flares from Markarian 421 in 2000 and 2001 Observed with the Tibet Air Shower Array.

SHIOTA, DAIKOU. Analysis of the Temperature and Emission Measure of Solar Coronal Arcades and Test of a Scaling Law of Flare/Arcade Loop Length: Erratum (ApJ, 579, L45 [2002]). *Tetsuya T. Yamamoto, Daikou Shiota, Takuma Sakajiri, Sachiko Akiyama, Hiroaki Isobe, & Kazunari Shibata.* 592, L107 (2003) (Orig. paper in 579, L45 (2002))

SHIOYA, Y. See SHIMASAKU, K., et al. Subaru Deep Survey. IV. Discovery of a Large-Scale Structure at Redshift $\simeq$5.

SHIOYA, YASUHIRO. See OUCHI, MASAMI, et al. Subaru Deep Survey. II. Luminosity Functions and Clustering Properties of Lyα Emitters at $z = 4.86$ in the Subaru Deep Field.

See TANIGUCHI, YOSHIAKI, et al. The Discovery of a Very Narrow Line Star-forming Object at a Redshift of 5.66.

See FUJITA, SHINOBU S., et al. The Hα Luminosity Function and Star Formation Rate at $z \approx 0.24$ Based on Subaru Deep Imaging Data.

See OHYAMA, YOUICHI, et al. On the Origin of Lyα Blobs at High Redshift: Kinematic Evidence of a Hyperwind Galaxy at $z = 3.1$.

SHIPMAN, RUSSELL F. A Uniform Database of 2.4–45.4 Micron Spectra from the *Infrared Space Observatory* Short Wavelength Spectrometer. *G. C. Sloan, Kathleen E. Kraemer, Stephan D. Price, & Russell F. Shipman.* 147, 379 (2003)

SHIRAI, T. See AMENOMORI, M., et al. Multi-TeV Gamma-Ray Flares from Markarian 421 in 2000 and 2001 Observed with the Tibet Air Shower Array.

SHIRAKI, TAKAHIRO. Dependence of H_2CO and CH_3OH Formation on Temperature and Thickness of H_2O-CO Ice during the Successive Hydrogenation of CO. *Naoki Watanabe, Takahiro Shiraki, & Akira Kouchi.* 588, L121 (2003)

SHIRASAKI, Y. See WATANABE, K., et al. Solar Neutron Event in Association with a Large Solar Flare on 2000 November 24.

See KAWABATA, K. S., et al. On the Spectrum and Spectropolarimetry of Type Ic Hypernova SN 2003dh/GRB 030329.

See CREW, G. B., et al. *HETE-2* Localization and Observation of the Bright, X-Ray–rich Gamma-Ray Burst GRB 021211.

SHIRLEY, YANCY L. Chemistry and Dynamics in Pre-protostellar Cores. *Jeong-Eun Lee, Neal J. Evans II, Yancy L. Shirley, & Ken'ichi Tatematsu.* 583, 789 (2003)

Tracing the Mass during Low-Mass Star Formation. IV. Observations and Modeling of the Submillimeter Continuum Emission from Class I Protostars. *Chadwick H. Young, Yancy L. Shirley, Neal J. Evans II, & Jonathan M. C. Rawlings.* 145, 111 (2003)

A CS $J = 5 \rightarrow 4$ Mapping Survey Toward High-Mass Star-Forming Cores Associated with Water Masers. *Yancy L. Shirley, Neal J. Evans II, Kaisa E. Young, Claudia Knez, & Daniel T. Jaffe.* 149, 375 (2003)

SHKOLNIK, E. Evidence for Planet-Induced Chromospheric Activity on HD 179949. *E. Shkolnik, G. A. H. Walker, & D. A. Bohlender.* 597, 1092 (2003)

SHLOSMAN, ISAAC. Galaxy Formation in Triaxial Halos: Black Hole–Bulge–Dark Halo Correlation. *Amr A. El-Zant, Isaac Shlosman, Mitchell C. Begelman, & Juhan Frank.* 590, 641 (2003)

Long-lived Double-barred Galaxies: Critical Mass and Length Scales. *Amr A. El-Zant & Isaac Shlosman.* 595, L41 (2003)

SHOBBROOK, R. R. See MUKADEM, ANJUM S., et al. Constraining the Evolution of ZZ Ceti.

SHORE, STEVEN N. Mechanisms for the Origin of Turbulence in Non–Star-forming Clouds: The Translucent Cloud MBM 40. *Steven N. Shore, Loris Magnani, T. N. LaRosa, & Meredith N. McCarthy.* 593, 413 (2003)

SHORT, C. I. Atmospheric Models of Red Giants with Massive-Scale Non–Local Thermodynamic Equilibrium. *C. I. Short & P. H. Hauschildt.* 596, 501 (2003)

SHORT, NICHOLAS. Atmospheric Turbulence Measurements at Mount Wilson Observatory. *Nicholas Short, Walt Fitelson, & Charles H. Townes.* 599, 1469 (2003)

SHOUP, A. See ATKINS, R., et al. The High-Energy Gamma-Ray Fluence and Energy Spectrum of GRB 970417A from Observations with Milagrito.

See FALCONE, A., et al. Observation of GeV Solar Energetic Particles from the 1997 November 6 Event Using Milagrito.

See ATKINS, R., et al. Observation of TeV Gamma Rays from the Crab Nebula with Milagro Using a New Background Rejection Technique.

SHRADER, CHRIS R. A Method for Black Hole Mass Determination in Accretion-powered X-Ray Sources. *Chris R. Shrader & Lev Titarchuk.* 598, 168 (2003)

SHU, F. H. Branch, Spur, and Feather Formation in Spiral Galaxies. *S. Chakrabarti, G. Laughlin, & F. H. Shu.* 596, 220 (2003)

SHU, FRANK H. Relativistic Singular Isothermal Toroids. *Mike J. Cai & Frank H. Shu.* 583, 391 (2003)

Collapse of Magnetized Singular Isothermal Toroids. I. The Nonrotating Case. *Anthony Allen, Frank H. Shu, & Zhi-Yun Li.* 599, 351 (2003)

Collapse of Magnetized Singular Isothermal Toroids. II. Rotation and Magnetic Braking. *Anthony Allen, Zhi-Yun Li, & Frank H. Shu.* 599, 363 (2003)

SHUKLA, P. K. Cosmological Magnetic Field Generation by the Weibel Instability. *R. Schlickeiser & P. K. Shukla.* 599, L57 (2003)

SHULL, J. M. See WAKKER, B. P., et al. The *Far Ultraviolet Spectroscopic Explorer* Survey of O VI Absorption in and near the Galaxy.

See SAVAGE, B. D., et al. Distribution and Kinematics of O VI in the Galactic Halo.

See SEMBACH, K. R., et al. Highly Ionized High-Velocity Gas in the Vicinity of the Galaxy.

SHULL, J. MICHAEL. Inferring Physical Conditions in Interstellar Clouds of H_2. *Matthew K. Browning, Jason Tumlinson, & J. Michael Shull.* 582, 810 (2003)

Cosmological Effects of the First Stars: Evolving Spectra of Population III. *Jason Tumlinson, J. Michael Shull, & Aparna Venkatesan.* 584, 608 (2003)

Evolving Spectra of Population III Stars: Consequences for Cosmological Reionization. *Aparna Venkatesan, Jason Tumlinson, & J. Michael Shull.* 584, 621 (2003)

A Survey of *Far Ultraviolet Spectroscopic Explorer* and *Hubble Space Telescope* Sight Lines through High-Velocity Cloud Complex C. *Joseph A. Collins, J. Michael Shull, & Mark L. Giroux.* 585, 336 (2003)

The Multiphase Intergalactic Medium toward PKS 2155−304. *J. Michael Shull, Jason Tumlinson, & Mark L. Giroux.* 594, L107 (2003)

SHUPE, D. L. Models for Evolution of Dusty and E/S0 Galaxies Seen in Multiband Surveys. *C. K. Xu, C. J. Lonsdale, D. L. Shupe, A. Franceschini, C. Martin, & D. Schiminovich.* 587, 90 (2003)

SHUPING, R. Y. Evidence for Grain Growth in the Protostellar Disks of Orion. *R. Y. Shuping, John Bally, Mark Morris, & Henry Throop.* 587, L109 (2003)

SHUSTOV, B. M. A Coupled Dynamical and Chemical Model of Starless Cores of Magnetized Molecular Clouds. II. Chemical Differentiation. *V. I. Shematovich, D. S. Wiebe, B. M. Shustov, & Zhi-Yun Li.* 588, 894 (2003)

SIDERIS, IOANNIS V. Smooth Potential Chaos and *N*-Body Simulations. *Henry E. Kandrup & Ioannis V. Sideris.* 585, 244 (2003)

Supermassive Black Hole Binaries as Galactic Blenders. *Henry E. Kandrup, Ioannis V. Sideris, Balša Terzić, & Courtlandt L. Bohn.* 597, 111 (2003)

SIEBENMORGEN, RALF. Hot Dust in Radio-loud Active Galactic Nuclei. *Wolfram Freudling, Ralf Siebenmorgen, & Martin Haas.* 599, L13 (2003)

SIEGEL, A. See DURSI, L. J., et al. The Response of Model and Astrophysical Thermonuclear Flames to Curvature and Stretch.

SIEGEL, MICHAEL H. See DINESCU, DANA I., et al. Absolute Proper Motions to $B \sim 22.5$. V. Detection of Sagittarius Dwarf Spheroidal Debris in the Direction of the Galactic Anticenter: Erratum (ApJ, 575, L67 [2002]).

SIEGLER, NICK. Discovery of a Tight Brown Dwarf Companion to the Low-Mass Star LHS 2397a. *Melanie Freed, Laird M. Close, & Nick Siegler.* 584, 453 (2003)

Detection of Nine M8.0-L0.5 Binaries: The Very Low-Mass Binary Population and Its Implications for Brown Dwarf and Very Low Mass Star Formation. *Laird M. Close, Nick Siegler, Melanie Freed, & Beth Biller.* 587, 407 (2003)

An Adaptive Optics Survey of M6.0–M7.5 Stars: Discovery of Three Very Low Mass Binary Systems Including Two Probably Hyades Members. *Nick Siegler, Laird M. Close, Eric E. Mamajek, & Melanie Freed.* 598, 1265 (2003)

See CLOSE, LAIRD M., et al. High-Resolution Images of Orbital Motion in the Trapezium Cluster: First Scientific Results from the Multiple Mirror Telescope Deformable Secondary Mirror Adaptive Optics System.

SIEMIGINOWSKA, A. See FABBIANO, G., et al. The X-Ray–faint Emission of the Supermassive Nuclear Black Hole of IC 1459.

Chandra Observation of 3C 212: A New Look at the X-Ray and Ultraviolet Absorbers. *T. L. Aldcroft, A. Siemiginowska, M. Elvis, S. Mathur, F. Nicastro, & S. S. Murray.* 597, 751 (2003)

SIEMIGINOWSKA, ANETA. See BECHTOLD, JILL, et al. *Chandra* Survey of Radio-quiet, High-Redshift Quasars.

Chandra Discovery of an X-Ray Jet and Extended X-Ray Structure in $z = 0.63$ Quasar B2 0738+313. *Aneta Siemiginowska, Carlo Stanghellini, Gianfranco Brunetti, Fabrizio Fiore, Thomas L. Aldcroft, Jill Bechtold, Martin Elvis, Stephen S. Murray, L. A. Antonelli, & S. Colafrancesco.* 595, 643 (2003)

An X-Ray Jet Discovered by *Chandra* in the $z = 4.3$ Radio-selected Quasar GB 1508+5714. *Aneta Siemiginowska, Randall K. Smith, Thomas L. Aldcroft, D. A. Schwartz, Frederik Paerels, & Andreea O. Petric.* 598, L15 (2003)

SIEVERS, J. See MASON, B. S., et al. The Anisotropy of the Microwave Background to $l = 3500$: Deep Field Observatons with the Cosmic Background Imager.

SIEVERS, J. L. See PEARSON, T. J., et al. The Anisotropy of the Microwave Background to $l = 3500$: Mosaic Observations with the Cosmic Background Imager.

See MYERS, S. T., et al. A Fast Gridded Method for the Estimation of the Power Spectrum of the Cosmic Microwave Background from Interferometer Data with Application to the Cosmic Background Imager.

Cosmological Parameters from Cosmic Background Imager Observations and Comparisons with BOOMERANG, DASI, and MAXIMA. *J. L. Sievers, J. R. Bond, J. K. Cartwright, C. R. Contaldi, B. S. Mason, S. T. Myers, S. Padin, T. J. Pearson, U.-L. Pen, D. Pogosyan, S. Prunet, A. C. S. Readhead, M. C. Shepherd, P. S. Udomprasert, L. Bronfman, W. L. Holzapfel, & J. May.* 591, 599 (2003)

SIGNORE, M. See BATTISTELLI, E. S., et al. Triple Experiment Spectrum of the Sunyaev-Zel'dovich Effect in the Coma Cluster: H_0.

SIGURDSSON, S. See SCHAEFER, BRADLEY E., et al. GRB 021004: A Massive Progenitor Star Surrounded by Shells.

SIGURDSSON, STEINN. Electromagnetic Signals from Planetary Collisions. *Bing Zhang & Steinn Sigurdsson.* 596, L95 (2003)

Survival of Terrestrial Planets in the Presence of Giant Planet Migration. *Avi M. Mandell & Steinn Sigurdsson.* 599, L111 (2003)

SIGUT, T. A. A. Predicted Fe II Emission-Line Strengths from Active Galactic Nuclei. *T. A. A. Sigut & Anil K. Pradhan.* 145, 15 (2003)

SIKORA, M. High-Energy Gamma Rays From FR I Jets. *L. Stawarz, M. Sikora, & M. Ostrowski.* 597, 186 (2003)

SILBERMANN, NANCY A. See LU, NANYAO, et al. Infrared Emission of Normal Galaxies from 2.5 to 12 Microns: *Infrared Space Observatory* Spectra, Near-Infrared Continuum, and Mid-Infrared Emission Features.

SIL'CHENKO, O. K. The Leo I Cloud: Secular Nuclear Evolution of NGC 3379, NGC 3384, and NGC 3368? *O. K. Sil'chenko, A. V. Moiseev, V. L. Afanasiev, V. H. Chavushyan, & J. R. Valdes.* 591, 185 (2003)

SILICH, S. On the Rapidly Cooling Interior of Supergalactic Winds. *S. Silich, G. Tenorio-Tagle, & C. Muñoz-Tuñón.* 590, 791 (2003)

SILICH, S. A. Discovery of a Double Ring in the Dwarf Galaxy Markarian 409. *A. Gil de Paz, B. F. Madore, K. Noeske, L. M. Cairós, P. Papaderos, & S. A. Silich.* 596, L179 (2003)

SILICH, SERGIY. Supergalactic Winds Driven by Multiple Super–Star Clusters. *Guillermo Tenorio-Tagle, Sergiy Silich, & Casiana Munoz-Tunon.* 597, 279 (2003)

SILK, J. Kinetic Sunyaev-Zel'dovich Effect and Cosmic Microwave Background Polarization from Subsonic Bulk Motions of Dense Gas Clouds in Galaxy Cluster Cores. *J. M. Diego, P. Mazzotta, & J. Silk.* 597, L1 (2003)

SILK, JOSEPH. Cosmological Contraints from a Combined Analysis of the Cluster Mass Function and Microwave Background Anisotropies. *Alessandro Melchiorri, Paul Bode, Neta A. Bahcall, & Joseph Silk.* 586, L1 (2003)

SILLANPÄÄ, A. See BÖTTCHER, M., et al. Coordinated Multiwavelength Observations of BL Lacertae in 2000.

SILLS, A. Cataclysmic Variables: An Empirical Angular Momentum Loss Prescription From Open Cluster Data. *N. Andronov, M. Pinsonneault, & A. Sills.* 582, 358 (2003)

SILLS, ALISON. Blue Straggler Stars: A Direct Comparison of Star Counts and Population Ratios in Six Galactic Globular Clusters. *Francesco R. Ferraro, Alison Sills, Robert T. Rood, Barbara Paltrinieri, & Roberto Buonanno.* 588, 464 (2003)

SILVA, ADRIANA V. R. Method for Spot Detection on Solar-like Stars. *Adriana V. R. Silva.* 585, L147 (2003)

SILVA, L. O. Interpenetrating Plasma Shells: Near-Equipartition Magnetic Field Generation and Nonthermal Particle Acceleration. *L. O. Silva, R. A. Fonseca, J. W. Tonge, J. M. Dawson, W. B. Mori, & M. V. Medvedev.* 596, L121 (2003)

SILVA, P. T. Expected Constraints on the Generalized Chaplygin Equation of State from Future Supernova Experiments and Gravitational Lensing Statistics. *P. T. Silva & O. Bertolami.* 599, 829 (2003)

SILVERBERG, R. F. See AGUIRRE, J. E., et al. The Spectrum of Integrated Millimeter Flux of the Magellanic Clouds and 30 Doradus from TopHat and DIRBE Data.

SILVESTRI, A. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

SILVESTRI, N. See MUKADEM, ANJUM S., et al. Constraining the Evolution of ZZ Ceti.

SILVESTRI, NICOLE M. See SCHMIDT, GARY D., et al. Magnetic White Dwarfs from the Sloan Digital Sky Survey: The First Data Release.

SILVOTTI, R. See MUKADEM, ANJUM S., et al. Constraining the Evolution of ZZ Ceti.

SIMARD, LUC. Cl 1358+62: Characterizing the Physical Properties of Cluster Galaxies at $z = 0.33$. *Kim-Vy H. Tran, Luc Simard, Garth Illingworth, & Marijn Franx.* 590, 238 (2003)

See GEBHARDT, KARL, et al. The DEEP Groth Strip Survery. IX. Evolution of the Fundamental Plane of Field Galaxies.

See KOBULNICKY, HENRY A., et al. The DEEP Groth Strip Survey. VII. The Metallicity of Field Galaxies at $0.26 < z < 0.82$ and the Evolution of the Luminosity-Metallicity Relation.

SIMON, JOSHUA D. High-Resolution Measurements of the Dark Matter Halo of NGC 2976: Evidence for a Shallow Density Profile. *Joshua D. Simon, Alberto D. Bolatto, Adam Leroy, & Leo Blitz.* 596, 957 (2003)

SIMON, M. Near-Infrared Adaptive Optics Imaging of the Embedded Cluster NGC 2024. *Tracy L. Beck, M. Simon, & L. M. Close.* 583, 358 (2003)

Astrophysics of Young Star Binaries. *L. Prato, T. P. Greene, & M. Simon.* 584, 853 (2003)

The Smallest Mass Ratio Young Star Spectroscopic Binaries: Erratum (ApJ, 569, 863 [2002]). *L. Prato, M. Simon, T. Mazeh, I. S. McLean, D. Norman, & S. Zucker.* 598, 1409 (2003)

The Mass Ratio Distribution in Main-Sequence Spectroscopic Binaries Measured by Infrared Spectroscopy. *T. Mazeh, M. Simon, L. Prato, B. Markus, & S. Zucker.* 599, 1344 (2003)

SIMON, ROBERT. See KRAEMER, KATHLEEN E., et al. Five Star-forming Cores in the Galactic Ring Survey: A Mid-Infrared Study.

SIMON, THEODORE. CO Emission from Disks around AB Aurigae and HD 141569: Implications for Disk Structure and Planet Formation Timescales. *Sean D. Brittain, Terrence W. Rettig, Theodore Simon, Craig Kulesa, Michael A. DiSanti, & Neil Dello Russo.* 588, 535 (2003)

SIMPSON, CHRIS. See IYE, MASANORI, et al. ERO R1 in the Field of Cl 0939+4713: Evidence for an S0-Like Galaxy at $z \sim 1.5$.

SINCLAIR, M. A Survey for H_2O Megamasers. III. Monitoring Water Vapor Masers in Active Galaxies. *J. A. Braatz, A. S. Wilson, C. Henkel, R. Gough, & M. Sinclair.* 146, 249 (2003)

SINELNIKOV, IGOR. See COLLEY, WESLEY N., et al. Around-the-Clock Observations of the Q9057+561A,B Gravitationally Lensed Quasar. II. Results for the Second Observing Season.

SINGH, JAGDEV. Spectroscopic Studies of the Solar Corona. IV. Physical Properties of Coronal Structure. *Jagdev Singh, Kiyoshi Ichimoto, Takashi Sakurai, & S. Muneer.* 585, 516 (2003)

SINNIS, C. See ATKINS, R., et al. The High-Energy Gamma-Ray Fluence and Energy Spectrum of GRB 970417A from Observations with Milagrito.

SINNIS, G. See FALCONE, A., et al. Observation of GeV Solar Energetic Particles from the 1997 November 6 Event Using Milagrito.

See ATKINS, R., et al. Observation of TeV Gamma Rays from the Crab Nebula with Milagro Using a New Background Rejection Technique.

SION, EDWARD M. Composite Accretion Disk and White Dwarf Model Analyses of the Quiescence of Dwarf Novae: EM Cygni, CZ Orionis, and WW Ceti. *Lisa Winter & Edward M. Sion.* 582, 352 (2003)

Hubble Space Telescope STIS Spectroscopy of the White Dwarfs in the Ultrashort-Period Dwarf Novae VY Aquarii and WX Ceti. *Edward M. Sion, Paula Szkody, Fuhua Cheng, Boris T. Gänsicke, & Steve B. Howell.* 583, 907 (2003)

Modeling Accretional Heating in Dwarf Novae. *Patrick Godon & Edward M. Sion.* 586, 427 (2003)

Hubble Space Telescope Space Telescope Imaging Spectrograph Spectroscopy of the Intermediate Polar EX Hydrae. *Kunegunda E. Belle, Steve B. Howell, Edward M. Sion, Knox S. Long, & Paula Szkody.* 587, 373 (2003)

WZ Sagittae: *FUSE* Spectroscopy of the 2001 Outburst. *Knox S. Long, Cynthia S. Froning, Boris Gänsicke, Christian Knigge, Edward M. Sion, & Paula Szkody.* 591, 1172 (2003)

Hubble Space Telescope Spectroscopy of the Unexpected 2001 July Outburst of the Dwarf Nova WZ Sagittae. *Edward M. Sion, Boris T. Gaensicke, Knox S. Long, Paula Szkody, Fu-Hua Cheng, Steve B. Howell, Patrick Godon, William F. Welsh, Sumner Starrfield, Christian Knigge, & Warren M. Sparks.* 592, 1137 (2003)

See GÄNSICKE, BORIS T., et al. Anomalous Ultraviolet Line Flux Ratios in the Cataclysmic variables 1RXS J232953.9+062814, CE 315, BZ Ursae Majoris, and EY Cygni observed with the *Hubble Space Telescope* Space Telescope Imaging Spectrograph.

Hubble Space Telescope Observations of Ultraviolet Oscillations in WZ Sagittae during the Decline from Outburst. *William F. Welsh, Edward M. Sion, Patrick Godon, Boris T. Gänsicke, Christian Knigge, Knox S. Long, & Paula Szkody.* 599, 509 (2003)

SIRBI, G. See RUNYAN, M. C., et al. ACBAR: The Arcminute Cosmology Bolometer Array Receiver.

SIRIANNI, M. See TRAN, H. D., et al. Advanced Camera for Surveys Observations of Young Star Clusters in the Interacting Galaxy UGC 10214.

See BOUWENS, R. J., et al. Star Formation at $z \sim 6$: i-Dropouts in the Advanced Camera for Surveys Guaranteed Time Observation Fields.

See BLAKESLEE, JOHN P., et al. Advanced Camera for Surveys Photometry of the Cluster RDCS 1252.9−2927: The Color-Magnitude Relation at $z = 1.24$.

See MEURER, GERHARDT R., et al. The Discovery of Globular Clusters in the Protospiral Galaxy NGC 2915: Implications for Hierarchical Galaxy Evolution.

SIRIANNI, MARCO. See BLAKESLEE, JOHN P., et al. Discovery of Two Distant Type Ia Supernovae in the Hubble Deep Field–North with the Advanced Camera for Surveys.

SIRK, MARTIN M. See HAWLEY, SUZANNE L., et al. Multiwavelength Observations of Flares on AD Leonis.

SIRKO, E. Ellipsoidal Variability in the OGLE Planetary Transit Candidates. *E. Sirko & B. Paczyński.* 592, 1217 (2003)

SIVAKOFF, GREGORY R. Low-Mass X-Ray Binaries and Globular Clusters in Early-Type Galaxies. *Craig L. Sarazin, Arunav Kundu, Jimmy A. Irwin, Gregory R. Sivakoff, Elizabeth L. Blanton, & Scott W. Randall.* 595, 743 (2003)

Chandra Observations of Low-Mass X-Ray Binaries and Diffuse Gas in the Early-Type Galaxies NGC 4365 and NGC 4382 (M85). *Gregory R. Sivakoff, Craig L. Sarazin, & Jimmy A. Irwin.* 599, 218 (2003)

SIVARAMAKRISHNAN, ANAND. The Structure of High Strehl Ratio Point-Spread Functions. *Marshall D. Perrin, Anand Sivaramakrishnan, Russell B. Makidon, Ben R. Oppenheimer, & James R. Graham.* 596, 702 (2003)

SJOUWERMAN, L. O. Discovery of Radio/X-Ray/Optical–resolved Supernova Remnants in the Center of the Andromeda Galaxy. *A. K. H. Kong, L. O. Sjouwerman, B. F. Williams, M. R. Garcia, & J. R. Dickel.* 590, L21 (2003)

SKALKOWSKI, G. An X-Ray Investigation of the NGC 346 Field in the Small Magellanic Cloud. II. The Field Population. *Y. Nazé, J. M. Hartwell, I. R. Stevens, J. Manfroid, S. Marchenko, M. F. Corcoran, A. F. J. Moffat, & G. Skalkowski.* 586, 983 (2003)

SKIBO, JEFFREY G. See SHARE, GERALD H., et al. High-Resolution Observation of the Solar Positron-Electron Annihilation Line.

SKILLMAN, D. R. X-Ray Variability of the Magnetic Cataclysmic Variable V1432 Aquilae and the Seyfert Galaxy NGC 6814. *K. Mukai, C. Hellier, G. Madejski, J. Patterson, & D. R. Skillman.* 597, 479 (2003)

SKILLMAN, EVAN D. Deep *Hubble Space Telescope* Imaging of IC 1613. II. The Star Formation History. *Evan D. Skillman, Eline Tolstoy, Andrew A. Cole, Andrew E. Dolphin, Abhijit Saha, J. S. Gallagher, R. C. Dohm-Palmer, & Mario Mateo.* 596, 253 (2003)

Serendipity and the Sloan Digital Sky Survey: Discovery of the Largest Known Planetary Nebula on the Sky. *Paul C. Hewett, Michael J. Irwin, Evan D. Skillman, Craig B. Foltz, Jon P. Willis, Stephen J. Warren, & Nicholas A. Walton.* 599, L37 (2003)

SKINNER, STEPHEN. A Deep *Chandra* X-Ray Observation of the Embedded Young Cluster in NGC 2024. *Stephen Skinner, Marc Gagné, & Emily Belzer.* 598, 375 (2003)

SKINNER, STEPHEN L. Separating the X-Ray Emissions of UV Ceti A and B with *Chandra*. *Marc Audard, Manuel Güdel, & Stephen L. Skinner.* 589, 983 (2003)

SKJAERAASEN, O. Dissipation in Poynting-Flux–dominated Flows: The σ-Problem of the Crab Pulsar Wind. *J. G. Kirk & O. Skjaeraasen.* 591, 366 (2003)

SKODRAS, A. Wavelet Analysis of Umbral Oscillations. *E. B. Christopoulou, A. Skodras, A. A. Georgakilas, & S. Koutchmy.* 591, 416 (2003)

SKORDIS, CONSTANTINOS. Probing the Reionization History of the Universe using the Cosmic Microwave Background Polarization. *Manoj Kaplinghat, Mike Chu, Zoltan Haiman, Gilbert P. Holder, Lloyd Knox, & Constantinos Skordis.* 583, 24 (2003)

SKORY, S. New Theoretical Line List for the $B' \, ^2\Sigma^+ \leftarrow X \, ^2\Sigma^+$ System of ^{24}MgH. *S. Skory, P. F. Weck, P. C. Stancil, & K. Kirby.* 148, 599 (2003)

SKOUG, R. M. Short-Period Magnetic Fluctuations in *Advanced Composition Explorer* Solar Wind Data: Evidence for Anticorrelation with Alfvén Speed. *D. J. Mullan, C. W. Smith, N. F. Ness, & R. M. Skoug.* 583, 496 (2003)

Evidence for a Suprathermal Seed Population of Heavy Ions Accelerated by Interplanetary Shocks near 1 AU. *M. I. Desai, G. M. Mason, J. R. Dwyer, J. E. Mazur, R. E. Gold, S. M. Krimigis, C. W. Smith, & R. M. Skoug.* 588, 1149 (2003)

SKRUTSKIE, M. F. Analysis of the Diffuse Near-Infrared Emission from Two-Micron All-Sky Survey Deep Integration Data: Foregrounds versus the Cosmic Infrared Background. *S. Odenwald, A. Kashlinsky, J. C. Mather, M. F. Skrutskie, & R. M. Cutri.* 583, 535 (2003)

Tracing the Galactic Anticenter Stellar Stream with 2MASS M Giants. *Helio J. Rocha-Pinto, Steven R. Majewski, M. F. Skrutskie, & Jeffrey D. Crane.* 594, L115 (2003)

A Two Micron All Sky Survey All-Sky View of the Sagittarius Dwarf Galaxy. I. Morphology of the Sagittarius Core and Tidal Arms. *Steven R. Majewski, M. F. Skrutskie, Martin D. Weinberg, & James C. Ostheimer.* 599, 1082 (2003)

SKRUTSKIE, MICHAEL F. Exploring Halo Substructure with Giant Stars: Spectroscopy of Stars in the Galactic Anticenter Stellar Structure. *Jeffrey D. Crane, Steven R. Majewski, Helio J. Rocha-Pinto, Peter M. Frinchaboy, Michael F. Skrutskie, & David R. Law.* 594, L119 (2003)

SKULJAN, J. See SUMI, T., et al. Microlensing Optical Depth toward the Galactic Bulge from Microlensing Observations during 2000 with Difference Image Analysis.

SLANE, P. O. A Compact Central Object in the Supernova Remnant Kesteven 79. *F. D. Seward, P. O. Slane, R. K. Smith, & M. Sun.* 584, 414 (2003)

X-Ray Observations of the Compact Central Object in Supernova Remnant G347.3−0.5. *J. S. Lazendic, P. O. Slane, B. M. Gaensler, P. P. Plucinsky, J. P. Hughes, D. K. Galloway, & F. Crawford.* 593, L27 (2003)

Untwisting the Tornado: X-Ray Imaging and Spectroscopy of G357.7−0.1. *B. M. Gaensler, J. K. J. Fogel, P. O. Slane, J. M. Miller, R. Wijnands, S. S. Eikenberry, & W. H. G. Lewin.* 594, L35 (2003)

SLANE, PATRICK O. The Radial Structure of Supernova Remnant N103B. *Karen T. Lewis, David N. Burrows, John P. Hughes, Patrick O. Slane, Gordon P. Garmire, & John A. Nousek.* 582, 770 (2003)

Iron-rich Ejecta in the Supernova Remnant DEM L71. *John P. Hughes, Parviz Ghavamian, Cara E. Rakowski, & Patrick O. Slane.* 582, L95 (2003)

Revealing New Physical Structures in the Supernova Remnant N63A through *Chandra* Imaging Spectroscopy. *Jessica S. Warren, John P. Hughes, & Patrick O. Slane.* 583, 260 (2003)

An X-Ray Pulsar in the Oxygen-rich Supernova Remnant G292.0+1.8. *John P. Hughes, Patrick O. Slane, Sangwook Park, Peter W. A. Roming, & David N. Burrows.* 591, L139 (2003)

Detection of Magnesium-rich Ejecta in the Middle-aged Supernova Remnant N49B. *Sangwook Park, John P. Hughes, Patrick O. Slane, David N. Burrows, Jessica S. Warren, Gordon P. Garmire, & John A. Nousek.* 592, L41 (2003)

0103−72.6: A New Oxygen-rich Supernova Remnant in the Small Magellanic Cloud. *Sangwook Park, John P. Hughes, David N. Burrows, Patrick O. Slane, John A. Nousek, & Gordon P. Garmire.* 598, L95 (2003)

SLAVIN, JONATHAN D. The Chemical Composition and Gas-to-Dust Mass Ratio of Nearby Interstellar Matter. *Priscilla C. Frisch & Jonathan D. Slavin.* 594, 844 (2003)

SLOAN, G. C. A Uniform Database of 2.4–45.4 Micron Spectra from the *Infrared Space Observatory* Short Wavelength Spectrometer. *G. C. Sloan, Kathleen E. Kraemer, Stephan D. Price, & Russell F. Shipman.* 147, 379 (2003)

Guilt by Association: The 13 Micron Dust Emission Feature and Its Correlation to Other Gas and Dust Features. *G. C. Sloan, Kathleen E. Kraemer, J. H. Goebel, & Stephan D. Price.* 594, 482 (2003)

SLOCUM, P. L. Elemental Fractionation in Small Solar Energetic Particle Events. *P. L. Slocum, E. C. Stone, R. A. Leske, E. R. Christian, C. M. S. Cohen, A. C. Cummings, M. I. Desai, J. R. Dwyer, G. M. Mason, J. E. Mazur, R. A. Mewaldt, T. T. von Rosenvinge, & M. E. Wiedenbeck.* 594, 592 (2003)

SLYSH, SLAVA. A C-Band Spectral Scan of IRC +10°216. *Esteban Araya, Peter Hofner, Paul Goldsmith, Slava Slysh, & Shuro Takano.* 596, 556 (2003)

SLYZ, ADRIANNE. Dark Matter within High Surface Brightness Spiral Galaxies. *Thilo Kranz, Adrianne Slyz, & Hans-Walter Rix.* 586, 143 (2003)

SMAIL, I. See SWINBANK, A. M., et al. Galaxies under the Cosmic Microscope: A Gemini Multiobject Spectrograph Study of the Lensed Disk Galaxy 289 in A2218.

SMAIL, IAN. A SCUBA Galaxy in the Protocluster around 53W002 at $z = 2.4$. *Ian Smail, R. J. Ivison, D. G. Gilbank, J. S. Dunlop, W. C. Keel, K. Motohara, & J. A. Stevens.* 583, 551 (2003)

Measuring σ_8 with Cluster Lensing: Biases from Unrelaxed Clusters. *Graham P. Smith, Alastair C. Edge, Vincent R. Eke, Robert C. Nichol, Ian Smail, & Jean-Paul Kneib.* 590, L79 (2003)

A Wide-Field *Hubble Space Telescope* Study of the Cluster Cl 0024+16 at $z = 0.4$. I. Morphological Distributions to 5 Mpc Radius. *Tommaso Treu, Richard S. Ellis, Jean-Paul Kneib, Alan Dressler, Ian Smail, Oliver Czoske, Augustus Oemler, & Priyamvada Natarajan.* 591, 53 (2003)

The Transformation of Galaxies within the Large-Scale Structure around a $z = 0.41$ Cluster: Erratum (ApJ, 562, L9 [2001]). *T. Kodama, Ian Smail, F. Nakata, S. Okamura, & R. G. Bower.* 591, L169 (2003) (Orig. paper in 562, L9 (2001))

Extended X-Ray Emission around 4C 41.17 at $z = 3.8$. *Caleb Scharf, Ian Smail, Rob Ivison, Richard Bower, Wil van Breugel, & Michiel Reuland.* 596, 105 (2003)

See KNEIB, JEAN-PAUL, et al. A Wide-Field *Hubble Space Telescope* Study of the Cluster Cl 0024+1654 at $z = 0.4$. II. The Cluster Mass Distribution.

Chandra Detections of SCUBA Galaxies around High-z Radio Sources. *Ian Smail, C. A. Scharf, R. J. Ivison, J. A. Stevens, R. G. Bower, & J. S. Dunlop.* 599, 86 (2003)

SMALDONE, L. A. *Solar and Heliospheric Observatory*/Coronal Diagnostic Spectrograph and Ground-based Observations of a Two-Ribbon Flare: Spatially Resolved Signatures of Chromospheric Evaporation. *L. Teriaca, A. Falchi, G. Cauzzi, R. Falciani, L. A. Smaldone, & V. Andretta.* 588, 596 (2003)

SMALE, A. P. The Complete Z-Diagram of LMC X-2. *A. P. Smale, J. Homan, & E. Kuulkers.* 590, 1035 (2003)

SMARTT, S. J. See KERINS, E., et al. Theory of Pixel Lensing toward M31. II. The Velocity Anisotropy and Flattening of the MACHO Distribution.

SMECKER-HANE, T. A. A Search for Ionized Gas in the Draco and Ursa Minor Dwarf Spheroidal Galaxies. *J. S. Gallagher, G. J. Madsen, R. J. Reynolds, E. K. Grebel, & T. A. Smecker-Hane.* 588, 326 (2003)

SMECKER-HANE, TAMMY A. Constraints on the Origin of Manganese from the Composition of the Sagittarius Dwarf Spheroidal Galaxy and the Galactic Bulge. *Andrew McWilliam, R. Michael Rich, & Tammy A. Smecker-Hane.* 592, L21 (2003)

Constraints on the Origin of Manganese from the Composition of the Sagittarius Dwarf Galaxy and the Galactic Bulge: Erratum (ApJ, 592, L21 [2003]). *Andrew McWilliam, R. Michael Rich, & Tammy A. Smecker-Hane.* 593, L145 (2003) (Orig. paper in 592, L21 (2003))

SMITH, A. J. See ATKINS, R., et al. The High-Energy Gamma-Ray Fluence and Energy Spectrum of GRB 970417A from Observations with Milagrito.

See FALCONE, A., et al. Observation of GeV Solar Energetic Particles from the 1997 November 6 Event Using Milagrito.

See ATKINS, R., et al. Observation of TeV Gamma Rays from the Crab Nebula with Milagro Using a New Background Rejection Technique.

SMITH, BEVERLY J. Models of the Morphology, Kinematics, and Star Formation History of the Prototypical Collisional Starburst System NGC 7714/7715=Arp 284. *Curtis Struck & Beverly J. Smith.* 589, 157 (2003)

SMITH, C. W. Short-Period Magnetic Fluctuations in *Advanced Composition Explorer* Solar Wind Data: Evidence for Anticorrelation with Alfvén Speed. *D. J. Mullan, C. W. Smith, N. F. Ness, & R. M. Skoug.* 583, 496 (2003)

Evidence for a Suprathermal Seed Population of Heavy Ions Accelerated by Interplanetary Shocks near 1 AU. *M. I. Desai, G. M. Mason, J. R. Dwyer, J. E. Mazur, R. E. Gold, S. M. Krimigis, C. W. Smith, & R. M. Skoug.* 588, 1149 (2003)

SMITH, CHARLES W. Turbulent Heating of the Distant Solar Wind by Interstellar Pickup Protons. *Philip A. Isenberg, Charles W. Smith, & William H. Matthaeus.* 592, 564 (2003)

SMITH, D. See WOODS, P. M., et al. The 2001 April Burst Activation of SGR 1900+14: Pulse Properties and Torque.

SMITH, D. A. ROTSE-III Observations of the Early Afterglow from GRB 030329. *D. A. Smith, E. S. Rykoff, C. W. Akerlof, M. C. Ashley, D. Bizyaev, T. A. McKay, A. Mukadam, A. Phillips, R. Quimby, B. Schaefer, D. Sullivan, H. F. Swan, W. T. Vestrand, J. C. Wheeler, & J. Wren.* 596, L151 (2003)

SMITH, D. M. Extended Emission from Cygnus X-3 Detected with *Chandra*. *W. A. Heindl, J. A. Tomsick, R. Wijnands, & D. M. Smith.* 588, L97 (2003)

The *Reuven Ramaty High Energy Solar Spectroscopic Imager* Observation of the 1809 keV Line from Galactic ^{26}Al. *D. M. Smith.* 589, L55 (2003)

See LIN, R. P., et al. *RHESSI* Observations of Particle Acceleration and Energy Release in an Intense Solar Gamma-Ray Line Flare.

First Gamma-Ray Images of a Solar Flare. *G. J. Hurford, R. A. Schwartz, S. Krucker, R. P. Lin, D. M. Smith, & N. Vilmer.* 595, L77 (2003)

High-Resolution Spectroscopy of Gamma-Ray Lines from the X-Class Solar Flare of 2002 July 23. *D. M. Smith, G. H. Share, R. J. Murphy, R. A. Schwartz, A. Y. Shih, & R. P. Lin.* 595, L81 (2003)

Physical Implications of *RHESSI* Neutron-Capture Line Measurements. *R. J. Murphy, G. H. Share, X.-M. Hua, R. P. Lin, D. M. Smith, & R. A. Schwartz.* 595, L93 (2003)

SMITH, DAVID A. A *Chandra* X-Ray Study of NGC 1068. II. The Luminous X-Ray Source Population. *David A. Smith & Andrew S. Wilson.* 591, 138 (2003)

SMITH, DAVID M. See SHARE, GERALD H., et al. High-Resolution Observation of the Solar Positron-Electron Annihilation Line.

Directionality of Flare-accelerated α-Particles at the Sun. *Gerald H. Share, Ronald J. Murphy, David M. Smith, Robert P. Lin, Brian R. Dennis, & Richard A. Schwartz.* 595, L89 (2003)

An Explanation for Non–Power-Law Behavior in the Hard X-Ray Spectrum of the 2002 July 23 Solar Flare. *Eduard P. Kontar, John C. Brown, A. Gordon Emslie, Richard A. Schwartz, David M. Smith, & R. Calum Alexander.* 595, L123 (2003)

SMITH, E. See KNOP, R. A., et al. New Constraints on Ω_M, Ω_Λ, and w from an Independent Set of 11 High-Redshift Supernovae Observed with the *Hubble Space Telescope*.

SMITH, ED. Far-Ultraviolet Emission from Elliptical Galaxies at $z = 0.33$. *Thomas M. Brown, Henry C. Ferguson, Ed Smith, Charles W. Bowers, Randy A. Kimble, Alvio Renzini, & R. Michael Rich.* 584, L69 (2003)

Evidence of a Significant Intermediate-Age Population in the M31 Halo from Main-Sequence Photometry. *Thomas M. Brown, Henry C. Ferguson, Ed Smith, Randy A. Kimble, Allen V. Sweigart, Alvio Renzini, R. Michael Rich, & Don A. VandenBerg.* 592, L17 (2003)

SMITH, GRAHAM. See KNEIB, JEAN-PAUL, et al. A Wide-Field *Hubble Space Telescope* Study of the Cluster Cl 0024+1654 at $z = 0.4$. II. The Cluster Mass Distribution.

SMITH, GRAHAM P. Measuring σ_8 with Cluster Lensing: Biases from Unrelaxed Clusters. *Graham P. Smith, Alastair C. Edge, Vincent R. Eke, Robert C. Nichol, Ian Smail, & Jean-Paul Kneib.* 590, L79 (2003)

See SWINBANK, A. M., et al. Galaxies under the Cosmic Microscope: A Gemini Multiobject Spectrograph Study of the Lensed Disk Galaxy 289 in A2218.

A Unique Small-Scale Gravitational Arc in A1201. *Alastair C. Edge, Graham P. Smith, David J. Sand, Tommaso Treu, Harald Ebeling, Steven W. Allen, & Pieter G. van Dokkum.* 599, L69 (2003)

SMITH, HARDING E. VLBI Imaging of Luminous Infrared Galaxies: Active Galactic Nucleus Cores in Markarian 231, UGC 5101, and NGC 7469. *Carol J. Lonsdale, Colin J. Lonsdale, Harding E. Smith, & Philip J. Diamond.* 592, 804 (2003)

SMITH, J. See SWINBANK, A. M., et al. Galaxies under the Cosmic Microscope: A Gemini Multiobject Spectrograph Study of the Lensed Disk Galaxy 289 in A2218.

SMITH, J. ALLYN. See SCHMIDT, GARY D., et al. Magnetic White Dwarfs from the Sloan Digital Sky Survey: The First Data Release.

SMITH, L. J. A Tale of Two Stars: The Extreme O7 Iaf+ Supergiant AV 83 and the OC7.5 III((f)) Star AV 69. *D. John Hillier, T. Lanz, S. R. Heap, I. Hubeny, L. J. Smith, C. J. Evans, D. J. Lennon, & J. C. Bouret.* 588, 1039 (2003)

Quantitative Spectroscopy of O Stars at Low Metallicity: O Dwarfs in NGC 346. *J.-C. Bouret, T. Lanz, D. J. Hillier, S. R. Heap, I. Hubeny, D. J. Lennon, L. J. Smith, & C. J. Evans.* 595, 1182 (2003)

SMITH, M. S. A New ^{17}F(p, γ)^{18}Ne Reaction Rate and Its Implications for Nova Nucleosynthesis. *S. Parete-Koon, W. R. Hix, M. S. Smith, S. Starrfield, D. W. Bardayan, M. W. Guidry, & A. Mezzacappa.* 598, 1239 (2003)

SMITH, MARTIN C. A Brown Dwarf Microlens Candidate from the Second Phase of the Optical Gravitational Lensing Experiment. *Martin C. Smith, Shude Mao, & Przemysław Woźniak.* 585, L65 (2003)

SMITH, MICHAEL D. Multiwavelength Spectroscopy of the Bipolar Outflow from Cepheus E. *Michael D. Smith, Dirk Froebrich, & Jochen Eislöffel.* 592, 245 (2003)

SMITH, NATHAN. Latitude-dependent Effects in the Stellar Wind of η Carinae. *Nathan Smith, Kris Davidson, Theodore R. Gull, Kazunori Ishibashi, & D. John Hillier.* 586, 432 (2003)

Numerous Proplyd Candidates in the Harsh Environment of the Carina Nebula. *Nathan Smith, John Bally, & Jon A. Morse.* 587, L105 (2003)

SMITH, PAUL S. A *Hubble Space Telescope*/WFPC2 Snapshot Survey of 2MASS-selected Red QSOs. *Andrew R. Marble, Dean C. Hines, Gary D. Schmidt, Paul S. Smith, Jason A. Surace, Lee Armus, Roc M. Cutri, & Brant O. Nelson.* 590, 707 (2003)

Optical Spectropolarimetry of Quasi-stellar Objects Discovered by the Two-Micron All Sky Survey. *Paul S. Smith, Gary D. Schmidt, Dean C. Hines, & Craig B. Foltz.* 593, 676 (2003)

SMITH, R. See MARKEVITCH, M., et al. *Chandra* Spectra of the Soft X-Ray Diffuse Background.

SMITH, R. CHRIS. See TONRY, JOHN L., et al. Cosmological Results from High-z Supernovae.

See STORCHI-BERGMANN, THAISA, et al. Evolution of the Nuclear Accretion Disk Emission in NGC 1097: Getting Closer to the Black Hole.

SMITH, R. K. A Compact Central Object in the Supernova Remnant Kesteven 79. *F. D. Seward, P. O. Slane, R. K. Smith, & M. Sun.* 584, 414 (2003)

SMITH, RANDALL K. An X-Ray Jet Discovered by *Chandra* in the $z = 4.3$ Radio-selected Quasar GB 1508+5714. *Aneta Siemiginowska, Randall K. Smith, Thomas L. Aldcroft, D. A. Schwartz, Frederik Paerels, & Andreea O. Petric.* 598, L15 (2003)

SMITH, TRACY L. Small Magellanic Cloud–Type Interstellar Dust in the Milky Way. *Lynne A. Valencic, Geoffrey C. Clayton, Karl Gordon, & Tracy L. Smith.* 598, 369 (2003)

SMITH, VERNE V. High-Resolution Infrared Spectroscopy of the Brown Dwarf ϵ Indi Ba. *Verne V. Smith, Takashi Tsuji, Kenneth H. Hinkle, Katia Cunha, Robert D. Blum, Jeff A. Valenti, Stephen T. Ridgway, Richard R. Joyce, & Peter Bernath.* 599, L107 (2003)

SMYTHE, R. See COLAVITA, M., et al. Observations of DG Tauri with the Keck Interferometer.

SNEDDEN, STEPHANIE A. See SCHMIDT, GARY D., et al. Magnetic White Dwarfs from the Sloan Digital Sky Survey: The First Data Release.

SNEDEN, C. Improved Laboratory Transition Probabilities for Nd II and Application to the Neodymium Abundances of the Sun and Three Metal-Poor Stars. *E. A. Den Hartog, J. E. Lawler, C. Sneden, & J. J. Cowan.* 148, 543 (2003)

SNEDEN, CHRISTOPHER. Editorial: ApJ Letters Transitions. *Christopher Sneden.* 582, L3 (2003)

Measurement of the Europium Isotope Ratio for the Extremely Metal-poor, r-Process–enhanced Star CS 31082-001. *Wako Aoki, Satoshi Honda, Timothy C. Beers, & Christopher Sneden.* 586, 506 (2003)

The Extremely Metal-poor, Neutron Capture–rich Star CS 22892−052: A Comprehensive Abundance Analysis. *Christopher Sneden, John J. Cowan, James E. Lawler, Inese I. Ivans, Scott Burles, Timothy C. Beers, Francesca Primas, Vanessa Hill, James W. Truran, George M. Fuller, Bernd Pfeiffer, & Karl-Ludwig Kratz.* 591, 936 (2003)

Binary Blue Metal-Poor Stars: Evidence for Asymptotic Giant Branch Mass Transfer. *Christopher Sneden, George W. Preston, & John J. Cowan.* 592, 504 (2003)

Chemical Substructure in the Milky Way Halo: A New Population of Old Stars. *Inese I. Ivans, Christopher Sneden, C. Renée James, George W. Preston, Jon P. Fulbright, Peter A. Höflich, Bruce W. Carney, & J. Craig Wheeler.* 592, 906 (2003)

SNELL, RONALD L. A Survey of 557 GHz Water Vapor Emission in the NGC 1333 Molecular Cloud. *Edwin A. Bergin, Michael J. Kaufman, Gary J. Melnick, Ronald L. Snell, & John E. Howe.* 582, 830 (2003)

SNIGULA, J. The Munich Near-Infrared Cluster Survey. II. The K-Band Luminosity Function of Field Galaxies to $z \sim 1.2$. *N. Drory, R. Bender, G. Feulner, U. Hopp, C. Maraston, J. Snigula, & G. J. Hill.* 595, 698 (2003)

SNOW, T. P. See THORBURN, J. A., et al. Some Diffuse Interstellar Bands Related to Interstellar C_2 Molecules.

See CLAYTON, GEOFFREY C., et al. The Role of Polycyclic Aromatic Hydrocarbons in Ultraviolet Extinction. I. Probing Small Molecular Polycyclic Aromatic Hydrocarbons.

SNOW, THEODORE P. Hydrogenation and Charge States of the Polycyclic Aromatic Hydrocarbons in Diffuse Clouds. II. Results. *Valery Le Page, Theodore P. Snow, & Veronica M. Bierbaum.* 584, 316 (2003)

Abundances and Physical Conditions in the Interstellar Gas toward HD 185418. *Paule Sonnentrucker, Scott D. Friedman, Daniel E. Welty, Donald G. York, & Theodore P. Snow.* 596, 350 (2003)

SNOWDEN, S. L. *Chandra* Observation of Luminous and Ultraluminous X-Ray Binaries in M101. *K. Mukai, W. D. Pence, S. L. Snowden, & K. D. Kuntz.* 582, 184 (2003)

Diffuse X-Ray Emission from M101. *K. D. Kuntz, S. L. Snowden, W. D. Pence, & K. Mukai.* 588, 264 (2003)

SNYDER, L. E. A Sensitive Very Large Array Search for Small-Scale Glycine Emission toward OMC-1. *J. M. Hollis, J. A. Pedelty, L. E. Snyder, P. R. Jewell, F. J. Lovas, Patrick Palmer, & S.-Y. Liu.* 588, 353 (2003)

A Survey of Acetic Acid toward Hot Molecular Cores. *A. Remijan, L. E. Snyder, D. N. Friedel, S.-Y. Liu, & R. Y. Shah.* 590, 314 (2003)

Kinematics of the SGR B2 (N-LMH) Molecular Core. *Jan M. Hollis, J. A. Pedelty, D. A. Boboltz, S.-Y. Liu, L. E. Snyder, Patrick Palmer, F. J. Lovas, & P. R. Jewell.* 596, L235 (2003)

SOBOLEV, A. M. Images of Astrophysical Masers and Their Variability in a Turbulent Medium: The 25 GHz Methanol Masers. *A. M. Sobolev, W. D. Watson, & V. A. Okorokov.* 590, 333 (2003)

SOBRITO, G. See BÖTTCHER, M., et al. Coordinated Multiwavelength Observations of BL Lacertae in 2000.

SOCAS-NAVARRO, H. Magnetic Fields in the Quiet Sun: Observational Discrepancies and Unresolved Structure. *H. Socas-Navarro & J. Sánchez Almeida.* 593, 581 (2003)

SOCRATES, ARISTOTLE. Local Radiative Hydrodynamic and Magnetohydrodynamic Instabilities in Optically Thick Media. *Omer Blaes & Aristotle Socrates.* 596, 509 (2003)

SODERBERG, A. M. See FOX, D. W., et al. Discovery of Early Optical Emission from GRB 021211.

A Radio Flare from GRB 020405: Evidence for a Uniform Medium around a Massive Stellar Progenitor. *E. Berger, A. M. Soderberg, D. A. Frail, & S. R. Kulkarni.* 587, L5 (2003)

A Radio Survey of Type Ib and Ic Supernovae: Searching for Engine-driven Supernovae. *E. Berger, S. R. Kulkarni, D. A. Frail, & A. M. Soderberg.* 599, 408 (2003)

SODERBERG, ALICIA M. See BARTH, AARON J., et al. Optical Spectropolarimetry of the GRB 020813 Afterglow.

SOFFITTA, P. See FEROCI, M., et al. The 2001 April Burst Activation of SGR 1900+14: X-Ray Afterglow Emission.

SOFIA, S. Global Parameter and Helioseismic Tests of Solar Variability Models. *L. H. Li, S. Basu, S. Sofia, F. J. Robinson, P. Demarque, & D. B. Guenther.* 591, 1267 (2003)

SOFIA, ULYSSES J. Dust Grain Size Distributions from MRN to MEM. *Geoffrey C. Clayton, Michael J. Wolff, Ulysses J. Sofia, K. D. Gordon, & K. A. Misselt.* 588, 871 (2003)

SOHN, YOUNG-JONG. Raman-scattered He II λ6545 Line in the Symbiotic Star V1016 Cygni. *Hee-Won Lee, Young-Jong Sohn, Young Woon Kang, & Ho-Il Kim.* 598, 553 (2003)

SOIFER, B. T. See GHEZ, A. M., et al. The First Measurement of Spectral Lines in a Short-Period Star Bound to the Galaxy's Central Black Hole: A Paradox of Youth.

SOKASIAN, AARON. Early Structure Formation and Reionization in a Warm Dark Matter Cosmology. *Naoki Yoshida, Aaron Sokasian, Lars Hernquist, & Volker Springel.* 591, L1 (2003)

Early Structure Formation and Reionization in a Cosmological Model with a Running Primordial Power Spectrum. *Naoki Yoshida, Aaron Sokasian, Lars Hernquist, & Volker Springel.* 598, 73 (2003)

SOKER, NOAM. Main-Sequence Stellar Eruption Model for V838 Monocerotis. *Noam Soker & Romuald Tylenda.* 582, L105 (2003)

On the Luminosities and Temperatures of Extended X-Ray Emission from Planetary Nebulae. *Noam Soker & Joel H. Kastner.* 583, 368 (2003)

Abundance Anomalies in the X-Ray Spectra of Planetary Nebulae NGC 7027 and BD +30° 3639. *Holly L. Maness, Saeqa D. Vrtilek, Joel H. Kastner, & Noam Soker.* 589, 439 (2003)

Observed Non–Steady State Cooling and the Moderate Cluster Cooling Flow Model. *Noam Soker & Laurence P. David.* 589, 770 (2003)

A Compact X-Ray Source and Possible X-Ray Jets within the Planetary Nebula Menzel 3. *Joel H. Kastner, Bruce Balick, Eric G. Blackman, Adam Frank, Noam Soker, Saeqa D. Vrtilek, & Jingqiang Li.* 591, L37 (2003)

Magnetic Flares on Asymptotic Giant Branch Stars. *Noam Soker & Joel H. Kastner.* 592, 498 (2003)

Accretion-Induced Collimated Fast Wind Model for η Carinae. *Noam Soker.* 597, 513 (2003)

SOKOLOSKI, J. L. CH Cygni. I. Observational Evidence for a Disk-Jet Connection. *J. L. Sokoloski & S. J. Kenyon.* 584, 1021 (2003)

CH Cygni. II. Optical Flickering from an Unstable Disk. *J. L. Sokoloski & S. J. Kenyon.* 584, 1027 (2003)

SOKOLOV, I. V. Formation of a Sporadic Plasma Jet from a Disrupting Magnetic Flux Tube. *J. I. Sakai, K. Nishi, & I. V. Sokolov.* 584, 1095 (2003)

See ROUSSEV, I. I., et al. A Three-dimensional Model of the Solar Wind Incorporating Solar Magnetogram Observations.

SOKOLOV, IGOR. Probing the Edge of the Solar System: Formation of an Unstable Jet-Sheet. *Merav Opher, Paulett C. Liewer, Tamas I. Gombosi, Ward Manchester, Darren L. DeZeeuw, Igor Sokolov, & Gabor Toth.* 591, L61 (2003)

SOKOLOV, IGOR V. A Three-dimensional Flux Rope Model for Coronal Mass Ejections Based on a Loss of Equilibrium. *Ilia I. Roussev, Terry G. Forbes, Tamas I. Gombosi, Igor V. Sokolov, Darren L. DeZeeuw, & Joachim Birn.* 588, L45 (2003)

SOL, H. Particle Acceleration in Relativistic Jets due to Weibel Instability. *K.-I. Nishikawa, P. Hardee, G. Richardson, R. Preece, H. Sol, & G. J. Fishman.* 595, 555 (2003)

SOLANES, JOSÉ MARÍA. On the Origin of the Inner Structure of Halos. *Alberto Manrique, Andreu Raig, Eduard Salvador-Solé, Teresa Sanchis, & José María Solanes.* 593, 26 (2003)

SOLANKI, S. K. Determining the Inclination of the Rotation Axis of a Sun-like Star. *L. Gizon & S. K. Solanki.* 589, 1009 (2003)

Why Solar Magnetic Flux Concentrations Are Bright in Molecular Bands. *M. Schüssler, S. Shelyag, S. Berdyugina, A. Vögler, & S. K. Solanki.* 597, L173 (2003)

SOLARZ, M. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

SOLHEIM, J. -E. See MUKADEM, ANJUM S., et al. Constraining the Evolution of ZZ Ceti.

SOLLERMAN, JESPER. See TONRY, JOHN L., et al. Cosmological Results from High-z Supernovae.

SOLOMON, P. M. Molecular Gas and Dust at $z = 2.6$ in SMM J14011+0252: A Strongly Lensed Ultraluminous Galaxy, Not a Huge Massive Disk. *D. Downes & P. M. Solomon.* 582, 37 (2003)

The Molecular Disk in the Cloverleaf Quasar. *S. Venturini & P. M. Solomon.* 590, 740 (2003)

SOLOMON, STANLEY C. An Estimate of the Sun's *ROSAT*-PSPC X-Ray Luminosities Using *SNOE*-SXP Measurements. *Philip G. Judge, Stanley C. Solomon, & Thomas R. Ayres.* 593, 534 (2003)

SOMERVILLE, RACHEL S. Star Formation at the Twilight of the Dark Ages: Which Stars Reionized the Universe? *Rachel S. Somerville & Mario Livio.* 593, 611 (2003)

The Epoch of Reionization in Models with Reduced Small-Scale Power. *Rachel S. Somerville, James S. Bullock, & Mario Livio.* 593, 616 (2003)

SOMMER-LARSEN, JESPER. The Density Profile of Cluster-Scale Dark Matter Halos. *Håkon Dahle, Steen Hannestad, & Jesper Sommer-Larsen.* 588, L73 (2003)

Galaxy Formation: Cold Dark Matter, Feedback, and the Hubble Sequence. *Jesper Sommer-Larsen, Martin Götz, & Laura Portinari.* 596, 47 (2003)

SONG, INSEOK. New Members of the TW Hydrae Association, β Pictoris Moving Group, and Tucana/Horologium Association. *Inseok Song, B. Zuckerman, & M. S. Bessell.* 599, 342 (2003)

SONG, L. M. Pair Loading in Gamma-Ray Burst Fireballs and Prompt Emission from Pair-rich Reverse Shocks. *Zhuo Li, Z. G. Dai, T. Lu, & L. M. Song.* 599, 380 (2003)

SONG, YONG-SEON. The Far-Infrared Background Correlation with Cosmic Microwave Background Lensing. *Yong-Seon Song, Asantha Cooray, Lloyd Knox, & Matias Zaldarriaga.* 590, 664 (2003)

SONNABEND, K. The s-Process Branching at ^{185}W. *K. Sonnabend, P. Mohr, K. Vogt, A. Zilges, A. Mengoni, T. Rauscher, H. Beer, F. Käppeler, & R. Gallino.* 583, 506 (2003)

SONNEBORN, G. Constraints on the Ionization Balance of Hot-Star Winds from *FUSE* Observations of O Stars in the Large Magellanic Cloud. *D. Massa, A. W. Fullerton, G. Sonneborn, & J. B. Hutchings.* 586, 996 (2003)

See WAKKER, B. P., et al. The *Far Ultraviolet Spectroscopic Explorer* Survey of O VI Absorption in and near the Galaxy.

See SAVAGE, B. D., et al. Distribution and Kinematics of O VI in the Galactic Halo.

See SEMBACH, K. R., et al. Highly Ionized High-Velocity Gas in the Vicinity of the Galaxy.

SONNEBORN, GEORGE. See MICHAEL, ELI, et al. *Hubble Space Telescope* Observations of High-Velocity Lyα and Hα Emission from Supernova Remnant 1987A: The Structure and Development of the Reverse Shock.

SONNENTRUCKER, P. See THORBURN, J. A., et al. Some Diffuse Interstellar Bands Related to Interstellar C_2 Molecules.

SONNENTRUCKER, PAULE. Observations of C_3 In Translucent Sight Lines. *Takeshi Oka, Julie A. Thorburn, Benjamin J. McCall, Scott D. Friedman, Lewis M. Hobbs, Paule Sonnentrucker, Daniel E. Welty, & Donald G. York.* 582, 823 (2003)

Abundances and Physical Conditions in the Interstellar Gas toward HD 185418. *Paule Sonnentrucker, Scott D. Friedman, Daniel E. Welty, Donald G. York, & Theodore P. Snow.* 596, 350 (2003)

SOSA, RICHARD G. See CLOSE, LAIRD M., et al. High-Resolution Images of Orbital Motion in the Trapezium Cluster: First Scientific Results from the Multiple Mirror Telescope Deformable Secondary Mirror Adaptive Optics System.

SOSZYŃSKI, I. See SCHECHTER, PAUL L., et al. Microlensing of Relativistic Knots in the Quasar HE 1104–1805 AB.

SOURADEEP, T. Cosmic Microwave Background Anisotropy Measurement from Python V. *K. Coble, S. Dodelson, M. Dragovan, K. Ganga, L. Knox, J. Kovac, B. Ratra, & T. Souradeep.* 584, 585 (2003)

SOURADEEP, TARUN. Inhomogeneities in the Microwave Background Radiation Interpreted within the Framework of the Quasi–Steady State Cosmology. *J. V. Narlikar, R. G. Vishwakarma, Amir Hajian, Tarun Souradeep, G. Burbridge, & F. Hoyle.* 585, 1 (2003)

Galactic Foreground Constraints from the Python V Cosmic Microwave Background Anisotropy Data. *Pia Mukherjee, Kim Coble, Mark*

Dragovan, Ken Ganga, John Kovac, Bharat Ratra, & Tarun Souradeep. 592, 692 (2003)

Measuring the Statistical Isotropy of the Cosmic Microwave Background Anisotropy. *Amir Hajian & Tarun Souradeep.* 597, L5 (2003)

SOUTOUL, A. Updated Formula for Calculating Partial Cross Sections for Nuclear Reactions of Nuclei with $Z \leq 28$ and $E > 150$ MeV per Nucleon in Hydrogen Targets. *W. R. Webber, A. Soutoul, J. C. Kish, & J. M. Rockstroh.* 144, 153 (2003)

SOWARDS-EMMERD, DAVID. The Gamma-Ray Blazar Content of the Northern Sky. *David Sowards-Emmerd, Roger W. Romani, & Peter F. Michelson.* 590, 109 (2003)

SOYANO, T. See URATA, Y., et al. Multiband Optical Follow-up Observations of GRB 020813 at the Kiso and Bisei Observatories.

SPAANS, MARCO. Chemical Composition of the Early Universe. *Martin Harwit & Marco Spaans.* 589, 53 (2003)

SPADARO, D. A Transient Heating Model for Coronal Structure and Dynamics. *D. Spadaro, A. F. Lanza, A. C. Lanzafame, J. T. Karpen, S. K. Antiochos, J. A. Klimchuk, & P. J. MacNeice.* 582, 486 (2003)

SPAHR, T. See MATHESON, T., et al. Photometry and Spectroscopy of GRB 03029 and Its Associated Supernova 2003dh: The First Two Months.

SPARKE, L. S. Polar Ring Galaxies and the Tully-Fisher Relation: Implications for the Dark Halo Shape. *E. Iodice, M. Arnaboldi, F. Bournaud, F. Combes, L. S. Sparke, W. van Driel, & M. Capaccioli.* 585, 730 (2003)

SPARKE, LINDA S. An Imaging Survey of Early-Type Barred Galaxies. *Peter Erwin & Linda S. Sparke.* 146, 299 (2003)

SPARKS, W. See MARCONI, A., et al. Is There Really a Black Hole at the Center of NGC 4041? Constraints from Gas Kinematics.

SPARKS, W. B. See TRAN, H. D., et al. Advanced Camera for Surveys Observations of Young Star Clusters in the Interacting Galaxy UGC 10214.

Flaring X-Ray Emission from HST-1, a Knot in the M87 Jet. *D. E. Harris, J. A. Biretta, W. Junor, E. S. Perlman, W. B. Sparks, & A. S. Wilson.* 586, L41 (2003)

See BOUWENS, R. J., et al. Star Formation at $z \sim 6$: i-Dropouts in the Advanced Camera for Surveys Guaranteed Time Observation Fields.

See MEURER, GERHARDT R., et al. The Discovery of Globular Clusters in the Protospiral Galaxy NGC 2915: Implications for Hierarchical Galaxy Evolution.

SPARKS, WARREN M. See SION, EDWARD M., et al. *Hubble Space Telescope* Spectroscopy of the Unexpected 2001 July Outburst of the Dwarf Nova WZ Sagittae.

SPARKS, WILLIAM. See BLAKESLEE, JOHN P., et al. Discovery of Two Distant Type Ia Supernovae in the Hubble Deep Field–North with the Advanced Camera for Surveys.

SPARKS, WILLIAM B. What Do the *Hubble Space Telescope* and *Chandra* Tell Us about the Jet and the Nuclear Region of the Radio Galaxy 3C 270? *Marco Chiaberge, Roberto Gilli, F. Duccio Macchetto, William B. Sparks, & Alessandro Capetti.* 582, 645 (2003)

Month-Timescale Optical Variability in the M87 Jet. *Eric S. Perlman, D. E. Harris, John A. Biretta, William B. Sparks, & F. Duccio Macchetto.* 599, L65 (2003)

SPECIAN, MICHAEL A. Mass-to-Light Ratios of 2dF Galaxies. *Tereasa G. Brainerd & Michael A. Specian.* 593, L7 (2003)

SPECK, ANGELA K. The Dust Ring of Luminous Blue Variable Candidate HD 168625: Infrared Observations and Model Calculations. *Timothy B. O'Hara, Margaret Meixner, Angela K. Speck, Toshiya Ueta, & Matthew Bobrowsky.* 598, 1255 (2003)

SPERGEL, D. N. See BENNETT, C. L., et al. The *Microwave Anisotropy Probe* Mission.

See PAGE, L., et al. The Optical Design and Characterization of the *Microwave Anisotropy Probe*.

See JAROSIK, N., et al. Design, Implementation, and Testing of the *Microwave Anisotropy Probe* Radiometers.

See BENNETT, C. L., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Preliminary Maps and Basic Results.

See JAROSIK, N., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: On-Orbit Radiometer Characterization.

See PAGE, L., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Beam Profiles and Window Functions.

See HINSHAW, G., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Data Processing Methods and Systematic Errors Limits.

See BENNETT, C. L., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Foreground Emission.

See KOMATSU, E., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Tests of Gaussianity.

See HINSHAW, G., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: The Angular Power Spectrum.

See KOGUT, A., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Temperature-Polarization Correlation.

First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Determination of Cosmological Parameters. *D. N. Spergel, L. Verde, H. V. Peiris, E. Komatsu, M. R. Nolta, C. L. Bennett, M. Halpern, G. Hinshaw, N. Jarosik, A. Kogut, M. Limon, S. S. Meyer, L. Page, G. S. Tucker, J. L. Weiland, E. Wollack, & E. L. Wright.* 148, 175 (2003)

See VERDE, L., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Parameter Estimation Methodology.

See PEIRIS, H. V., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Implications for Inflation.

See PAGE, L., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Interpretation of the TT and TE Angular Power Spectrum Peaks.

Primordial Black Holes as Dark Matter: The Power Spectrum and Evaporation of Early Structures. *N. Afshordi, P. McDonald, & D. N. Spergel.* 594, L71 (2003)

SPERGEL, DAVID N. Extrasolar Planet Finding via Optimal Apodized-Pupil and Shaped-Pupil Coronagraphs. *N. Jeremy Kasdin, Robert J. Vanderbei, David N. Spergel, & Michael G. Littman.* 582, 1147 (2003)

Predictions for the Counts of Faint, High-Redshift Galaxies in the Mid-Infrared. *Zoltán Haiman, David N. Spergel, & Edwin L. Turner.* 585, 630 (2003)

Spiderweb Masks for High-Contrast Imaging. *Robert J. Vanderbei, David N. Spergel, & N. Jeremy Kasdin.* 590, 593 (2003)

Notch Filter Masks: Practical Image Masks for Planet-finding Coronagraphs. *Marc J. Kuchner & David N. Spergel.* 594, 617 (2003)

Circularly Symmetric Apodization via Star-Shaped Masks. *Robert J. Vanderbei, David N. Spergel, & N. Jeremy Kasdin.* 599, 686 (2003)

SPEZIALI, R. See VALENTINI, G., et al. Optical and Near-Infrared Photometry of the Type Ia Supernova 2000E in NGC 6951.

SPICZAK, G. M. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

SPIERING, C. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

SPINOGLIO, LUIGI. How Many Active Galaxies and QSOs Will Future Space Missions Detect? *Paola Andreani, Luigi Spinoglio, & Matthew A. Malkan.* 597, 759 (2003)

SPIROCK, T. J. Signature of Avalanche in Solar Flares as Measured by Photospheric Magnetic Fields. *V. I. Abramenko, V. B. Yurchyshyn, H. Wang, T. J. Spirock, & P. R. Goode.* 597, 1135 (2003)

SPIROCK, THOMAS J. Periodic Motion along a Solar Filament Initiated by a Subflare. *Ju Jing, Jeongwoo Lee, Thomas J. Spirock, Yan Xu, Haimin Wang, & G. S. Choe.* 584, L103 (2003)

SPITE, FRANCOIS. See BARBUY, BEATRIZ, et al. Oxygen Abundance in the Template Halo Giant HD 122563.

SPITE, MONIQUE. See BARBUY, BEATRIZ, et al. Oxygen Abundance in the Template Halo Giant HD 122563.

SPRINGEL, VOLKER. Gamma Rays from Intergalactic Shocks. *Uri Keshet, Eli Waxman, Abraham Loeb, Volker Springel, & Lars Hernquist.* 585, 128 (2003)

Early Structure Formation and Reionization in a Warm Dark Matter Cosmology. *Naoki Yoshida, Aaron Sokasian, Lars Hernquist, & Volker Springel.* 591, L1 (2003)

Black Hole Growth and Activity in a Λ Cold Dark Matter Universe. *Tiziana Di Matteo, Rupert A. C. Croft, Volker Springel, & Lars Hernquist.* 593, 56 (2003)

Early Structure Formation and Reionization in a Cosmological Model with a Running Primordial Power Spectrum. *Naoki Yoshida, Aaron Sokasian, Lars Hernquist, & Volker Springel.* 598, 73 (2003)

Mapping the Cosmic Web with Lyα Emission. *Steven R. Furlanetto, Joop Schaye, Volker Springel, & Lars Hernquist.* 599, L1 (2003)

SPYROMILIO, JASON. See TONRY, JOHN L., et al. Cosmological Results from High-z Supernovae.

SQUIRES, G. K. See FOSBURY, R. A. E., et al. Massive Star Formation in a Gravitationally Lensed H II Galaxy at $z = 3.357$.

SRAMEK, RICHARD A. Radio Emission from SN 2001gd in NGC 5033. *Christopher J. Stockdale, Kurt W. Weiler, Schuyler D. Van Dyk, Marcos J. Montes, Nino Panagia, Richard A. Sramek, M. A. Perez-Torres, & J. M. Marcaide.* 592, 900 (2003)

SREEKUMAR, P. EGRET Upper Limits on the High-Energy Gamma-Ray Emission of Galaxy Clusters. *O. Reimer, M. Pohl, P. Sreekumar, & J. R. Mattox.* 588, 155 (2003)

The Gamma-Ray Blazar PKS 0208−512 from MeV to GeV Energies. *J. Gregory Stacy, W. Thomas Vestrand, & P. Sreekumar.* 598, 216 (2003)

SRINIVASAN, R. See AKERLOF, C. W., et al. A Search for Correlations of TeV Gamma Rays with Ultra–High-Energy Cosmic Rays.

SRIRAM, K. Flux Enhancement in the Inner Region of a Geometrically and Optically Thick Accretion Disk. *R. Misra & K. Sriram.* 584, 981 (2003)

ST. CYR, O. C. Constraints on Coronal Mass Ejection Dynamics from Simultaneous Radio and White-Light Observations. *M. J. Reiner, A. Vourlidas, O. C. St. Cyr, J. T. Burkepile, R. A. Howard, M. L. Kaiser, N. P. Prestage, & J.-L. Bougeret.* 590, 533 (2003)

Electron Temperature and Speed Measurements in the Low Solar Corona: Results From the 2001 June Eclipse. *Nelson L. Reginald, O. C. St. Cyr, Joseph M. Davila, & Jeffrey W. Brosius.* 599, 596 (2003)

STABELL, ROLF. See COLLEY, WESLEY N., et al. Around-the-Clock Observations of the Q9057+561A,B Gravitationally Lensed Quasar. II. Results for the Second Observing Season.

STACEY, G. J. CO $J = 7 \rightarrow 6$ Observations of NGC 253: Cosmic-Ray–heated Warm Molecular Gas. *C. M. Bradford, T. Nikola, G. J. Stacey, A. D. Bolatto, J. M. Jackson, M. L. Savage, J. A. Davidson, & S. J. Higdon.* 586, 891 (2003)

Infrared Space Observatory Long-Wavelength Spectrometer Spectroscopy of Star-forming Regions in M33. *S. J. U. Higdon, J. L. Higdon, J. M. van der Hulst, & G. J. Stacey.* 592, 161 (2003)

STACY, J. GREGORY. The Gamma-Ray Blazar PKS 0208−512 from MeV to GeV Energies. *J. Gregory Stacy, W. Thomas Vestrand, & P. Sreekumar.* 598, 216 (2003)

STADEL, JOACHIM. The Structural Evolution of Substructure. *Eric Hayashi, Julio F. Navarro, James E. Taylor, Joachim Stadel, & Thomas Quinn.* 584, 541 (2003)

See NAPOLITANO, NICOLA R., et al. Intracluster Stellar Population Properties from *N*-Body Cosmological Simulations. I. Constraints at $z = 0$.

The Origin of Cores and Density Profiles of Gaseous Baryonic Structures. *Steen H. Hansen & Joachim Stadel.* 595, L37 (2003)

STAFAST, HERBERT. Accurate Laboratory Wavelengths of the Vacuum Ultraviolet $A(\Upsilon' = 3) - X(\Upsilon'' = 0)$ Band of $^{12}C^{17}O$ and $^{12}C^{18}O$. *Christine Steinmann, Erich G. Rohwer, & Herbert Stafast.* 590, L123 (2003)

Accurate Laboratory Wavelengths of the Vacuum Ultraviolet $A(v' = 3)$–$X(v'' = 0)$ Band of $^{12}C^{17}O$ and $^{12}{}^{18}O$: Erratum (ApJ, 590, L123 [2003]). *Christine M. Steinmann, Erich G. Rohwer, & Herbert Stafast.* 591, L167 (2003) (Orig. paper in 590, L123 (2003))

STAHLER, STEVEN W. Trapped Protostellar Winds and Their Breakout. *Francis P. Wilkin & Steven W. Stahler.* 590, 917 (2003)

STAIRS, I. H. See MCLAUGHLIN, M. A., et al. PSR J1847−0130: A Radio Pulsar with Magnetar Spin Characteristics.

STAIRS, INGRID H. Geodetic Precession and Timing of the Relativistic Binary Pulsars PSR B1534+12 and PSR 1913+16. *Maciej Konacki, Alex Wolszczan, & Ingrid H. Stairs.* 589, 495 (2003)

STALIN, C. S. Clear Evidence for Intranight Optical Variability in Radio-quiet Quasars. *Gopal-Krishna, C. S. Stalin, Ram Sagar, & Paul J. Wiita.* 586, L25 (2003)

STANCIL, P. C. The Molecular Line Opacity of MgH in Cool Stellar Atmospheres. *P. F. Weck, A. Schweitzer, P. C. Stancil, P. H. Hauschildt, & K. Kirby.* 582, 1059 (2003)

$B' \leftarrow X$ Rovibrationally Resolved Photodissociation of ^{24}MgH. *P. F. Weck, P. C. Stancil, & K. Kirby.* 582, 1263 (2003)

The Molecular Continuum Opacity of ^{24}MgH in Cool Stellar Atmospheres. *P. F. Weck, A. Schweitzer, P. C. Stancil, P. H. Hauschildt, & K. Kirby.* 584, 459 (2003)

New Theoretical Line List for the $B'\ ^2\Sigma^+ \leftarrow X\ ^2\Sigma^+$ System of ^{24}MgH. *S. Skory, P. F. Weck, P. C. Stancil, & K. Kirby.* 148, 599 (2003)

STANEK, K. Z. See MATHESON, T., et al. The Spectroscopic Variability of GRB 021004.

See GARNAVICH, P. M., et al. Discovery of the Low-Redshift Optical Afterglow of GRB 011121 and Its Progenitor Supernova SN 2001ke.

See BERSIER, D., et al. The Strongly Polarized Afterglow of GRB 020405.

See BERSIER, D., et al. The Unusual Optical Afterglow of the Gamma-Ray Burst GRB 021004: Color Changes and Short-Timescale Variability.

Spectroscopic Discovery of the Supernova 2003dh Associated with GRB 030329. *K. Z. Stanek, T. Matheson, P. M. Garnavich, P. Martini, P. Berlind, N. Caldwell, P. Challis, W. R. Brown, R. Schild, K. Krisciunas, M. L. Calkins, J. C. Lee, N. Hathi, R. A. Jansen, R. Windhorst, L. Echevarria, D. J. Eisenstein, B. Pindor, E. W. Olszewski, P. Harding, S. T. Holland, & D. Bersier.* 591, L17 (2003)

Reanalysis of Very Large Telescope Data for M83 with Image Subtraction—Ninefold Increase in Number of Cepheids. *A. Z. Bonanos & K. Z. Stanek.* 591, L111 (2003)

Limits on Eclipses of the Pre–Main-Sequence Star KH 15D in the First Half of the 20th Century. *Joshua N. Winn, Peter M. Garnavich, K. Z. Stanek, & Dimitar D. Sasselov.* 593, L121 (2003)

High-Precision Photometry of the Gamma-Ray Burst GRB 020813: The Smoothest Afterglow Yet. *L. T. Laursen & K. Z. Stanek.* 597, L107 (2003)

See MATHESON, T., et al. Photometry and Spectroscopy of GRB 03029 and Its Associated Supernova 2003dh: The First Two Months.

STANEK, KRZYSZTOF Z. See MAZZALI, PAOLO A., et al. The Type Ic Hypernova SN 2003dh/GRB 030329.

STANFORD, S. A. The Fundamental Plane at $z = 1.27$: First Calibration of the Mass Scale of Red Galaxies at Redshifts $z > 1$. *Pieter G. van Dokkum & S. A. Stanford.* 585, 78 (2003)

Near-Infrared Properties of Galaxy Clusters: Luminosity as a Binding Mass Predictor and the State of Cluster Baryons. *Yen-Ting Lin, Joseph J. Mohr, & S. A. Stanford.* 591, 749 (2003)

See REULAND, MICHIEL, et al. Giant Lyα Nebulae Associated with High-Redshift Radio Galaxies.

See FOSBURY, R. A. E., et al. Massive Star Formation in a Gravitationally Lensed H II Galaxy at $z = 3.357$.

The K-selected Butcher-Oemler Effect. *Roberto De Propris, S. A. Stanford, Peter R. Eisenhardt, & Mark Dickinson.* 598, 20 (2003)

STANGHELLINI, CARLO. See SIEMIGINOWSKA, ANETA, et al. *Chandra* Discovery of an X-Ray Jet and Extended X-Ray Structure in $z = 0.63$ Quasar B2 0738+313.

STANGHELLINI, LETIZIA. Space Telescope Imaging Spectrograph Slitless Observations of Small Magellanic Cloud Planetary Nebulae: A Study on Morphology, Emission-Line Intensity, and Evolution. *Letizia Stanghellini, Richard A. Shaw, Bruce Balick, Max Mutchler, J. Chris Blades, & Eva Villaver.* 596, 997 (2003)

Post–Asymptotic Giant Branch Evolution in the Large Megellanic Cloud: A Study of the Central Stars of Planetary Nebulae. *Eva Villaver, Letizia Stanghellini, & Richard A. Shaw.* 597, 298 (2003)

Hubble Space Telescope Observations of Three Very Young Star Clusters in the Small Magellanic Cloud. *Letizia Stanghellini, Eva Villaver, Richard A. Shaw, & Max Mutchler.* 598, 1000 (2003)

STANIĆ, N. The Line Emission Region in III Zw 2: Kinematics and Variability. *L. Č. Popović, E. G. Mediavilla, E. Bon, N. Stanić, & A. Kubičela.* 599, 185 (2003)

STANIMIROVIĆ, S. Does Tiny-Scale Atomic Structure Exist in the Interstellar Medium? *S. Stanimirović, J. M. Weisberg, A. Hedden, K. E. Devine, & J. T. Green.* 598, L23 (2003)

STANIMIROVIĆ, SNEŽANA. Detection of OH Absorption against PSR B1849+00. *Snežana Stanimirović, Joel M. Weisberg, John M. Dickey, Anton de la Fuente, Kathryn Devine, Abigail Hedden, & Stuart B. Anderson.* 592, 953 (2003)

STANKE, THOMAS. Molecular Outflows in The Young Open Cluster IC 348. *Jochen Eislöffel, Dirk Froebrich, Thomas Stanke, & Mark J. McCaughrean.* 595, 259 (2003)

STANTON, J. F. The Radio Spectrum of the Phenyl Radical. *R. J. McMahon, M. C. McCarthy, C. A. Gottlieb, J. B. Dudek, J. F. Stanton, & P. Thaddeus.* 590, L61 (2003)

STAPELFELDT, KARL R. The Circumstellar Disk of the Butterfly Star in Taurus. *Sebastian Wolf, Deborah L. Padgett, & Karl R. Stapelfeldt.* 588, 373 (2003)

Hubble Space Telescope WFPC2 Imaging of the Disk and Jet of HV Tauri C. *Karl R. Stapelfeldt, François Ménard, Alan M. Watson, John E. Krist, Catherine Dougados, Deborah L. Padgett, & Wolfgang Brandner.* 589, 410 (2003)

STARK, D. P. Clustered Star Formation in W75 N. *D. S. Shepherd, L. Testi, & D. P. Stark.* 584, 882 (2003)

STARK, MICHAEL J. Doppler Modulation of X-Ray Lines in Cygnus X-3. *Michael J. Stark & Malinda Saia.* 587, L101 (2003)

STARRFIELD, S. See NESS, J.-U., et al. A *Chandra* Low Energy Transmission Grating Spectrometer Observation of V4743 Sagittarii: A Supersoft X-Ray Source and a Violently Variable Light Curve.

A New $^{17}F(p, \gamma)^{18}Ne$ Reaction Rate and Its Implications for Nova Nucleosynthesis. *S. Parete-Koon, W. R. Hix, M. S. Smith, S. Starrfield, D. W. Bardayan, M. W. Guidry, & A. Mezzacappa.* 598, 1239 (2003)

STARRFIELD, SUMNER. See DRAKE, JEREMY J., et al. The Extraordinary X-Ray Light Curve of the Classical Nova V1494 Aquilae (1999 No. 2) in Outburst: The Discovery of Pulsations and a "Burst."

See SION, EDWARD M., et al. *Hubble Space Telescope* Spectroscopy of the Unexpected 2001 July Outburst of the Dwarf Nova WZ Sagittae.

STAUFFER, JOHN R. New Low-Mass Members of the Taurus Star-forming Region. *K. L. Luhman, Cesar Briceno, John R. Stauffer, Lee Hartmann, D. Barrado y Navascues, & Nelson Caldwell.* 590, 348 (2003)

A Census of the Young Cluster IC 348. *K. L. Luhman, John R. Stauffer, A. A. Muench, G. H. Rieke, E. A. Lada, J. Bouvier, & C. J. Lada.* 593, 1093 (2003)

The Distances to Open Clusters from Main-Sequence Fitting. I. New Models and a Comparison with the Properties of the Hyades Eclipsing Binary VB 22. *Marc H. Pinsonneault, Donald M. Terndrup, Robert B. Hanson, & John R. Stauffer.* 598, 588 (2003)

STAVELEY-SMITH, LISTER. The Magellanic Stream, High-Velocity Clouds, and the Sculptor Group. *Mary E. Putman, Lister Staveley-Smith, Kenneth C. Freeman, Brad K. Gibson, & David G. Barnes.* 586, 170 (2003)

A Neutral Hydrogen Survey of the Large Magellanic Cloud: Aperture Synthesis and Multibeam Data Combined. *Sungeun Kim, Lister Staveley-Smith, Michael A. Dopita, Robert J. Sault, Youngung Lee, & You-Hua Chu.* 148, 473 (2003)

STAWARZ, L. High-Energy Gamma Rays From FR I Jets. *L. Stawarz, M. Sikora, & M. Ostrowski.* 597, 186 (2003)

STEBBINS, ALBERT. See SZALAY, ALEXANDER S., et al. Karhunen-Loève Estimation of the Power Spectrum Parameters from the Angular Distribution of Galaxies in Early Sloan Digital Sky Survey Data.

STEBOR, NATE C. An Instrument for Investigating the Large Angular Scale Polarization of the Cosmic Microwave Background. *Brian G. Keating, Christopher W. O'Dell, Joshua O. Gundersen, Lucio Piccirillo, Nate C. Stebor, & Peter T. Timbie.* 144, 1 (2003)

STECKER, F. W. Modeling the TeV Gamma-Ray Spectra of Two Low-Redshift Active Galactic Nuclei: Markarian 501 and Markarian 421. *A. Konopelko, A. Mastichiadis, J. Kirk, O. C. de Jager, & F. W. Stecker.* 597, 851 (2003)

STECKLUM, B. See KLOSE, S., et al. The Very Faint *K*-Band Afterglow of GRB 020819 and the Dust Extinction Hypothesis of the Dark Bursts.

NGC 2264 IRS 1: The Central Engine and Its Cavity. *K. Schreyer, B. Stecklum, H. Linz, & Th. Henning.* 599, 334 (2003)

See GREINER, J., et al. GRB 011121: A Collimated Outflow into Wind-blown Surroundings.

See FELDT, M., et al. Discovery of a Candidate for the Central Star of the Ultracompact H II Region G5.89−0.39.

STEEGHS, D. Dynamical Evidence for a Black Hole in GX 339−4. *R. I. Hynes, D. Steeghs, J. Casares, P. A. Charles, & K. O'Brien.* 583, L95 (2003)

See BERSIER, D., et al. The Unusual Optical Afterglow of the Gamma-Ray Burst GRB 021004: Color Changes and Short-Timescale Variability.

Bowen Flourescence from the Companion Star in X1822−371. *J. Casares, D. Steeghs, R. I. Hynes, P. A. Charles, & K. O'Brien.* 590, 1041 (2003)

STEELE, D. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

STEENBRUGGE, K. C. See CRENSHAW, D. M., et al. Simultaneous Ultraviolet and X-Ray Spectroscopy of the Seyfert 1 Galaxy NGC 5548. I. Physical Conditions in the Ultraviolet Absorbers.

STEENBRUGGE, KATRIEN. Contrasting the Ultraviolet and X-Ray O VI Column Density Inferred for the Outflow in NGC 5548. *Nahum Arav, Jelle Kaastra, Katrien Steenbrugge, Bert Brinkman, Rick Edelson, Kirk T. Korista, & Martijn de Kool.* 590, 174 (2003)

STEENBRUGGE, KATRIEN C. A Long Look at NGC 3783 with the *XMM-Newton* Reflection Grating Spectrometer. *Ehud Behar, Andrew P. Rasmussen, Alexander J. Blustin, Masao Sako, Steven M. Kahn, Jelle S. Kaastra, Graziella Branduardi-Raymont, & Katrien C. Steenbrugge.* 598, 232 (2003)

STEFANIK, R. P. See LOBEL, A., et al. High-Resolution Spectroscopy of the Yellow Hypergiant ρ Cassiopeiae from 1993 through the Outburst of 2000–2001.

STEFFEN, A. T. See CHAPMAN, S. C., et al. The Properties of Microjansky Radio Sources in the Hubble Deep Field–North, SSA 13, and SSA 22 Fields.

Imaging Large-Scale Structure in the X-Ray Sky. *Yuxuan Yang, R. F. Mushotzky, A. J. Barger, L. L. Cowie, D. B. Sanders, & A. T. Steffen.* 585, L85 (2003)

The Changing Active Galactic Nucleus Population. *A. T. Steffen, A. J. Barger, L. L. Cowie, R. F. Mushotzky, & Y. Yang.* 596, L23 (2003)

STEFFEN, P. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

STEIDEL, C. See WEBB, T. M., et al. The Canada–United Kingdom Deep Submillimeter Survey. V. The Submillimeter Properties of Lyman Break Galaxies.

STEIDEL, CHARLES C. Galaxies and Intergalactic Matter at Redshift $z \sim 3$: Overview. *Kurt L. Adelberger, Charles C. Steidel, Alice E. Shapley, & Max Pettini.* 584, 45 (2003)

Rest-Frame Ultraviolet Spectra of $z \sim 3$ Lyman Break Galaxies. *Alice E. Shapley, Charles C. Steidel, Max Pettini, & Kurt L. Adelberger.* 588, 65 (2003)

Hα Spectroscopy of Galaxies at $z > 2$: Kinematics and Star Formation. *Dawn K. Erb, Alice E. Shapley, Charles C. Steidel, Max Pettini, Kurt L. Adelberger, Matthew P. Hunt, Alan F. M. Moorwood, & Jean-Gabriel Cuby.* 591, 101 (2003)

Lyman Break Galaxies at Redshift $z \sim 3$: Survey Description and Full Data Set. *Charles C. Steidel, Kurt L. Adelberger, Alice E. Shapley, Max Pettini, Mark Dickenson, & Mauro Giavalisco.* 592, 728 (2003)

See MADGWICK, DARREN S., et al. The DEEP2 Galaxy Redshift Survey: Spectral Classification of Galaxies at $z \sim 1$.

STEIGMAN, GARY. On the Variation of Deuterium and Oxygen Abundances in the Local Interstellar Medium. *Gary Steigman.* 586, 1120 (2003)

STEIN, R. F. See BOGDAN, T. J., et al. Waves in the Magnetized Solar Atmosphere. II. Waves from Localized Sources in Magnetic Flux Concentrations.

STEIN, ROBERT F. What Causes *p*-Mode Asymmetry Reversal? *Dali Georgobiani, Robert F. Stein, & Åke Nordlund.* 596, 698 (2003)

On the Origin of the Basal Emission from Stellar Atmospheres: Analysis of Solar C II Lines. *Philip G. Judge, Mats Carlsson, & Robert F. Stein.* 597, 1158 (2003)

STEINACKER, J. Detection of Gaps in Circumstellar Disks. *J. Steinacker & Th. Henning.* 583, L35 (2003)

CO Depletion and Deuterium Fractionation in Prestellar Cores. *A. Bacmann, B. Lefloch, C. Ceccarelli, J. Steinacker, A. Castets, & L. Loinard.* 585, L55 (2003)

STEINLE, H. See GRANDI, P., et al. *BeppoSAX* Observations of Centaurus A: The Hard Continuum and the Iron-Line Feature.

STEINMANN, CHRISTINE. Accurate Laboratory Wavelengths of the Vacuum Ultraviolet $A(\Upsilon' = 3) - X(\Upsilon'' = 0)$ Band of $^{12}C^{17}O$ and $^{12}C^{18}O$. *Christine Steinmann, Erich G. Rohwer, & Herbert Stafast.* 590, L123 (2003)

STEINMANN, CHRISTINE M. Accurate Laboratory Wavelengths of the Vacuum Ultraviolet $A(v' = 3)$–$X(v'' = 0)$ Band of $^{12}C^{17}O$ and ^{1218}O: Erratum (ApJ, 590, L123 [2003]). *Christine M. Steinmann, Erich G. Rohwer, & Herbert Stafast.* 591, L167 (2003) (Orig. paper in 590, L123 (2003))

STEINMETZ, MATTHIAS. Simulations of Galaxy Formation in a ΛCDM Universe. III. The Dissipative Formation of an Elliptical Galaxy. *Andrés Meza, Julio F. Navarro, Matthias Steinmetz, & Vincent R. Eke.* 590, 619 (2003)

Simulations of Galaxy Formation in a Λ Cold Dark Matter Universe. I. Dynamical and Photometric Properties of a Simulated Disk Galaxy. *Mario G. Abadi, Julio F. Navarro, Matthias Steinmetz, & Vincent R. Eke.* 591, 499 (2003)

On the Nature of the Ringlike Structure in the Outer Galactic Disk. *Amina Helmi, Julio F. Navarro, Andrés Meza, Matthias Steinmetz, & Vincent R. Eke.* 592, L25 (2003)

Simulations of Galaxy Formation in a Λ Cold Dark Matter Universe. II. The Fine Structure of Simulated Galactic Disks. *Mario G. Abadi, Julio F. Navarro, Matthias Steinmetz, & Vincent R. Eke.* 597, 21 (2003)

STELLA, L. Coupling between Periodic and Aperiodic Variability in SAX J1808.4−3658. *M. T. Menna, L. Burderi, L. Stella, N. Robba, & M. van der Klis.* 589, 503 (2003)

See ISRAEL, G. L., et al. The Infrared Counterpart to the Anomalous X-Ray Pulsar 1RXS J170849−400910.

BeppoSAX Serendipitous Discovery of the X-Ray Pulsar SAX J1802.7−2017. *G. Augello, R. Iaria, N. R. Robba, T. Di Salvo, L. Burderi, G. Lavagetto, & L. Stella.* 596, L63 (2003)

The Evolution of the High-Energy Tail in the Quiescent Spectrum of the Soft X-Ray Transient Aquila X-1. *S. Campana & L. Stella.* 597, 474 (2003)

See ISRAEL, G. L., et al. Unveiling the Nature of the 321 Second Modulation in RX J0806.3+1527: Near-Simultaneous *Chandra* and Very Large Telescope Observations.

The Glitches of the Anomalous X-Ray Pulsar 1RXS J170849.0−400910. *S. Dall'Osso, G. L. Israel, L. Stella, A. Possenti, & E. Perozzi.* 599, 485 (2003)

STELLA, LUIGI. Evidence of a Cyclotron Feature in the Spectrum of the Anomalous X-Ray Pulsar 1RXS J170849−400910. *Nanda Rea, Gian Luca Israel, Luigi Stella, Tim Oosterbroek, Sandro Mereghetti, Lorella Angelini, Sergio Campana, & Stefano Covino.* 586, L65 (2003)

Bondi Accretion and the Problem of the Missing Isolated Neutron Stars. *Rosalba Perna, Ramesh Narayan, George Rybicki, Luigi Stella, & Aldo Treves.* 594, 936 (2003)

STELLINGWERF, ROBERT F. Classical Cepheid Pulsation Models. IX. New Input Physics. *Silvia Petroni, Giuseppe Bono, Marcella Marconi, & Robert F. Stellingwerf.* 599, 522 (2003)

STENCEL, R. E. Mid-Infrared Imaging Polarimetry of NGC 7027. *C. A. Jurgenson, R. E. Stencel, D. S. Theil, D. I. Klebe, & T. Ueta.* 582, L35 (2003)

STEPANIAN, J. A. A Multiwavelength Study of Narrow-Line Seyfert 1 Galaxies from the Second Byurakan Survey. *J. A. Stepanian, E. Benítez, Y. Krongold, I. Cruz-González, J. A. de Diego, V. Chavushyan, R. Mújica, D. Dultzin-Hacyan, & T. Verdugo.* 588, 746 (2003)

STEPHEN, J. B. *BeppoSAX* Average Spectra of Seyfert Galaxies. *A. Malizia, L. Bassani, J. B. Stephen, G. Di Cocco, F. Fiore, & A. J. Dean.* 589, L17 (2003)

STEPHENS, BRANSON C. Magnetic Braking and Viscous Damping of Differential Rotation in Cylindrical Stars. *James N. Cook, Stuart L. Shapiro, & Branson C. Stephens.* 599, 1272 (2003)

STERKEN, C. See GREINER, J., et al. GRB 011121: A Collimated Outflow into Wind-blown Surroundings.

STERLING, ALPHONSE C. Imaging and Spectroscopic Investigations of a Solar Coronal Wave: Properties of the Wave Front and Associated Erupting Material. *Louise K. Harra & Alphonse C. Sterling.* 587, 429 (2003)

Tether-cutting Energetics of a Solar Quiet-Region Prominence Eruption. *Alphonse C. Sterling & Ronald L. Moore.* 599, 1418 (2003)

STERN, B. Observations of Giant Outbursts from Cygnus X-1. *S. Golenetskii, R. Aptekar, D. Frederiks, E. Mazets, V. Palshin, K. Hurley, T. Cline, & B. Stern.* 596, 1113 (2003)

STERN, D. Discovery of a Clustered Quasar Pair at $z \approx 5$: Biased Peaks in Early Structure Formation. *S. G. Djorgovski, D. Stern, A. A. Mahabal, & R. Brunner.* 596, 67 (2003)

See FOSBURY, R. A. E., et al. Massive Star Formation in a Gravitationally Lensed H II Galaxy at $z = 3.357$.

STERN, DANIEL. An Obscured Radio Galaxy at High Redshift. *Michiel Reuland, Wil van Breugel, Huub Röttgering, Wim de Vries, Carlos De Breuk, & Daniel Stern.* 582, L71 (2003)

Constraints on the Equation of State of Dark Energy and the Hubble Constant from Stellar Ages and the Cosmic Microwave Background. *Raul Jimenez, Licia Verde, Tommaso Treu, & Daniel Stern.* 593, 622 (2003)

Gemini-South + FLAMINGOS Demonstration Science: Near-IR Spectroscopy of the $z = 5.77$ Quasar SDSS J083643.85+005453.3. *Daniel Stern, Pat Hall, L. Felipe Barrientos, Andrew J. Bunker, Richard Elston, M. J. Ledlow, S. Nicholas Raines, & Jon Willis.* 596, L39 (2003)

The Serendipitous Extragalactic X-Ray Source Identification Program. I. Characteristics of the Hard X-Ray Sample. *Fiona A. Harrison, Megan E. Eckart, Peter H. Mao, David J. Helfand, & Daniel Stern.* 596, 944 (2003)

STERNBERG, A. See GENZEL, R., et al. The Stellar Cusp around the Supermassive Black Hole in the Galactic Center.

Molecular Hydrogen Excitation in Ultraluminous Infrared Galaxies. *R. I. Davies, A. Sternberg, M. Lehnert, & L. E. Tacconi-Garman.* 597, 907 (2003)

The Nature of Starburst Activity in M82. *N. M. Förster Schreiber, R. Genzel, D. Lutz, & A. Sternberg.* 599, 193 (2003)

STERNBERG, AMIEL. Ionizing Photon Emission Rates from O- and Early B-Type Stars and Clusters. *Amiel Sternberg, Tadziu L. Hoffmann, & A. W. A. Pauldrach.* 599, 1333 (2003)

STEVENS, I. R. An X-Ray Investigation of the NGC 346 Field in the Small Magellanic Cloud. II. The Field Population. *Y. Nazé, J. M. Hartwell, I. R. Stevens, J. Manfroid, S. Marchenko, M. F. Corcoran, A. F. J. Moffat, & G. Skalkowski.* 586, 983 (2003)

STEVENS, J. A. A SCUBA Galaxy in the Protocluster around 53W002 at $z = 2.4$. *Ian Smail, R. J. Ivison, D. G. Gilbank, J. S. Dunlop, W. C. Keel, K. Motohara, & J. A. Stevens.* 583, 551 (2003)

Chandra Detections of SCUBA Galaxies around High-z Radio Sources. *Ian Smail, C. A. Scharf, R. J. Ivison, J. A. Stevens, R. G. Bower, & J. S. Dunlop.* 599, 86 (2003)

STEYERT, DAVID. Infrared Observations during the Secondary Eclipse of HD 209458b. I. 3.6 Micron Occultation Spectroscopy Using the Very Large Telescope. *L. Jeremy Richardson, Drake Deming, Guenter Wiedemann, Cedric Goukenleuque, David Steyert, Joseph Harrington, & Larry W. Esposito.* 584, 1053 (2003)

STIAVELLI, M. See MARCONI, A., et al. Is There Really a Black Hole at the Center of NGC 4041? Constraints from Gas Kinematics.

STIFF, D. A. Substructure in the Andromeda Galaxy Globular Cluster System. *K. M. Perrett, D. A. Stiff, D. A. Hanes, & T. J. Bridges.* 589, 790 (2003)

STILL, M. The Origin of Soft X-Rays in DQ Herculis. *K. Mukai, M. Still, & F. A. Ringwald.* 594, 428 (2003)

STILL, MARTIN. An *XMM-Newton* Observation of Nova LMC 1995: A Bright Supersoft X-Ray Source. *Marina Orio, Wouter Hartmann, Martin Still, & Jochen Greiner.* 594, 435 (2003)

Coronal Element Abundances of the Post–Common-Envelope Binary V471 Tauri with *ASCA*. *Martin Still & Gaitee Hussain.* 597, 1059 (2003)

STINEBRING, DANIEL R. Pulsar Scintillation Arcs. I. Frequency Dependence. *Alex S. Hill, Daniel R. Stinebring, Henry A. Barnor, Daniel E. Berwick, & Aaron B. Webber.* 599, 457 (2003)

ST-LOUIS, N. Discovery of Highly Dynamic Matter Enhancements along the Polar Axis and Equatorial Plane in the Luminous Blue Variable Binary HD 5980. *A. Villar-Sbaffi, Anthony F. J. Moffat, & N. St-Louis.* 590, 483 (2003)

STOCKDALE, CHRISTOPHER J. Radio Emission from SN 2001gd in NGC 5033. *Christopher J. Stockdale, Kurt W. Weiler, Schuyler D. Van Dyk, Marcos J. Montes, Nino Panagia, Richard A. Sramek, M. A. Perez-Torres, & J. M. Marcaide.* 592, 900 (2003)

STOCKE, JOHN T. *Chandra* Observations of A2029: The Dark Matter Profile Down to below $0.01 r_{vir}$ in an Unusually Relaxed Cluster. *Aaron D. Lewis, David A. Buote, & John T. Stocke.* 586, 135 (2003)

Probing the Size of Low-Redshift Lyα Absorbers. *Jessica L. Rosenberg, Rajib Ganguly, Mark L. Giroux, & John T. Stocke.* 591, 677 (2003)

STOCKON, ALAN N. The Metallicities of Star-forming Galaxies at Intermediate Redshifts $0.47 < z < 0.92$. *Simon J. Lilly, C. Marcella Carollo, & Alan N. Stockon.* 597, 730 (2003)

STOCKTON, ALAN. See COLLEY, WESLEY N., et al. Around-the-Clock Observations of the Q9057+561A,B Gravitationally Lensed Quasar. II. Results for the Second Observing Season.

STOEGER, WILLIAM R. Relativistic Cosmology Number Counts and the Luminosity Function. *Marcelo B. Ribeiro & William R. Stoeger.* 592, 1 (2003)

STOKSTAD, R. G. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

STOLOVY, S. R. *Hubble Space Telescope* Paα and 1.9 Micron Imaging of Sagittarius A West. *N. Z. Scoville, S. R. Stolovy, M. Rieke, M. Christopher, & F. Yusef-Zadeh.* 594, 294 (2003)

STOMSKI, P. See COLAVITA, M., et al. Observations of DG Tauri with the Keck Interferometer.

STONE, E. C. See SLOCUM, P. L., et al. Elemental Fractionation in Small Solar Energetic Particle Events.

STONE, J. M. Local Three-dimensional Simulations of Magnetorotational Instability in Radiation-dominated Accretion Disks. *N. J. Turner, J. M. Stone, J. H. Krolik, & T. Sano.* 593, 992 (2003)

STONE, JAMES M. Local Magnetohydrodynamic Models of Layered Accretion Disks. *Timothy Fleming & James M. Stone.* 585, 908 (2003)

A Local One-Zone Model of Magnetohydrodynamic Turbulence in Dwarf Nova Disks. *Takayoshi Sano & James M. Stone.* 586, 1297 (2003)

Spectral Properties of Compressible Magnetohydrodynamic Turbulence from Numerical Simulations. *Jason G. Verstuto, Eve C. Ostriker, & James M. Stone.* 590, 858 (2003)

Analysis of Clumps in Molecular Cloud Models: Mass Spectrum, Shapes, Alignment, and Rotation. *Charles F. Gammie, Yen-Ting Lin, James M. Stone, & Eve C. Ostriker.* 592, 203 (2003)

Three-Dimensional Simulations of Parker, Magneto-Jeans, and Swing Instabilities in Shearing Galactic Gas Disks: Erratum (ApJ, 581, 1080 [2002]). *Woong-Tae Kim, Eve C. Ostriker, & James M. Stone.* 595, 574 (2003) (Orig. paper in 581, 1080 (2002))

Magnetorotationally Driven Galactic Turbulence and the Formation of Giant Molecular Clouds. *Woong-Tae Kim, Eve C. Ostriker, & James M. Stone.* 599, 1157 (2003)

STORCHI-BERGMANN, THAISA. Evolution of the Nuclear Accretion Disk Emission in NGC 1097: Getting Closer to the Black Hole. *Thaisa Storchi-Bergmann, Rodrigo Nemmen da Silva, Michael Eracleous, Jules P. Halpern, Andrew S. Wilson, Alexei V. Filippenko, Maria Teresa Ruiz, R. Chris Smith, & Neil M. Nagar.* 598, 956 (2003)

STORRIE-LOMBARDI, LISA J. High-Redshift Candidates and the Nature of Small Galaxies in the Hubble Deep Field. *Lisa J. Storrie-Lombardi, Ray J. Weymann, & Rodger I. Thompson.* 591, 623 (2003)

Surveys for $z > 3$ Damped Lyα Absorption Systems: The Evolution of Neutral Gas: Erratum (ApJ, 543, 552 [2000]). *Lisa J. Storrie-Lombardi & Arthur M. Wolfe.* 592, 1263 (2003) (Orig. paper in 543, 552 (2000))

STOTHERS, RICHARD B. Turbulent Pressure in the Envelopes of Yellow Hypergiants and Luminous Blue Variables. *Richard B. Stothers.* 589, 960 (2003)

Radiative Instability in Stellar Envelopes. *Richard B. Stothers.* 599, L103 (2003)

STOUGHTON, CHRISTOPHER. See SZALAY, ALEXANDER S., et al. Karhunen-Loève Estimation of the Power Spectrum Parameters from the Angular Distribution of Galaxies in Early Sloan Digital Sky Survey Data.

STRACHAN, L. Far-Ultraviolet Spectra of Fast Coronal Mass Ejections Associated with X-Class Flares. *J. C. Raymond, A. Ciaravella, D. Dobrzycka, L. Strachan, Y.-K. Ko, & M. Uzzo.* 597, 1106 (2003)

Physical Parameters of the 2000 February 11 Coronal Mass Ejection: Ultraviolet Spectra versus White-Light Images. *A. Ciaravella, J. C. Raymond, A. van Ballegooijen, L. Strachan, A. Vourlidas, J. Li, J. Chen, & A. Panasyuk.* 597, 1118 (2003)

STRANGER, ROBERT. Locally Aromatic Polycyclic Hydrocarbons as Potential Carriers of Infrared Emission Features. *Simon Petrie, Robert Stranger, & Walter W. Duley.* 594, 869 (2003)

STRANIERO, OSCAR. The Chemical Composition of White Dwarfs as a Test of Convective Efficiency during Core Helium Burning. *Oscar Straniero, Immaculada Domínguez, Gianluca Imbriani, & Luciano Piersanti.* 583, 878 (2003)

s-Process Nucleosynthesis in Asymptotic Giant Branch Stars: A Test for Stellar Evolution. *Maria Lugaro, Falk Herwig, John C. Lattanzio, Roberto Gallino, & Oscar Straniero.* 586, 1305 (2003)

Isotopic Compositions of Strontium, Zirconium, Molybdenum, and Barium in Single Presolar SiC Grains and Asymptotic Giant Branch Stars. *Maria Lugaro, Andrew M. Davis, Roberto Gallino, Michael J. Pellin, Oscar Straniero, & Franz Käppeler.* 593, 486 (2003)

STRATTA, G. See DE PASQUALE, M., et al. A Comparative Study of the X-Ray Afterglow Properties of Optically Bright and Dark Gamma-Ray Bursts.

STRAUGHN, A. H. R Cassiopeiae: Relative Strengths of SiO Masers at 43 and 86 GHz. *R. B. Phillips, A. H. Straughn, S. S. Doeleman, & C. J. Lonsdale.* 588, L105 (2003)

STRAUSS, MICHAEL A. See SZKODY, PAULA, et al. Two Rare Magnetic Cataclysmic Variables with Extreme Cyclotron Features Identified in the Sloan Digital Sky Survey.

See EISENSTEIN, DANIEL J., et al. Average Spectra of Massive Galaxies in the Sloan Digital Sky Survey.

See HELMI, AMINA, et al. Selection of Metal-poor Giant Stars Using the Sloan Digital Sky Survey Photometric System.

See SZALAY, ALEXANDER S., et al. Karhunen-Loève Estimation of the Power Spectrum Parameters from the Angular Distribution of Galaxies in Early Sloan Digital Sky Survey Data.

See BLANTON, MICHAEL R., et al. The Galaxy Luminosity Function and Luminosity Density at Redshift $z = 0.1$.

Discovery of Eight New Extremely Metal-poor Galaxies in the Sloan Digital Sky Survey. *Alexei Y. Kniazev, Eva K. Grebel, Lei Hao, Michael A. Strauss, Jonathan Brinkmann, & Masataka Fukugita.* 593, L73 (2003)

See BLANTON, MICHAEL R., et al. The Broadband Optical Properties of Galaxies with Redshifts $0.02 < z < 0.22$.

STRICKLAND, D. A *Chandra* Survey of the Nearest Ultraluminous Infrared Galaxies: Obscured Active Galactic Nuclei or Superstarbursts? *A. Ptak, T. Heckman, N. A. Levenson, K. Weaver, & D. Strickland.* 592, 782 (2003)

STRICKLAND, DAVID K. Cooling in Coronal Gas in the M82 Starburst Superwind. *Charles G. Hoopes, Timothy M. Heckman, David K. Strickland, & J. Christopher Howk.* 596, L175 (2003)

STROHMAYER, TOD E. Discovery of X-Ray Quasi-periodic Oscillations from an Ultraluminous X-Ray Source in M82: Evidence against Beaming. *Tod E. Strohmayer & Richard F. Mushotzky.* 586, L61 (2003)

Phase Coherent Timing of RX J0806.3+1527 with *ROSAT* and *Chandra*. *Tod E. Strohmayer.* 593, L39 (2003)

X-Ray Bursts from the Accreting Millisecond Pulsar XTE J1814−338. *Tod E. Strohmayer, Craig B. Markwardt, Jean H. Swank, & Jean in 't Zand.* 596, L67 (2003)

STROLGER, L.-G. See BLAKESLEE, JOHN P., et al. Discovery of Two Distant Type Ia Supernovae in the Hubble Deep Field–North with the Advanced Camera for Surveys.

STRONG, ANDREW W. Challenging Cosmic-Ray Propagation with Antiprotons: Evidence for a "Fresh" Nuclei Component? *Igor V. Moskalenko, Andrew W. Strong, Stepan G. Mashnik, & Jonathan F. Ormes.* 586, 1050 (2003)

STRUBBE, LINDA E. Barred Galaxies at $z > 0.7$: NICMOS Hubble Deep Field–North Observations. *Kartik Sheth, Michael W. Regan, Nicholas Z. Scoville, & Linda E. Strubbe.* 592, L13 (2003)

STRUCK, CURTIS. Models of the Morphology, Kinematics, and Star Formation History of the Prototypical Collisional Starburst System NGC 7714/7715=Arp 284. *Curtis Struck & Beverly J. Smith.* 589, 157 (2003)

STUBBS, C. See ALCOCK, C., et al. The MACHO Project Large Magellanic Cloud Variable Star Inventory. XI. Frequency Analysis of the Fundamental Mode RR Lyrae Stars.

STUBBS, CHRISTOPHER. See SZKODY, PAULA, et al. Two Rare Magnetic Cataclysmic Variables with Extreme Cyclotron Features Identified in the Sloan Digital Sky Survey.

STUBBS, CHRISTOPHER W. See TONRY, JOHN L., et al. Cosmological Results from High-z Supernovae.

STURM, E. The [C II] 158 Micron Line Deficit in Ultraluminous Infrared Galaxies Revisited. *M. L. Luhman, S. Satyapal, J. Fischer, M. G. Wolfire, E. Sturm, C. C. Dudley, D. Lutz, & R. Genzel.* 594, 758 (2003)

STURNER, STEVEN J. *RXTE*, *ROSAT*, and *ASCA* Observations of G347.3−0.5 (RX J1713.7−3946): Probing Cosmic-Ray Acceleration by a Galactic Shell-Type Supernova Remnant. *Thomas G. Pannuti, Glenn E. Allen, John C. Houck, & Steven J. Sturner.* 593, 377 (2003)

STURROCK, P. A. Time-Series Analysis of Super-Kamiokande Measurements of the Solar Neutrino Flux. *P. A. Sturrock.* 594, 1102 (2003)

STUTZKI, J. [C I] 492 GHz Mapping Observations of the High-Latitude Translucent Cloud MCLD 123.5+24.9. *F. Bensch, U. Leuenhagen, J. Stutzki, & R. Schieder.* 591, 1013 (2003)

SUÁREZ, O. See MUKADEM, ANJUM S., et al. Constraining the Evolution of ZZ Ceti.

SUBASAVAGE, JOHN P. See DINESCU, DANA I., et al. Absolute Proper Motions to $B \sim 22.5$. V. Detection of Sagittarius Dwarf Spheroidal Debris in the Direction of the Galactic Anticenter: Erratum (ApJ, 575, L67 [2002]).

SUBBARAO, MARK. See SZKODY, PAULA, et al. Two Rare Magnetic Cataclysmic Variables with Extreme Cyclotron Features Identified in the Sloan Digital Sky Survey.

See GOMEZ, PERCY L., et al. Galaxy Star Formation as a Function of Environment in the Early Data Release of the Sloan Digital Sky Survey.

See GLAZEBROOK, KARL, et al. The Sloan Digital Sky Survey: The Cosmic Spectrum and Star Formation History.

SUBRAHMANYAN, RAVI. Renewed Activity in the Radio Galaxy PKS B1545−321: Twin Edge-brightened Beams within Diffuse Radio Lobes. *Lakshmi Saripalli, Ravi Subrahmanyan, & N. Udaya Shankar.* 590, 181 (2003)

SUBRAMANIAM, ANNAPURNI. Large Magellanic Cloud Bar: Evidence of a Warped Bar. *Annapurni Subramaniam.* 598, L19 (2003)

SUBRAMANIAN, P. Direct Detection of a Coronal Mass Ejection–Associated Shock in Large Angle and Spectrometric Coronagraph Experiment White-Light Images. *A. Vourlidas, S. T. Wu, A. H. Wang, P. Subramanian, & R. A. Howard.* 598, 1392 (2003)

SUCHKOV, A. A. The Nature of Overluminous F Stars Observed in a Radial-Velocity Survey. *R. F. Griffin & A. A. Suchkov.* 147, 103 (2003)

ROSAT View of *Hipparcos* F Stars. *A. A. Suchkov, V. V. Makarov, & W. Voges.* 595, 1206 (2003)

SUDARSKY, D. On the Indirect Detection of Sodium in the Atmosphere of the Planetary Companion to HD 209458. *J. J. Fortney, D. Sudarsky, I.*

Hubeny, C. S. Cooper, W. B. Hubbard, A. Burrows, & J. I. Lunine. 589, 615 (2003)

A Theory for the Radius of the Transiting Giant Planet HD 209458b. *Adam Burrows, D. Sudarsky, & W. B. Hubbard.* 594, 545 (2003)

SUDARSKY, DAVID. Modeling the Formation of Clouds in Brown Dwarf Atmospheres. *Curtis S. Cooper, David Sudarsky, John A. Milsom, Jonathan I. Lunine, & Adam Burrows.* 586, 1320 (2003)

Theoretical Spectra and Atmospheres of Extrasolar Giant Planets. *David Sudarsky, Adam Burrows, & Ivan Hubeny.* 588, 1121 (2003)

A Possible Bifurcation in Atmospheres of Strongly Irradiated Stars and Planets. *Ivan Hubeny, Adam Burrows, & David Sudarsky.* 594, 1011 (2003)

Modeling the Formation of Clouds in Brown Dwarf Atmospheres: Erratum (ApJ, 586, 1320 [2003]). *Curtis S. Cooper, David Sudarsky, John A. Milsom, Jonathan I. Lunine, & Adam Burrows.* 595, 573 (2003) (Orig. paper in 586, 1320 (2003))

Beyond the T Dwarfs: Theoretical Spectra, Colors, and Detectability of the Coolest Brown Dwarfs. *Adam Burrows, David Sudarsky, & Jonathan I. Lunine.* 596, 587 (2003)

SUESS, S. T. Temporal Evolution of a Streamer Complex: Coronal and in Situ Plasma Parameters. *A. Bemporad, G. Poletto, S. T. Suess, Y.-K. Ko, S. Parenti, P. Riley, M. Romoli, & T. Z. Zurbuchen.* 593, 1146 (2003)

SUETTERLIN, P. Motions of Isolated *G*-Band Bright Points in the Solar Photosphere. *P. Nisenson, A. A. van Ballegooijen, A. G. de Wijn, & P. Suetterlin.* 587, 458 (2003)

SUGAI, H. The Collimated Wind in NGC 253. *H. Sugai, R. I. Davies, & M. J. Ward.* 584, L9 (2003)

SUGANUMA, MASAHIRO. See YOSHII, YUZURU, et al. The Optical/Near-Infrared Light Curves of SN 2002ap for the First 140 Days after Discovery.

SUGERMAN, BEN. See MICHAEL, ELI, et al. *Hubble Space Telescope* Observations of High-Velocity Lyα and Hα Emission from Supernova Remnant 1987A: The Structure and Development of the Reverse Shock.

SUGIMOTO, H. See AMENOMORI, M., et al. Multi-TeV Gamma-Ray Flares from Markarian 421 in 2000 and 2001 Observed with the Tibet Air Shower Array.

SUGITANI, KOJI. See ITOH, YOICHI, et al. Interferometric Observations of the T Tauri Stars in the MBM 12 Cloud.

See JIANG, ZHIBO, et al. A Near-Infrared Study of the Star-Forming Region S269.

SUGIYAMA, NAOSHI. Probing Intracluster Magnetic Fields with Cosmic Microwave Background Polarization. *Hiroshi Ohno, Masahiro Takada, Klaus Dolag, Matthias Bartelmann, & Naoshi Sugiyama.* 584, 599 (2003)

Simulations of Early Structure Formation: Primordial Gas Clouds. *Naoki Yoshida, Tom Abel, Lars Hernquist, & Naoshi Sugiyama.* 592, 645 (2003)

SUI, LINHUI. Electron Bremsstrahlung Hard X-Ray Spectra, Electron Distributions, and Energetics in the 2002 July 23 Solar Flare. *Gordon D. Holman, Linhui Sui, Richard A. Schwartz, & A. Gordon Emslie.* 595, L97 (2003)

Evidence for the Formation of a Large-Scale Current Sheet in a Solar Flare. *Linhui Sui & Gordon D. Holman.* 596, L251 (2003)

SULANKE, K.-H. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

SULENTIC, J. W. An Optical Spectroscopic Atlas of Low-Redshift Active Galactic Nuclei. *P. Marziani, J. W. Sulentic, R. Zamanov, M. Calvani, D. Dultzin-Hacyan, R. Bachev, & T. Zwitter.* 145, 199 (2003)

Radio-loud Active Galactic Nuclei in the Context of the Eigenvector 1 Parameter Space. *J. W. Sulentic, S. Zamfir, P. Marziani, R. Bachev, M. Calvani, & D. Dultzin-Hacyan.* 597, L17 (2003)

SULLIVAN, D. See SMITH, D. A., et al. ROTSE-III Observations of the Early Afterglow from GRB 030329.

SULLIVAN, D. J. See SUMI, T., et al. Microlensing Optical Depth toward the Galactic Bulge from Microlensing Observations during 2000 with Difference Image Analysis.

See MUKADEM, ANJUM S., et al. Constraining the Evolution of ZZ Ceti.

SULLIVAN, G. W. See ATKINS, R., et al. The High-Energy Gamma-Ray Fluence and Energy Spectrum of GRB 970417A from Observations with Milagrito.

See FALCONE, A., et al. Observation of GeV Solar Energetic Particles from the 1997 November 6 Event Using Milagrito.

See ATKINS, R., et al. Observation of TeV Gamma Rays from the Crab Nebula with Milagro Using a New Background Rejection Technique.

SULLIVAN, M. See SWINBANK, A. M., et al. Galaxies under the Cosmic Microscope: A Gemini Multiobject Spectrograph Study of the Lensed Disk Galaxy 289 in A2218.

SULLIVAN, T. See MUKADEM, ANJUM S., et al. Constraining the Evolution of ZZ Ceti.

SUMI, T. Microlensing Optical Depth toward the Galactic Bulge from Microlensing Observations during 2000 with Difference Image Analysis. *T. Sumi, F. Abe, I. A. Bond, R. J. Dodd, J. B. Hearnshaw, M. Honda, M. Honma, Y. Kan-ya, P. M. Kilmartin, K. Masuda, Y. Matsubara, Y. Muraki, T. Nakamura, R. Nishi, S. Noda, K. Ohnishi, O. K. L. Petterson, N. J. Rattenbury, M. Reid, To. Saito, Y. Saito, H. Sato, M. Sekiguchi, J. Skuljan, D. J. Sullivan, M. Takeuti, P. J. Tristram, S. Wilkinson, T. Yanagisawa, & P. C. M. Yock.* 591, 204 (2003)

SUMMERS, K. See COLAVITA, M., et al. Observations of DG Tauri with the Keck Interferometer.

SUN, M. A Compact Central Object in the Supernova Remnant Kesteven 79. *F. D. Seward, P. O. Slane, R. K. Smith, & M. Sun.* 584, 414 (2003)

Chandra Observations of the Galaxy Cluster A478: The Interaction of Hot Gas and Radio Plasma in the Core, and an Improved Determination of the Compton y-Parameter. *M. Sun, C. Jones, S. S. Murray, S. W. Allen, A. C. Fabian, & A. C. Edge.* 587, 619 (2003)

Chandra Observations of the NGC 1550 Galaxy Group: Implication for the Temperature and Entropy Profiles of 1 keV Galaxy Groups. *M. Sun, W. Forman, A. Vikhlinin, A. Hornstrup, C. Jones, & S. S. Murray.* 598, 250 (2003)

SUN, YI-SUI. Occurrence and Stability of Apsidal Resonance in Multiple Planetary Systems. *Ji-Lin Zhou & Yi-Sui Sun.* 598, 1290 (2003)

SUNADA, KAZUYOSHI. Small-Scale Structure of Low-Density Gas in a Dark Cloud Envelope: Kinematic Evidence for Phase Transition? *Seiichi Sakamoto & Kazuyoshi Sunada.* 594, 340 (2003)

SUNTZEFF, NICHOLAS. See MICHAEL, ELI, et al. *Hubble Space Telescope* Observations of High-Velocity Lyα and Hα Emission from Supernova Remnant 1987A: The Structure and Development of the Reverse Shock.

SUNTZEFF, NICHOLAS B. See TONRY, JOHN L., et al. Cosmological Results from High-z Supernovae.

SURACE, JASON A. A *Hubble Space Telescope*/WFPC2 Snapshot Survey of 2MASS-selected Red QSOs. *Andrew R. Marble, Dean C. Hines, Gary D. Schmidt, Paul S. Smith, Jason A. Surace, Lee Armus, Roc M. Cutri, & Brant O. Nelson.* 590, 707 (2003)

SURIN, LEONID. Laboratory Precision Measurements of the Rotational Spectrum of $^{12}C^{17}O$ and $^{13}C^{17}O$. *Gabriele Klapper, Leonid Surin, Frank Lewen, Holger S. P. Müller, Igor Pak, & Gisbert Winnewisser.* 582, 262 (2003)

SURPI, G. The Gravitational Lens B1608+656. I. V-, I-, and H-Band *Hubble Space Telescope* Imaging. *G. Surpi & R. D. Blandford.* 584, 100 (2003)

The Hubble Constant from the Gravitational Lens B1608+656. *L. V. E. Koopmans, T. Treu, C. D. Fassnacht, R. D. Blandford, & G. Surpi.* 599, 70 (2003)

SUTHERLAND, R. S. Internal Dust Correction Factors for Star Formation Rates Derived for Dusty H II Regions and Starburst Galaxies. *M. A. Dopita, B. A. Groves, R. S. Sutherland, & L. J. Kewley.* 583, 727 (2003)

SUTHERLAND, RALPH S. The Numerical Simulation of Radiative Shocks. II. Thermal Instabilities in Two-dimensional Models. *Ralph S. Sutherland, Geoffrey V. Bicknell, & Michael A. Dopita.* 591, 238 (2003)

The Numerical Simulation of Radiative Shocks. I. The Elimination of Numerical Shock Instabilities Using a Local Oscillation Filter. *Ralph S. Sutherland, David K. Bisset, & Geoffrey V. Bicknell.* 147, 187 (2003)

Starburst Galaxies: Why the Calzetti Dust Extinction Law? *Jörg Fischera, Michael A. Dopita, & Ralph S. Sutherland.* 599, L21 (2003)

SUTHERLAND, W. See ALCOCK, C., et al. The MACHO Project Large Magellanic Cloud Variable Star Inventory. XI. Frequency Analysis of the Fundamental Mode RR Lyrae Stars.

SUTO, HIROSHI. See GOTO, MIWA, et al. Carbon Isotope Ratio in $^{12}CO/^{13}CO$ toward Local Molecular Clouds with Near-Infrared High-Resolution Spectroscopy of Vibrational Transition Bands.

SUTO, TASUSHI. Mass-Temperature Relation of Galaxy Clusters: Implication from the Observed Luminosity-Temperature Relation and X-Ray Temperature Function. *Mamoru Shimizu, Tetsu Kitayama, Shin Sasaki, & Tasushi Suto.* 590, 197 (2003)

SUTO, YASASUSHI. Arc Statistics in Triaxial Dark Matter Halos: Testing the Collisionless Cold Dark Matter Paradigm. *Masamune Oguri, Jounghun Lee, & Yasasushi Suto.* 599, 7 (2003)

Suto, Yasushi. Gravitational Lensing Magnification and Time Delay Statistics for Distant Supernovae. *Masamune Oguri, Yasushi Suto, & Edwin L. Turner.* 583, 584 (2003)

Modeling Intracluster Gas in Triaxial Dark Halos: An Analytic Approach. *Jounghun Lee & Yasushi Suto.* 585, 151 (2003)

Suwa, Tamon. Cluster Morphology as a Test of Different Cosmological Models. *Tamon Suwa, Asao Habe, Kohji Yoshikawa, & Takashi Okamoto.* 588, 7 (2003)

Suyu, Sherry H. Disk-Bulge-Halo Models for the Andromeda Galaxy. *Lawrence M. Widrow, Kathryn M. Perrett, & Sherry H. Suyu.* 588, 311 (2003)

Suzuki, M. See Crew, G. B., et al. *HETE-2* Localization and Observation of the Bright, X-Ray–rich Gamma-Ray Burst GRB 021211.

Earliest Detection of the Optical Afterglow of GRB 030329 and Its Varibility. *R. Sato, N. Kawai, M. Suzuki, Y. Yatsu, J. Kataoka, R. Takagi, K. Yanagisawa, & H. Yamaoka.* 599, L9 (2003)

Suzuki, Nao. The Cosmological Baryon Density from the Deuterium-to-Hydrogen Ratio in QSO Absorption Systems: D/H toward Q1243+3047. *David Kirkman, David Tytler, Nao Suzuki, John M. O'Meara, & Dan Lubin.* 149, 1 (2003)

Svidzinsky, Anatoly A. Radiation of Neutron Stars Produced by Superfluid Core. *Anatoly A. Svidzinsky.* 590, 386 (2003)

Swaby, D. L. See Enomoto, R., et al. Search for TeV Gamma Rays from SN 1987A in 2001.

Swain, M. See Colavita, M., et al. Observations of DG Tauri with the Keck Interferometer.

Swain, Mark. Interferometer Observations of Subparsec-Scale Infrared Emission in the Nucleus of NGC 4151. *Mark Swain, G. Vasisht, R. Akeson, J. Monnier, R. Millan-Gabet, E. Serabyn, M. Creech-Eakman, G. van Belle, J. Beletic, C. Beichman, A. Boden, A. Booth, M. Colavita, J. Gathright, M. Hrynevych, C. Koresko, D. Le Mignant, R. Ligon, B. Mennesson, C. Neyman, A. Sargent, M. Shao, R. Thompson, S. Unwin, & P. Wizinowich.* 596, L163 (2003)

Swan, H. F. See Smith, D. A., et al. ROTSE-III Observations of the Early Afterglow from GRB 030329.

Swank, J. H. See Woods, P. M., et al. The 2001 April Burst Activation of SGR 1900+14: Pulse Properties and Torque.

Swank, Jean. See Lenters, Geoffrey T., et al. An Extended Burst Tail from SGR 1900+14 with a Thermal X-Ray Spectrum.

Swank, Jean H. New Evidence of Proto-Cyclotron Resonance in a Magnetar Strength Field from SGR 1806−20. *Alaa I. Ibrahim, Jean H. Swank, & William Parke.* 584, L17 (2003)

X-Ray Bursts from the Accreting Millisecond Pulsar XTE J1814−338. *Tod E. Strohmayer, Craig B. Markwardt, Jean H. Swank, & Jean in 't Zand.* 596, L67 (2003)

Swanson, P. See Colavita, M., et al. Observations of DG Tauri with the Keck Interferometer.

Swartz, Douglas A. *Chandra* X-Ray Observations of the Spiral Galaxy M81. *Douglas A. Swartz, Kajal K. Ghosh, Michael L. McCollough, Thomas G. Pannuti, Allyn F. Tennant, & Kinwah Wu.* 144, 213 (2003)

See Becker, Werner, et al. *Chandra X-Ray Observatory* Observations of the Globular Cluster M28 and Its Millisecond Pulsar PSR 1821−24.

Swaters, R. A. The Central Mass Distribution in Dwarf and Low Surface Brightness Galaxies. *R. A. Swaters, B. F. Madore, Frank C. van den Bosch, & M. Balcells.* 583, 732 (2003)

The Kinematics in the Core of the Low Surface Brightness Galaxy DDO 39. *R. A. Swaters, M. A. W. Verheijen, M. A. Bershady, & D. R. Andersen.* 587, L19 (2003)

Swaters, Rob A. Stellar Motions in the Polar Ring Galaxy NGC 4650A. *Rob A. Swaters & Vera C. Rubin.* 587, L23 (2003)

Sweigart, Allen V. Evidence of a Significant Intermediate-Age Population in the M31 Halo from Main-Sequence Photometry. *Thomas M. Brown, Henry C. Ferguson, Ed Smith, Randy A. Kimble, Allen V. Sweigart, Alvio Renzini, R. Michael Rich, & Don A. VandenBerg.* 592, L17 (2003)

Swinbank, A. M. Galaxies under the Cosmic Microscope: A Gemini Multiobject Spectrograph Study of the Lensed Disk Galaxy 289 in A2218. *A. M. Swinbank, J. Smith, R. G. Bower, A. Bunker, I. Smail, R. S. Ellis, Graham P. Smith, J.-P. Kneib, M. Sullivan, & J. Allington-Smith.* 598, 162 (2003)

Swords, S. Measurement of the Kinetic Energy of Hydrogen Molecules Desorbing from Amorphous Water Ice. *J. E. Roser, S. Swords, G. Vidali, G. Manicò, & V. Pirronello.* 596, L55 (2003)

Swordy, S. P. See Holder, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.

See Hall, T. A., et al. Search for TeV Emissions from Pulsars in Binary Systems.

See de la Calle Pérez, I., et al. Search for High-Energy Gamma Rays from an X-Ray–Selected Blazar Sample.

Sylos Labini, Francesco. Bias and the Power Spectrum beyond the Turnover. *Ruth Durrer, Andrea Gabrielli, Michael Joyce, & Francesco Sylos Labini.* 585, L1 (2003)

Sylvestre, Julien. Prospects for the Detection of Electromagnetic Counterparts to Gravitational Wave Events. *Julien Sylvestre.* 591, 1152 (2003)

Sylwester, B. Solar Flare Abundances of Potassium, Argon, and Sulphur. *K. J. H. Phillips, J. Sylwester, B. Sylwester, & E. Landi.* 589, L113 (2003)

Sylwester, J. Solar Flare Abundances of Potassium, Argon, and Sulphur. *K. J. H. Phillips, J. Sylwester, B. Sylwester, & E. Landi.* 589, L113 (2003)

Szabó, R. Detection of the Evolutionary Stages of Variables in M3. *J. Jurcsik, J. M. Benko, G. A. Bakos, B. Szeidl, & R. Szabó.* 597, L49 (2003)

Szalay, Alex. See Eisenstein, Daniel J., et al. Average Spectra of Massive Galaxies in the Sloan Digital Sky Survey.

Szalay, Alexander S. Karhunen-Loève Estimation of the Power Spectrum Parameters from the Angular Distribution of Galaxies in Early Sloan Digital Sky Survey Data. *Alexander S. Szalay, Bhuvnesh Jain, Takahiko Matsubara, Ryan Scranton, Michael S. Vogeley, Andrew Connelly, Scott Dodelson, Daniel Eisenstein, Joshua A. Frieman, James E. Gunn, Lam Hui, David Johnston, Stephen Kent, Martin Kerscher, Jon Loveday, Avery Meiksin, Vijay Narayanan, Robert C. Nichol, Liam O'Connell, Adrian Pope, Roman Scoccimarro, Ravi K. Sheth, Albert Stebbins, Michael A. Strauss, István Szapudi, Max Tegmark, Idit Zehavi, James Annis, Neta Bahcall, Jon Brinkmann, István Csabai, Masataka Fukugita, Greg Hennessy, Zeljko Ivezic, Gillian R. Knapp, Peter A. Kunszt, Don Q. Lamb, Brian C. Lee, Robert H. Lupton, Jeffrey A. Munn, John Peoples, Jeffrey R. Pier, Constance Rockosi, David Schlegel, Christopher Stoughton, Douglas L. Tucker, Brian Yanny, & Donald G. York.* 591, 1 (2003)

See Budavári, Tamás, et al. Angular Clustering with Photometric Redshifts in the Sloan Digital Sky Survey: Bimodality in the Clustering Properties of Galaxies.

Szapudi, István. Cosmological Perturbation Theory Using the Schrödinger Equation. *István Szapudi & Nick Kaiser.* 583, L1 (2003)

See Szalay, Alexander S., et al. Karhunen-Loève Estimation of the Power Spectrum Parameters from the Angular Distribution of Galaxies in Early Sloan Digital Sky Survey Data.

See Budavári, Tamás, et al. Angular Clustering with Photometric Redshifts in the Sloan Digital Sky Survey: Bimodality in the Clustering Properties of Galaxies.

Szeidl, B. Detection of the Evolutionary Stages of Variables in M3. *J. Jurcsik, J. M. Benko, G. A. Bakos, B. Szeidl, & R. Szabó.* 597, L49 (2003)

Szentgyorgyi, Andrew. The High-Excitation Planetary Nebula NGC 246: Optical and Near-Ultraviolet Observations and Two-Dimensional Numerical Models. *Andrew Szentgyorgyi, John Raymond, José Franco, Eva Villaver, & Luis López-Martín.* 594, 874 (2003)

Szewczyk, O. See Schechter, Paul L., et al. Microlensing of Relativistic Knots in the Quasar HE 1104−1805 AB.

Szkody, P. See Araujo-Betancor, S., et al. System Parameters of DW Ursae Majoris.

Szkody, Paula. Two Rare Magnetic Cataclysmic Variables with Extreme Cyclotron Features Identified in the Sloan Digital Sky Survey. *Paula Szkody, Scott F. Anderson, Gary Schmidt, Patrick B. Hall, Bruce Margon, Antonino Miceli, Mark SubbaRao, James Frith, Hugh Harris, Suzanne Hawley, Brandon Lawton, Ricardo Covarrubias, Kevin Covey, Xiaohui Fan, Thomas Murphy, Vijay Narayanan, Sean Raymond, Armin Rest, Michael A. Strauss, Christopher Stubbs, Edwin Turner, Wolfgang Voges, Amanda Bauer, J. Brinkmann, Gillian R. Knapp, & Donald P. Schneider.* 583, 902 (2003)

Hubble Space Telescope STIS Spectroscopy of the White Dwarfs in the Ultrashort-Period Dwarf Novae VY Aquarii and WX Ceti. *Edward M. Sion, Paula Szkody, Fuhua Cheng, Boris T. Gänsicke, & Steve B. Howell.* 583, 907 (2003)

Hubble Space Telescope Space Telescope Imaging Spectrograph Spectroscopy of the Intermediate Polar EX Hydrae. *Kunegunda E. Belle, Steve B. Howell, Edward M. Sion, Knox S. Long, & Paula Szkody.* 587, 373 (2003)

WZ Sagittae: *FUSE* Spectroscopy of the 2001 Outburst. *Knox S. Long, Cynthia S. Froning, Boris Gänsicke, Christian Knigge, Edward M. Sion, & Paula Szkody.* 591, 1172 (2003)
See SION, EDWARD M., et al. *Hubble Space Telescope* Spectroscopy of the Unexpected 2001 July Outburst of the Dwarf Nova WZ Sagittae.
See GÄNSICKE, BORIS T., et al. Anomalous Ultraviolet Line Flux Ratios in the Cataclysmic variables 1RXS J232953.9+062814, CE 315, BZ Ursae Majoris, and EY Cygni observed with the *Hubble Space Telescope* Space Telescope Imaging Spectrograph.
See SCHMIDT, GARY D., et al. Magnetic White Dwarfs from the Sloan Digital Sky Survey: The First Data Release.
Hubble Space Telescope Observations of Ultraviolet Oscillations in WZ Sagittae during the Decline from Outburst. *William F. Welsh, Edward M. Sion, Patrick Godon, Boris T. Gänsicke, Christian Knigge, Knox S. Long, & Paula Szkody.* 599, 509 (2003)
SZOKOLY, G. See WANG, J., et al. A Puzzling X-Ray Source Found in the *Chandra* Deep Field–South.
See GILLI, R., et al. Tracing the Large-Scale Structure in the *Chandra* Deep Field South.
SZYMAŃSKI, M. See SCHECHTER, PAUL L., et al. Microlensing of Relativistic Knots in the Quasar HE 1104−1805 AB.

TAAM, R. E. The Role of Helium Stars in the Formation of Double Neutron Stars. *N. Ivanova, K. Belczynski, V. Kalogera, F. A. Rasio, & R. E. Taam.* 592, 475 (2003)
TAAM, RONALD E. Cataclysmic Variable Evolution with Circumbinary Disks. *Ronald E. Taam, Eric L. Sandquist, & Guillaume Dubus.* 592, 1124 (2003)
On the Origin of X-Ray Emission from Millisecond Pulsars in 47 Tucanae. *K. S. Cheng & Ronald E. Taam.* 598, 1207 (2003)
Magnetic Braking Revisited. *N. Ivanova & Ronald E. Taam.* 599, 516 (2003)
TABACHNIK, SERGE. Dynamic Habitability of Known Extrasolar Planetary Systems. *Kristen Menou & Serge Tabachnik.* 583, 473 (2003)
TABOADA, I. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.
TACCONI, LINDA J. Spatially Resolved Millimeter Interferometry of SMM J02399−0136: A Very Massive Galaxy at $z = 2.8$. *Reinhard Genzel, Andrew J. Baker, Linda J. Tacconi, Dieter Lutz, Pierre Cox, Stéphane Guilloteau, & Alain Omont.* 584, 633 (2003)
TACCONI-GARMAN, L. E. See GENZEL, R., et al. The Stellar Cusp around the Supermassive Black Hole in the Galactic Center.
Molecular Hydrogen Excitation in Ultraluminous Infrared Galaxies. *R. I. Davies, A. Sternberg, M. Lehnert, & L. E. Tacconi-Garman.* 597, 907 (2003)
TACHIBANA, S. The Initial Abundance of ^{60}Fe in the Solar System. *S. Tachibana & G. R. Huss.* 588, L41 (2003)
TACHIBANA, SHOGO. Evaporation of Interstellar Organic Materials in the Solar Nebula. *Hideyuki Nakano, Akira Kouchi, Shogo Tachibana, & Akira Tsuchiyama.* 592, 1252 (2003)
TADHUNTER, C. N. Fast Outflow of Neutral Hydrogen in the Radio Galaxy 3C 293. *R. Morganti, T. A. Oosterloo, B. H. C. Emonts, J. M. van der Hulst, & C. N. Tadhunter.* 593, L69 (2003)
TAFALLA, MARIO. Inner Structures of Protostellar Collapse Candidate B335 Derived from Millimeter-Wave Interferometry. *Daniel W. A. Harvey, David J. Wilner, Philip C. Myers, Mario Tafalla, & Diego Mardones.* 583, 809 (2003)
Disk Properties and Density Structure of the Star-Forming Dense Core B335. *Daniel W. A. Harvey, David J. Wilner, Philip C. Myers, & Mario Tafalla.* 596, 383 (2003)
Inner Structure of Starless Core L694-2 Derived from Millimeter-Wave Interferometry. *Daniel W. A. Harvey, David J. Wilner, Philip C. Myers, & Mario Tafalla.* 597, 424 (2003)
TAGLIAFERRI, G. The Resolved Fraction of the Cosmic X-Ray Background. *A. Moretti, S. Campana, D. Lazzati, & G. Tagliaferri.* 588, 696 (2003)
See BÖTTCHER, M., et al. Coordinated Multiwavelength Observations of BL Lacertae in 2000.
TAIRA, K. See AMENOMORI, M., et al. Multi-TeV Gamma-Ray Flares from Markarian 421 in 2000 and 2001 Observed with the Tibet Air Shower Array.
TAKABE, H. Explosive Nucleosynthesis Associated with Formation of Jet-induced Gamma-Ray Bursts in Massive Stars. *S. Nagataki, A. Mizuta, S. Yamada, H. Takabe, & K. Sato.* 596, 401 (2003)
TAKADA, MASAHIRO. The Three-Point Correlation Function for Spin-2 Fields. *Masahiro Takada & Bhuvnesh Jain.* 583, L49 (2003)
Probing Intracluster Magnetic Fields with Cosmic Microwave Background Polarization. *Hiroshi Ohno, Masahiro Takada, Klaus Dolag, Matthias Bartelmann, & Naoshi Sugiyama.* 584, 599 (2003)
TAKAGI, R. Earliest Detection of the Optical Afterglow of GRB 030329 and Its Varibility. *R. Sato, N. Kawai, M. Suzuki, Y. Yatsu, J. Kataoka, R. Takagi, K. Yanagisawa, & H. Yamaoka.* 599, L9 (2003)
TAKAGISHI, K. See CREW, G. B., et al. *HETE-2* Localization and Observation of the Bright, X-Ray–rich Gamma-Ray Burst GRB 021211.
TAKAHARA, FUMIO. Properties of the Brightest Cluster Galaxy and Its Host Cluster. *Haruyoshi Katayama, Kiyoshi Hayashida, Fumio Takahara, & Yutaka Fujita.* 585, 687 (2003)
The Electron Spectrum in 3C 279 and the Observed Emission Spectrum. *Masaaki Kusunose, Fumio Takahara, & Tomohiro Kato.* 592, L5 (2003)
TAKAHASHI, KEITARO. Decaying Cold Dark Matter and the Evolution of the Cluster Abundance. *Masamune Oguri, Keitaro Takahashi, Hiroshi Ohno, & Kei Kotake.* 597, 645 (2003)
TAKAHASHI, MASAAKI. Relativistic Acceleration of Magnetically Driven Jets. *Akira Tomimatsu & Masaaki Takahashi.* 592, 321 (2003)
TAKAHASHI, ROHTA. Astrometric Microlensing by Finite-Size Lenses. *Rohta Takahashi.* 595, 418 (2003)
TAKAHASHI, RYUICHI. Wave Effects in the Gravitational Lensing of Gravitational Waves from Chirping Binaries. *Ryuichi Takahashi & Takashi Nakamura.* 595, 1039 (2003)
The Decihertz Laser Interferometer Can Determine the Position of the Coalescing Binary Neutron Stars within an Arcminute a Week before the Final Merging Event to the Black Hole. *Ryuichi Takahashi & Takashi Nakamura.* 596, L231 (2003)
TAKAHASHI, TADAYUKI. Implications of Variability Patterns Observed in TeV Blazars on the Structure of the Inner Jet. *Chiharu Tanihata, Tadayuki Takahashi, Jun Kataoka, & Greg M. Medejski.* 584, 153 (2003)
Optical Identification of the *ASCA* Medium Sensitivity Survey in the Northern Sky: Nature of Hard X-Ray–Selected Luminous Active Galactic Nuclei. *Masayuki Akiyama, Yoshihiro Ueda, Kouji Ohta, Tadayuki Takahashi, & Toru Yamada.* 148, 275 (2003)
See WATANABE, SHIN, et al. Detection of a Fully Resolved Compton Shoulder of the Iron Kα Line in the *Chandra* X-Ray Spectrum of GX 301-2.
TAKAKUWA, SHIGEHISA. $H^{13}CO^+$ and CH_3OH Line Observations of Prestellar Dense Cores in the TMC-1C Region. II. Internal Structure. *Shigehisa Takakuwa, Takeshi Kamazaki, Masao Saito, & Naomi Hirano.* 584, 818 (2003)
Interaction between the Outflow and the Core in IRAM 04191+1522. *Shigehisa Takakuwa, Nagayoshi Ohashi, & Naomi Hirano.* 590, 932 (2003)
TAKALO, L. O. See BÖTTCHER, M., et al. Coordinated Multiwavelength Observations of BL Lacertae in 2000.
TAKAMI, HIDEKI. See GOTO, MIWA, et al. Spatially Resolved 3 Micron Spectroscopy of IRAS 22272+5435: Formation and Evolution of Aliphatic Hydrocarbon Dust in Proto–Planetary Nebulae.
See PYO, TAE-SOO, et al. Adaptive Optics Spectroscopy of the [Fe II] Outflow from DG Tauri.
See GOTO, MIWA, et al. Carbon Isotope Ratio in $^{12}CO/^{13}CO$ toward Local Molecular Clouds with Near-Infrared High-Resolution Spectroscopy of Vibrational Transition Bands.
TAKANO, SHURO. A C-Band Spectral Scan of IRC +10°216. *Esteban Araya, Peter Hofner, Paul Goldsmith, Slava Slysh, & Shuro Takano.* 596, 556 (2003)
TAKATA, T. See KAWABATA, K. S., et al. On the Spectrum and Spectropolarimetry of Type Ic Hypernova SN 2003dh/GRB 030329.
TAKATA, TADAFUMI. See OHYAMA, YOUICHI, et al. On the Origin of Lyα Blobs at High Redshift: Kinematic Evidence of a Hyperwind Galaxy at $z = 3.1$.
TAKATO, NARUHISA. See GOTO, MIWA, et al. Spatially Resolved 3 Micron Spectroscopy of IRAS 22272+5435: Formation and Evolution of Aliphatic Hydrocarbon Dust in Proto–Planetary Nebulae.
See PYO, TAE-SOO, et al. Adaptive Optics Spectroscopy of the [Fe II] Outflow from DG Tauri.
See GOTO, MIWA, et al. Carbon Isotope Ratio in $^{12}CO/^{13}CO$ toward Local Molecular Clouds with Near-Infrared High-Resolution Spectroscopy of Vibrational Transition Bands.
TAKEDA, YOICHI. See SATO, BUN'EI, et al. A Planetary Companion to the G-Type Giant Star HD 104985.

TAKEI, YOH. A New Method to Map Flares in Quasars. *Atsumori Yonehara, Shin Mineshige, Yoh Takei, George Chartas, & Edwin L. Turner.* 594, 107 (2003)

TAKEUCHI, TAKU. Surface Outflow in Optically Thick Dust Disks by Radiation Pressure. *Taku Takeuchi & D. N. C. Lin.* 593, 524 (2003)

TAKEUCHI, TSUTOMU T. The Luminosity Function of *IRAS* Point Source Catalog Redshift Survey Galaxies. *Tsutomu T. Takeuchi, Kohji Yoshikawa, & Takako T. Ishii.* 587, L89 (2003)

TAKEUTI, M. See SUMI, T., et al. Microlensing Optical Depth toward the Galactic Bulge from Microlensing Observations during 2000 with Difference Image Analysis.

TAKITA, M. See AMENOMORI, M., et al. Multi-TeV Gamma-Ray Flares from Markarian 421 in 2000 and 2001 Observed with the Tibet Air Shower Array.

TAKIZAWA, MOTOKAZU. Nonthermal Emissions from Particles Accelerated by Turbulence in Clusters of Galaxies. *Yutaka Fujita, Motokazu Takizawa, & Craig L. Sarazin.* 584, 190 (2003)

Chandra Obsrevations of the Central Region of A3112. *Motokazu Takizawa, Craig L. Sarazin, Elizabeth L. Blanton, & Greg B. Taylor.* 595, 142 (2003)

TAKUBO, SHINYA. K3-50A: An Ultracompact H II Region Ionized by a Massive Stellar Cluster. *Yoshiko K. Okamoto, Hirokazu Kataza, Takuya Yamashita, Takashi Miyata, Shigeyuki Sako, Shinya Takubo, Mitsuhiko Honda, & Takashi Onaka.* 584, 368 (2003)

Detection of Crystalline Silicates around the T Tauri Star Hen 3-600A. *Mitsuhiko Honda, Hirokazu Kataza, Yoshiko K. Okamoto, Takashi Miyata, Takuya Yamashita, Shigeyuki Sako, Shinya Takubo, & Takashi Onaka.* 585, L59 (2003)

TAM, CINDY. The Expansion of G11.2−0.3, a Radio Composite Supernova Remnant. *Cindy Tam & Mallory S. E. Roberts.* 598, L27 (2003)

TAM, CINDY R. The Pulsar Wind Nebula in G11.2−0.3. *Mallory S. E. Roberts, Cindy R. Tam, Victoria M. Kaspi, Maxim Lyutikov, Gautam Vasisht, Michael Pivovaroff, Eric V. Gotthelf, & Nobuyuki Kawai.* 588, 992 (2003)

TAMAGAWA, T. See KAWABATA, K. S., et al. On the Spectrum and Spectropolarimetry of Type Ic Hypernova SN 2003dh/GRB 030329.

See URATA, Y., et al. Multiband Optical Follow-up Observations of GRB 020813 at the Kiso and Bisei Observatories.

See CREW, G. B., et al. *HETE-2* Localization and Observation of the Bright, X-Ray–rich Gamma-Ray Burst GRB 021211.

TAMAMURA, MASAYA. The *r*-Process in Supernovae Explosions from the Collapse of O-Ne-Mg Cores. *Shinya Wanajo, Masaya Tamamura, Naoki Itoh, Ken'ichi Nomoto, Yuhri Ishimaru, Timothy C. Beers, & Satoshi Nozawa.* 593, 968 (2003)

TAMANAI, A. Infrared Properties of Solid Titanium Oxides: Exploring Potential Primary Dust Condensates. *T. Posch, F. Kerschbaum, D. Fabian, H. Mutschke, J. Dorschner, A. Tamanai, & T. Henning.* 149, 437 (2003)

TAMMANN, G. A. The Cepheid Distance to NGC 5236 (M83) with the ESO Very Large Telescope. *Frank Thim, G. A. Tammann, A. Saha, A. Dolphin, Allan Sandage, E. Tolstoy, & Lukas Labhardt.* 590, 256 (2003)

TAMURA, H. See SHIMASAKU, K., et al. Subaru Deep Survey. IV. Discovery of a Large-Scale Structure at Redshift ≃5.

TAMURA, HAJIME. See OUCHI, MASAMI, et al. Subaru Deep Survey. II. Luminosity Functions and Clustering Properties of Lyα Emitters at $z = 4.86$ in the Subaru Deep Field.

TAMURA, MOTOHIDE. See ITOH, YOICHI, et al. Interferometric Observations of the T Tauri Stars in the MBM 12 Cloud.

Near-Infrared Imaging of the Circumstellar Disk around Herbig Ae Star HD 150193A. *Misato Fukagawa, Motohide Tamura, Yoichi Itoh, Saeko S. Hayashi, & Yumiko Oasa.* 590, L49 (2003)

See JIANG, ZHIBO, et al. A Near-Infrared Study of the Star-Forming Region S269.

TAMURA, T. High Resolution X-Ray Spectroscopic Constraints on Cooling-Flow Models for Clusters of Galaxies. *J. R. Peterson, S. M. Kahn, F. B. S. Paerels, J. S. Kaastra, T. Tamura, J. A. M. Bleeker, C. Ferrigno, & J. G. Jernigan.* 590, 207 (2003)

TAN, JONATHAN C. The Formation of Massive Stars from Turbulent Cores. *Christopher F. McKee & Jonathan C. Tan.* 585, 850 (2003)

The Scattered X-Ray Halo around Nova Cygni 1992: Testing a Model for Interstellar Dust. *B. T. Draine & Jonathan C. Tan.* 594, 347 (2003)

TAN, Y. H. See AMENOMORI, M., et al. Multi-TeV Gamma-Ray Flares from Markarian 421 in 2000 and 2001 Observed with the Tibet Air Shower Array.

TANAKA, I. See FOX, D. W., et al. Discovery of Early Optical Emission from GRB 021211.

TANIGUCHI, Y. See SHIMASAKU, K., et al. Subaru Deep Survey. IV. Discovery of a Large-Scale Structure at Redshift ≃5.

Cosmic Star Formation History Assocatied with Quasar Activity: An Approach Using the Black Hole–to–Bulge Mass Correlation. *Y. P. Wang, T. Yamada, & Y. Taniguchi.* 588, 113 (2003)

TANIGUCHI, YOSHIAKI. See OUCHI, MASAMI, et al. Subaru Deep Survey. II. Luminosity Functions and Clustering Properties of Lyα Emitters at $z = 4.86$ in the Subaru Deep Field.

Orbital Decay and Tidal Disruption of a Star Cluster: Analytical Calculation. *Hideaki Mouri & Yoshiaki Taniguchi.* 585, 250 (2003)

The Discovery of a Very Narrow Line Star-forming Object at a Redshift of 5.66. *Yoshiaki Taniguchi, Masaru Ajiki, Takashi Murayama, Tohru Nagao, Sylvain Veilleux, David B. Sanders, Yutaka Komiyama, Yasuhiro Shioya, Shinobu S. Fujita, Yuko Kakazu, Sadanori Okamura, Hiroyasu Ando, Tetsuo Nishimura, Masahiko Hayashi, Ryusuke Ogasawara, & Shin-ichi Ichikawa.* 585, L97 (2003)

See FUJITA, SHINOBU S., et al. The Hα Luminosity Function and Star Formation Rate at $z \approx 0.24$ Based on Subaru Deep Imaging Data.

See OHYAMA, YOUICHI, et al. On the Origin of Lyα Blobs at High Redshift: Kinematic Evidence of a Hyperwind Galaxy at $z = 3.1$.

TANIHATA, CHIHARU. Implications of Variability Patterns Observed in TeV Blazars on the Structure of the Inner Jet. *Chiharu Tanihata, Tadayuki Takahashi, Jun Kataoka, & Greg M. Madejski.* 584, 153 (2003)

TANIMORI, T. See ENOMOTO, R., et al. Search for TeV Gamma Rays from SN 1987A in 2001.

TANNER, A. See GHEZ, A. M., et al. The First Measurement of Spectral Lines in a Short-Period Star Bound to the Galaxy's Central Black Hole: A Paradox of Youth.

TANNER, S. E. M. Fast Dynamo Action for a Family of Parametrized Flows. *S. E. M. Tanner & D. W. Hughes.* 586, 685 (2003)

TANUMA, SYUNITI. Magnetic Reconnection Triggered by the Parker Instability in the Galaxy: Two-Dimensional Numerical Magnetohydrodynamic Simulations and Application to the Origin of X-Ray Gas in the Galactic Halo. *Syuniti Tanuma, Takaaki Yokoyama, Takahiro Kudoh, & Kazunari Shibata.* 582, 215 (2003)

TANVIR, N. See KLOSE, S., et al. The Very Faint *K*-Band Afterglow of GRB 020819 and the Dust Extinction Hypothesis of the Dark Bursts.

TANVIR, N. R. See HJORTH, J., et al. Very High Column Density and Small Reddening toward GRB 020124 at $z = 3.20$.

See GREINER, J., et al. GRB 011121: A Collimated Outflow into Wind-blown Surroundings.

TANVIR, NIAL R. Reconstructing Cepheid Light Curve with Fourier Techniques. I. The Fourier Expansion and Interrelations. *Chow-Choong Ngeow, Shashi M. Kanbur, Sergei Nikolaev, Nial R. Tanvir, & Martin A. Hendry.* 586, 959 (2003)

The Cepheid Distance to NGC 1637: A Direct Test of the Expanding Photosphere Method Distance to SN 1999em. *Douglas C. Leonard, Shashi M. Kanbur, Choong C. Ngeow, & Nial R. Tanvir.* 594, 247 (2003)

TARBELL, T. Correlations on Arcsecond Scales between Chromospheric and Transition Region Emission in Active Regions. *B. De Pontieu, T. Tarbell, & R. Erdélyi.* 590, 502 (2003)

TARTER, JILL C. Target Selection for SETI. I. A Catalog of Nearby Habitable Stellar Systems. *Margaret C. Turnbull & Jill C. Tarter.* 145, 179 (2003)

Target Selection for SETI. II. Tycho-2 Dwarfs, Old Open Clusters, and the Nearest 100 Stars. *Margaret C. Turnbull & Jill C. Tarter.* 149, 423 (2003)

TARUSAWA, K. See URATA, Y., et al. Multiband Optical Follow-up Observations of GRB 020813 at the Kiso and Bisei Observatories.

TARUYA, ATSUSHI. Evolution of the Cosmological Density Distribution Function from the Local Collapse Model. *Yasuhiro Ohta, Issha Kayo, & Atsushi Taruya.* 589, 1 (2003)

TASSIS, KONSTANTINOS. Numerical Simulations of High-Redshift Star Formation in Dwarf Galaxies. *Konstantinos Tassis, Tom Abel, Greg L. Bryan, & Michael L. Norman.* 587, 13 (2003)

TATEMATSU, KEN'ICHI. Chemistry and Dynamics in Pre-protostellar Cores. *Jeong-Eun Lee, Neal J. Evans II, Yancy L. Shirley, & Ken'ichi Tatematsu.* 583, 789 (2003)

See KAMEGAI, KAZUHISA, et al. Distribution of the C I Emission in the ρ Ophiuchi Dark Cloud.

TATEYAMA, N. See AMENOMORI, M., et al. Multi-TeV Gamma-Ray Flares from Markarian 421 in 2000 and 2001 Observed with the Tibet Air Shower Array.

TAVANI, M. See FEROCI, M., et al. The 2001 April Burst Activation of SGR 1900+14: X-Ray Afterglow Emission.

TAVAREZ, M. See MIRABAL, N., et al. GRB 021004: A Possible Shell Nebula around a Wolf-Rayet Star Gamma-Ray Burst Progenitor.

TAVECCHIO, FABRIZIO. Detection of X-Ray Emission from the Eastern Radio Lobe of Pictor A. *Paola Grandi, Matteo Guainazzi, Laura Maraschi, Raffaella Morganti, Roberto Fusco-Femiano, Mariateresa Fiocchi, Lucia Ballo, & Fabrizio Tavecchio.* 586, 123 (2003)

The Jet-Disk Connection and Blazar Unification. *Laura Maraschi & Fabrizio Tavecchio.* 593, 667 (2003)

TAWARA, Y. Spatial Distributions of A3558 in the Core Region of the Shapley Supercluster. *F. Akimoto, K. Kondou, A. Furuzawa, Y. Tawara, & K. Yamashita.* 596, 170 (2003)

TAYAL, S. S. Breit-Pauli R-Matrix Calculation for Electron Impact Collision Strengths and Rates of O VI. *S. S. Tayal.* 582, 550 (2003)

Oscillator Strengths of Allowed and Intercombination Lines in P II. *S. S. Tayal.* 146, 459 (2003)

Electron Collision Excitation Rates for O I Using the *B*-Spline *R*-Matrix Approach. *O. Zatsarinny & S. S. Tayal.* 148, 575 (2003)

TAYLOR, A. R. Rotation Measures of Compact Sources in the Canadian Galactic Plane Survey. *J. C. Brown, A. R. Taylor, & B. J. Jackel.* 145, 213 (2003)

On Large-Scale Magnetic Field Reversals in the Outer Galaxy. *J. C. Brown, A. R. Taylor, R. Wielebinski, & P. Mueller.* 592, L29 (2003)

TAYLOR, G. B. Continued Radio Monitoring of the Gamma-Ray Burst 991208. *T. J. Galama, D. A. Frail, R. Sari, E. Berger, G. B. Taylor, & S. R. Kulkarni.* 585, 899 (2003)

A View through Faraday's Fog: Parsec-Scale Rotation Measures in Active Galactic Nuclei. *R. T. Zavala & G. B. Taylor.* 589, 126 (2003)

VLBI Polarimetry of 177 Sources from the Caltech–Jodrell Bank Flat-Spectrum Survey. *L. K. Pollack, G. B. Taylor, & R. T. Zavala.* 589, 733 (2003)

See FRAIL, D. A., et al. The Broadband Afterglow of GRB 980703.

Identifying Compact Symmetric Objects in the Southern Sky. *G. B. Taylor & A. B. Peck.* 597, 157 (2003)

TAYLOR, GREG B. *Chandra* Obsrevations of the Central Region of A3112. *Motokazu Takizawa, Craig L. Sarazin, Elizabeth L. Blanton, & Greg B. Taylor.* 595, 142 (2003)

Are the Faraday Rotating Magnetic Fields Local to Intracluster Radio Galaxies? *Torsten A. Ensslin, Corina Vogt, T. E. Clarke, & Greg B. Taylor.* 597, 870 (2003)

TAYLOR, GREGORY B. Very Long Baseline Array Continuum and H I Absorption Observations of the Ultraluminous Infrared Galaxy IRAS 17208−0014. *Emmanuel Momjian, Jonathan D. Romney, Christopher L. Carilli, Thomas H. Troland, & Gregory B. Taylor.* 587, 160 (2003)

TAYLOR, HILDA M. Cool Companions to White Dwarfs from the Two Micron All-Sky Survey Second Incremental Data Release. *Stefanie Wachter, D. W. Hoard, Kathryn H. Hansen, Rebecca E. Wilcox, Hilda M. Taylor, & Steven L. Finkelstein.* 586, 1356 (2003)

TAYLOR, JAMES E. The Structural Evolution of Substructure. *Eric Hayashi, Julio F. Navarro, James E. Taylor, Joachim Stadel, & Thomas Quinn.* 584, 541 (2003)

TAYLOR, R. The Impact of Ionizing Stars on the Diffuse Interstellar Medium: A Swept-Up Shell and Ionized Halo around the W4 Chimney/Superbubble. *S. Terebey, M. Fich, R. Taylor, Y. Cao, & T. Hancock.* 590, 906 (2003)

TAYLOR, S. C. *Chandra* Observations of Variable Embedded X-Ray Sources in Orion. I. Resolving the Orion Trapezium: Erratum (ApJ, 549, 441 [2001]). *N. S. Schulz, C. Canizares, D. Huenemoerder, J. H. Kastner, S. C. Taylor, & E. J. Bergstrom.* 586, 1441 (2003) (Orig. paper in 549, 441 (2001))

TAYLOR, VIOLET A. See ESKRIDGE, PAUL B., et al. Ultraviolet-Optical Pixel Maps of Face-on Spiral Galaxies: Clues for Dynamics and Star Formation Histories.

TECZA, M. A Geometric Determination of the Distance to the Galactic Center. *F. Eisenhauer, R. Schödel, R. Genzel, T. Ott, M. Tecza, R. Abuter, A. Eckart, & T. Alexander.* 597, L121 (2003)

TEEGARDEN, B. J. Discovery of a New Nearby Star. *B. J. Teegarden, S. H. Pravdo, M. Hicks, K. Lawrence, S. B. Shaklan, K. Covey, O. Fraser, S. L. Hawley, T. McGlynn, & I. N. Reid.* 589, L51 (2003)

TEGLER, S. C. Color Patterns in the Kuiper Belt: A Possible Primordial Origin. *S. C. Tegler, W. Romanishin, & G. J. Consolmagno, S.J.* 599, L49 (2003)

TEGMARK, MAX. See SZALAY, ALEXANDER S., et al. Karhunen-Loève Estimation of the Power Spectrum Parameters from the Angular Distribution of Galaxies in Early Sloan Digital Sky Survey Data.

See BLANTON, MICHAEL R., et al. The Galaxy Luminosity Function and Luminosity Density at Redshift $z = 0.1$.

See BUDAVÁRI, TAMÁS, et al. Angular Clustering with Photometric Redshifts in the Sloan Digital Sky Survey: Bimodality in the Clustering Properties of Galaxies.

TELESCO, C. M. Mid-Infrared Imaging of the First-Ascent Giant HD 233517. *R. Scott Fisher, C. M. Telesco, Robert K. Piña, & Roger F. Knacke.* 586, L91 (2003)

A Search for Mid-Infrared Emission from Hot Molecular Core Candidates. *J. M. De Buizer, J. T. Radomski, C. M. Telesco, & R. K. Piña.* 598, 1127 (2003)

TELESCO, CHARLES M. Mid-Infrared Imaging of the Protostellar Binary L1448N IRS 3(A,B). *David R. Ciardi, Charles M. Telesco, Jonathan P. Williams, R. Scott Fisher, Chris Packham, Robert Piña, & James Radomski.* 585, 392 (2003)

Resolved Mid-Infrared Emission in the Narrow-Line Region of NGC 4151. *James T. Radomski, Robert K. Piña, Christopher Packham, Charles M. Telesco, James M. De Buizer, R. Scott Fisher, & A. Robinson.* 587, 117 (2003)

TEMI, PASQUALE. Dust in Hot Gas: Far-Infrared Emission from Three Local Elliptical Galaxies. *Pasquale Temi, William G. Mathews, Fabrizio Brighenti, & Jesse D. Bregman.* 585, L121 (2003)

TEMPORIN, S. CG J1720−67.8: A Detailed Analysis of Optical and Infrared Properties of a New Ultracompact Group of Galaxies. *S. Temporin, R. Weinberger, G. Galaz, & F. Kerber.* 584, 239 (2003)

Candidate Tidal Dwarf Galaxies in the Compact Group CG J1720−67.8. *S. Temporin, R. Weinberger, G. Galaz, & F. Kerber.* 587, 660 (2003)

Analysis of the Interaction Effects in the Southern Galaxy Pair Tol 1238−364 and ESO 381-G009. *S. Temporin, S. Ciroi, P. Rafanelli, M. Radovich, J. Vennik, G. M. Richter, & K. Birkle.* 148, 353 (2003)

TENNANT, A. See KOUVELIOTOU, C., et al. Unraveling the Cooling Trend of the Soft Gamma Repeater SGR 1627−41.

TENNANT, A. F. Probing with the Inflow/Outflow and Accretion Disk of Cygnus X-1 in High State with the *Chandra* High Energy Transmission Grating. *Y. X. Feng, A. F. Tennant, & S. N. Zhang.* 597, 1017 (2003)

TENNANT, ALLYN F. *Chandra* X-Ray Observations of the Spiral Galaxy M81. *Douglas A. Swartz, Kajal K. Ghosh, Michael L. McCollough, Thomas G. Pannuti, Allyn F. Tennant, & Kinwah Wu.* 144, 213 (2003)

See PATEL, SANDEEP K., et al. *Chandra* Observations of the Anomalous X-Ray Pulsar 4U 0142+61.

See BECKER, WERNER, et al. *Chandra X-Ray Observatory* Observations of the Globular Cluster M28 and Its Millisecond Pulsar PSR 1821−24.

TENORIO-TAGLE, G. On the Rapidly Cooling Interior of Supergalactic Winds. *S. Silich, G. Tenorio-Tagle, & C. Muñoz-Tuñón.* 590, 791 (2003)

Lyα Emission in Starbursts: Implications for Galaxies at High Redshift. *J. M. Mas-Hesse, D. Kunth, G. Tenorio-Tagle, C. Leitherer, R. J. Terlevich, & E. Terlevich.* 598, 858 (2003)

TENORIO-TAGLE, GUILLERMO. Supergalactic Winds Driven by Multiple Super–Star Clusters. *Guillermo Tenorio-Tagle, Sergiy Silich, & Casiana Munoz-Tunon.* 597, 279 (2003)

TEPLITZ, HARRY I. Emission-Line Galaxies in the STIS Parallel Survey. II. Star Formation Density. *Harry I. Teplitz, Nicholas R. Collins, Jonathan P. Gardner, Robert S. Hill, & Jason Rhodes.* 589, 704 (2003)

Emission-Line Galaxies in the Space Telescope Imaging Spectrograph Parallel Survey. I. Observations and Data Analysis. *Harry I. Teplitz, Nicholas R. Collins, Jonathan P. Gardner, Robert S. Hill, Sara R. Heap, Don J. Lindler, Jason Rhodes, & Bruce E. Woodgate.* 146, 209 (2003)

See FIGER, DONALD F., et al. High-Precision Stellar Radial Velocities in the Galactic Center.

TERADA, HIROSHI. See GOTO, MIWA, et al. Spatially Resolved 3 Micron Spectroscopy of IRAS 22272+5435: Formation and Evolution of Aliphatic Hydrocarbon Dust in Proto–Planetary Nebulae.

See PYO, TAE-SOO, et al. Adaptive Optics Spectroscopy of the [Fe II] Outflow from DG Tauri.

See IYE, MASANORI, et al. ERO R1 in the Field of Cl 0939+4713: Evidence for an S0-Like Galaxy at $z \sim 1.5$.

See GOTO, MIWA, et al. Carbon Isotope Ratio in $^{12}CO/^{13}CO$ toward Local Molecular Clouds with Near-Infrared High-Resolution Spectroscopy of Vibrational Transition Bands.

TERÄSRANTA, H. See BÖTTCHER, M., et al. Coordinated Multiwavelength Observations of BL Lacertae in 2000.

TERASAWA, MARIKO. Nucleosynthesis in Baryon-Rich Outflows Associated with Gamma-Ray Bursts. *Susumu Inoue, Nobuyuki Iwamoto, Manabu Orito, & Mariko Terasawa.* 595, 294 (2003)

TERASHIMA, Y. X-Ray–Extreme Ultraviolet Simultaneous Observations of NGC 5548: Fast Extreme Ultraviolet Dip without X-Ray Variation. *Y. Haba, H. Kunieda, K. Misaki, Y. Terashima, J. S. Kaastra, R. Mewe, A. C. Fabian, & K. Iwasawa.* 599, 949 (2003)

TERASHIMA, YUICHI. *Chandra* Snapshot Observations of Low-Luminosity Active Galactic Nuclei with a Compact Radio Source. *Yuichi Terashima & Andrew S. Wilson.* 583, 145 (2003)

A Stringent Limit on the Accretion Luminosity of the Possible Central Black Hole in the Globular Cluster M15. *Luis C. Ho, Yuichi Terashima, & Takashi Okajima.* 587, L35 (2003)

Detection of the "Active" Nucleus of M32. *Luis C. Ho, Yuichi Terashima, & James S. Ulvestad.* 589, 783 (2003)

X-Ray Evidence of a Buried Active Galactic Nucleus in UGC 5101. *Masatoshi Imanishi, Yuichi Terashima, Naohisa Anabuki, & Takao Nakagawa.* 596, L167 (2003)

TEREBEY, S. The Impact of Ionizing Stars on the Diffuse Interstellar Medium: A Swept-Up Shell and Ionized Halo around the W4 Chimney/Superbubble. *S. Terebey, M. Fich, R. Taylor, Y. Cao, & T. Hancock.* 590, 906 (2003)

TERIACA, L. *Solar and Heliospheric Observatory*/Coronal Diagnostic Spectrograph and Ground-based Observations of a Two-Ribbon Flare: Spatially Resolved Signatures of Chromospheric Evaporation. *L. Teriaca, A. Falchi, G. Cauzzi, R. Falciani, L. A. Smaldone, & V. Andretta.* 588, 596 (2003)

TERIACA, LUCA. The Nascent Solar Wind: Origin and Acceleration. *Luca Teriaca, Giannina Poletto, Marco Romoli, & Doug A. Biesecker.* 588, 566 (2003)

TERLEVICH, E. Lyα Emission in Starbursts: Implications for Galaxies at High Redshift. *J. M. Mas-Hesse, D. Kunth, G. Tenorio-Tagle, C. Leitherer, R. J. Terlevich, & E. Terlevich.* 598, 858 (2003)

TERLEVICH, R. J. Lyα Emission in Starbursts: Implications for Galaxies at High Redshift. *J. M. Mas-Hesse, D. Kunth, G. Tenorio-Tagle, C. Leitherer, R. J. Terlevich, & E. Terlevich.* 598, 858 (2003)

TERNDRUP, D. M. See MIRABAL, N., et al. GRB 021004: A Possible Shell Nebula around a Wolf-Rayet Star Gamma-Ray Burst Progenitor.

TERNDRUP, DONALD M. The Distances to Open Clusters from Main-Sequence Fitting. I. New Models and a Comparison with the Properties of the Hyades Eclipsing Binary VB 22. *Marc H. Pinsonneault, Donald M. Terndrup, Robert B. Hanson, & John R. Stauffer.* 598, 588 (2003)

TERZIĆ, BALŠA. Supermassive Black Hole Binaries as Galactic Blenders. *Henry E. Kandrup, Ioannis V. Sideris, Balša Terzić, & Courtlandt L. Bohn.* 597, 111 (2003)

TESTA, VINCENZO. See BECKER, WERNER, et al. *Chandra X-Ray Observatory* Observations of the Globular Cluster M28 and Its Millisecond Pulsar PSR 1821−24.

TESTI, L. Clustered Star Formation in W75 N. *D. S. Shepherd, L. Testi, & D. P. Stark.* 584, 882 (2003)

First Evidence of Dusty Disks around Herbig Be Stars. *A. Fuente, A. Rodríguez-Franco, L. Testi, A. Natta, R. Bachiller, & R. Neri.* 598, L39 (2003)

TETER, M. A. The Variable Jet of the Vela Pulsar. *G. G. Pavlov, M. A. Teter, O. Kargaltsev, & D. Sanwal.* 591, 1157 (2003)

TEUBEN, PETER. The Formation of Nuclear Rings in Barred Spiral Galaxies. *Michael W. Regan & Peter Teuben.* 582, 723 (2003)

TEUBEN, PETER J. Central Mass Concentration and Bar Dissolution in Nearby Spiral Galaxies. *Mousumi Das, Peter J. Teuben, Stuart N. Vogel, Michael W. Regan, Kartik Sheth, Andrew I. Harris, & William H. Jefferys.* 582, 190 (2003)

TEUBER, JAN. See COLLEY, WESLEY N., et al. Around-the-Clock Observations of the Q9057+561A,B Gravitationally Lensed Quasar. II. Results for the Second Observing Season.

TEUKOLSKY, SAUL A. Saturation of the r-Mode Instability. *Phil Arras, Eanna E. Flanagan, Sharon M. Morsink, A. Katrin Schenk, Saul A. Teukolsky, & Ira Wasserman.* 591, 1129 (2003)

TEYSSIER, D. The Hot Core around the Low-Mass Protostar IRAS 16293−2422: Scoundrels Rule! *S. Cazaux, A. G. G. M. Tielens, C. Ceccarelli, A. Castets, V. Wakelam, E. Caux, B. Parise, & D. Teyssier.* 593, L51 (2003)

THACKER, ROBERT J. On the Spatial Correlations of Lyman Break Galaxies. *Evan Scannapieco & Robert J. Thacker.* 590, L69 (2003)

THADDEUS, P. Rotational Spectra of the Nitrogen-Sulfur Carbon NC_nS, $n = 1$–7. *M. C. McCarthy, A. L. Cooksy, S. Mohamed, V. D. Gordon, & P. Thaddeus.* 144, 287 (2003)

Precise Millimeter-Wave Laboratory Frequences for CS and $C^{34}S$. *C. A. Gottlieb, P. C. Myers, & P. Thaddeus.* 588, 655 (2003)

The Radio Spectrum of the Phenyl Radical. *R. J. McMahon, M. C. McCarthy, C. A. Gottlieb, J. B. Dudek, J. F. Stanton, & P. Thaddeus.* 590, L61 (2003)

The Radio Spectrum of Si_3. *M. C. McCarthy & P. Thaddeus.* 592, L91 (2003)

THADDEUS, PATRICK. CH, CO, and $E(B-V)$ as Molecular Gas Tracers in a Translucent Cloud. *Loris Magnani, Raymond J. Chastain, Hyekyung Clarisse Kim, Dap Hartmann, Anthony T. Truong, & Patrick Thaddeus.* 586, 1111 (2003)

THAKAR, ANIRUDDHA R. See BUDAVÁRI, TAMÁS, et al. Angular Clustering with Photometric Redshifts in the Sloan Digital Sky Survey: Bimodality in the Clustering Properties of Galaxies.

THÉADO, SYLVIE. On the Coupling between Helium Settling and Rotation-induced Mixing in Stellar Radiative Zones. I. Analytical Approach. *Sylvie Vauclair & Sylvie Théado.* 587, 777 (2003)

On the Coupling between Helium Settling and Rotation-induced Mixing in Stellar Radiative Zones. II. Numerical Approach. *Sylvie Théado & Sylvie Vauclair.* 587, 784 (2003)

On the Coupling between Helium Settling and Rotation-induced Mixing in Stellar Radiative Zones. III. Applications to Light Elements in Population I Main-Sequence Stars. *Sylvie Théado & Sylvie Vauclair.* 587, 795 (2003)

THEIL, D. S. Mid-Infrared Imaging Polarimetry of NGC 7027. *C. A. Jurgenson, R. E. Stencel, D. S. Theil, D. I. Klebe, & T. Ueta.* 582, L35 (2003)

THEJAPPA, G. Polarization and Fragmentation of Solar Type II Radio Bursts. *G. Thejappa, P. Zlobec, & R. J. MacDowall.* 592, 1234 (2003)

THEUNS, TOM. Metallicity of the Intergalactic Medium Using Pixel Statistics. II. The Distribution of Metals as Traced by C IV. *Joop Schaye, Anthony Aguirre, Tae-Sun Kim, Tom Theuns, Michael Rauch, & Wallace L. W. Sargent.* 596, 768 (2003)

THI, W.-F. Molecular Gas in Spiral Galaxies: A New Warm Phase at Large Galactocentric Distances?: Erratum (ApJ, 579, 270 [2002]). *P. P. Papadopoulos, W.-F. Thi, & S. Viti.* 583, 524 (2003) (Orig. paper in 579, 270 (2002))

THIELE, U. See KLOSE, S., et al. The Very Faint *K*-Band Afterglow of GRB 020819 and the Dust Extinction Hypothesis of the Dark Bursts.

THIM, FRANK. The Cepheid Distance to NGC 5236 (M83) with the ESO Very Large Telescope. *Frank Thim, G. A. Tammann, A. Saha, A. Dolphin, Allan Sandage, E. Tolstoy, & Lukas Labhardt.* 590, 256 (2003)

THOLLANDER, L. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

THOMAS, JOHN H. Fuel-Supply–limited Stellar Relaxation Oscillations: Application to Multiple Rings around Asymptotic Giant Branch Stars and Planetary Nebulae. *Hugh M. Van Horn, John H. Thomas, Adam Frank, & Eric G. Blackman.* 585, 983 (2003)

THOMAS-OSIP, J. See MATHESON, T., et al. Photometry and Spectroscopy of GRB 03029 and Its Associated Supernova 2003dh: The First Two Months.

THOMMES, EDWARD W. Resonant Inclination Excitation of Migrating Giant Planets. *Edward W. Thommes & Jack J. Lissauer.* 597, 566 (2003)

THOMPSON, C. See WOODS, P. M., et al. The 2001 April Burst Activation of SGR 1900+14: Pulse Properties and Torque.

THOMPSON, D. See GHEZ, A. M., et al. The First Measurement of Spectral Lines in a Short-Period Star Bound to the Galaxy's Central Black Hole: A Paradox of Youth.

THOMPSON, DAVID. Three Emission-Line Galaxies at $z \sim 2.4$. *Richard Meyer, David Thompson, & Filippo Mannucci.* 585, 73 (2003)

Hubble Space Telescope WFPC2 Morphologies of *K*-selected Extremely Red Galaxies. *Lin Yan & David Thompson.* 586, 765 (2003)

THOMPSON, I. See MATHESON, T., et al. Photometry and Spectroscopy of GRB 03029 and Its Associated Supernova 2003dh: The First Two Months.

THOMPSON, K. L. See BENSON, B. A., et al. Peculiar Velocity Limits from Measurements of the Spectrum of the Sunyaev-Zeldovich Effect in Six Clusters of Galaxies.

THOMPSON, M. J. Acoustic Wave Propagation in the Sun: Implications for Wave Field and Time-Distance Helioseismology. *C. H. Tong, M. J. Thompson, M. R. Warner, S. P. Rajaguru, & C. C. Pain.* 582, L121 (2003)
A Comparison of Solar *p*-Mode Parameters from MDI and GONG: Mode Frequencies and Structure Inversion. *S. Basu, J. Christensen-Dalsgaard, R. Howe, J. Schou, M. J. Thompson, F. Hill, & R. Komm.* 591, 432 (2003)
Helioseismic Signals and Wave Field Helioseismology. *C. H. Tong, M. J. Thompson, M. R. Warner, & C. C. Pain.* 593, 1242 (2003)
The Significance of Density and Attenuation in the Local Helioseismology. *C. H. Tong, M. J. Thompson, M. R. Warner, & C. C. Pain.* 596, L263 (2003)
THOMPSON, R. See COLAVITA, M., et al. Observations of DG Tauri with the Keck Interferometer.
See SWAIN, MARK, et al. Interferometer Observations of Subparsec-Scale Infrared Emission in the Nucleus of NGC 4151.
THOMPSON, RODGER I. Measuring Distances and Probing the Unresolved Stellar Populations of Galaxies Using Infrared Surface Brightness Fluctuations. *Joseph B. Jensen, John L. Tonry, Brian J. Barris, Rodger I. Thompson, Michael C. Liu, Marcia J. Rieke, Edward A. Ajhar, & John P. Blakeslee.* 583, 712 (2003)
High-Redshift Candidates and the Nature of Small Galaxies in the Hubble Deep Field. *Lisa J. Storrie-Lombardi, Ray J. Weymann, & Rodger I. Thompson.* 591, 623 (2003)
Star Formation History and Other Properties of the Northern Hubble Deep Field. *Rodger I. Thompson.* 596, 748 (2003)
THOMPSON, ROY. See COLLEY, WESLEY N., et al. Around-the-Clock Observations of the Q9057+561A,B Gravitationally Lensed Quasar. II. Results for the Second Observing Season.
THOMPSON, SUSAN E. High-Resolution Spectroscopy of the Pulsating White Dwarf G29-38. *Susan E. Thompson, J. C. Clemens, M. H. van Kerkwijk, & D. Koester.* 589, 921 (2003)
THOMPSON, TODD A. Magnetic Protoneutron Star Winds and *r*-Process Nucleosynthesis. *Todd A. Thompson.* 585, L33 (2003)
Shock Breakout in Core-Collapse Supernovae and Its Neutrino Signature. *Todd A. Thompson, Adam Burrows, & Philip A. Pinto.* 592, 434 (2003)
THOMSEN, B. See HJORTH, J., et al. Very High Column Density and Small Reddening toward GRB 020124 at $z = 3.20$.
THOMSON, J. R. See GIES, D. R., et al. Wind Accretion and State Transitions in Cygnus X-1.
See MARCHENKO, S. V., et al. The Unusual 2001 Periastron Passage in the "Clockwork" Colliding-Wind Binary WR 140.
THOMSON, K. J. The Salty Scrambled Egg: Detection of NaCl toward CRL 2688. *J. L. Highberger, K. J. Thomson, P. A. Young, D. Arnett, & L. M. Ziurys.* 593, 393 (2003)
THORBURN, J. A. Some Diffuse Interstellar Bands Related to Interstellar C_2 Molecules. *J. A. Thorburn, L. M. Hobbs, B. J. McCall, T. Oka, D. E. Welty, S. D. Friedman, T. P. Snow, P. Sonnentrucker, & D. G. York.* 584, 339 (2003)
THORBURN, JULIE A. Observations of C_3 In Translucent Sight Lines. *Takeshi Oka, Julie A. Thorburn, Benjamin J. McCall, Scott D. Friedman, Lewis M. Hobbs, Paule Sonnentrucker, Daniel E. Welty, & Donald G. York.* 582, 823 (2003)
THORNLEY, M. D. Expansion of the R4 H_2O Maser Arc near Cepheus A HW2. *J. F. Gallimore, R. J. Cool, M. D. Thornley, & J. McMullin.* 586, 306 (2003)
THORNLEY, MICHELE D. The BIMA Survey of Nearby Galaxies (BIMA SONG). II. The CO Data. *Tamara T. Helfer, Michele D. Thornley, Michael W. Regan, Tony Wong, Kartik Sheth, Stuart N. Vogel, Leo Blitz, & Douglas C.-J. Bock.* 145, 259 (2003)
THORSETT, S. E. Pulsar PSR B0656+14, the Monogem Ring, and the Origin of the "Knee" in the Primary Cosmic-Ray Spectrum. *S. E. Thorsett, R. A. Benjamin, Walter F. Brisken, A. Golden, & W. M. Goss.* 592, L71 (2003)
The Distance and Radius of the Neutron Star PSR B0656+14. *Walter F. Brisken, S. E. Thorsett, A. Golden, & W. M. Goss.* 593, L89 (2003)
THORSTENSEN, J. R. See MIRABAL, N., et al. GRB 021004: A Possible Shell Nebula around a Wolf-Rayet Star Gamma-Ray Burst Progenitor.
THORWIRTH, S. A Concise New Look at the *l*-Type Spectrum of $H^{12}C^{14}N$. *S. Thorwirth, H. S. P. Müller, F. Lewen, S. Brünken, V. Ahrens, & G. Winnewisser.* 585, L163 (2003)
Detection of HCN Direct *l*-Type Transitions Probing Hot Molecular Gas in the Proto–Planetary Nebula CRL 618. *S. Thorwirth, F. Wyrowski, P. Schilke, K. M. Menten, S. Brünken, H. S. P. Müller, & G. Winnewisser.* 586, 338 (2003)
Physical Conditions in the Proto–Planetary Nebula CRL 618 Derived from Observations of Vibrationally Excited HC_3N. *F. Wyrowski, P. Schilke, S. Thorwirth, K. M. Menten, & G. Winnewisser.* 586, 344 (2003)
THORWIRTH, SVEN. First Detection of Vibrationally Excited HNC in Space. *Peter Schilke, Claudio Comito, & Sven Thorwirth.* 582, L101 (2003)
THROOP, HENRY. Evidence for Grain Growth in the Protostellar Disks of Orion. *R. Y. Shuping, John Bally, Mark Morris, & Henry Throop.* 587, L109 (2003)
THUAN, TRINH X. New Light on the Stellar Populations in I Zw 18: Deep Near-Infrared Imaging. *Leslie K. Hunt, Trinh X. Thuan, & Yuri I. Izotov.* 588, 281 (2003)
TIBBETS, K. X-Ray Modeling of Very Young Early-Type Stars in the Orion Trapezium: Signatures of Magnetically Confined Plasmas and Evolutionary Implications. *N. S. Schulz, C. Canizares, D. Huenemoerder, & K. Tibbets.* 595, 365 (2003)
TICHÁ, JANA. Peculiar Pair of Distant Periodic Comets C/2002 A1 and C/2002 A2 (LINEAR). *Zdenek Sekanina, Paul W. Chodas, Miloš Tichý, Jana Tichá, & Michal Kočer.* 591, L67 (2003)
TICHÝ, MILOŠ. Peculiar Pair of Distant Periodic Comets C/2002 A1 and C/2002 A2 (LINEAR). *Zdenek Sekanina, Paul W. Chodas, Miloš Tichý, Jana Tichá, & Michal Kočer.* 591, L67 (2003)
TICONA, R. See WATANABE, K., et al. Solar Neutron Event in Association with a Large Solar Flare on 2000 November 24.
TIEDE, GLENN P. Red Galaxy Clustering in the NOAO Deep Wide-Field Survey. *Michael J. I. Brown, Arjun Dey, Buell T. Jannuzi, Tod R. Lauer, Glenn P. Tiede, & Valerie J. Mikles.* 597, 225 (2003)
TIELENS, A. G. G. M. *Hubble Space Telescope*/NICMOS Near-Infrared Imaging of the Proto–Planetary Nebula OH 231.8+4.2. *C. A. Meakin, J. H. Bieging, W. B. Latter, J. L. Hora, & A. G. G. M. Tielens.* 585, 482 (2003)
Neutral Atomic Phases of the Interstellar Medium in the Galaxy. *Mark G. Wolfire, Christopher F. McKee, David Hollenbach, & A. G. G. M. Tielens.* 587, 278 (2003)
Laboratory Infrared Spectroscopy of Cationic Polycyclic Aromatic Hydrocarbon Molecules. *Jos Oomens, A. G. G. M. Tielens, Boris G. Sartakov, Gert von Helden, & Gerard Meijer.* 591, 968 (2003)
The Hot Core around the Low-Mass Protostar IRAS 16293−2422: Scoundrels Rule! *S. Cazaux, A. G. G. M. Tielens, C. Ceccarelli, A. Castets, V. Wakelam, E. Caux, B. Parise, & D. Teyssier.* 593, L51 (2003)
TIENGO, A. See MILLER, J. M., et al. *XMM-Newton* Spectroscopy of the Accretion-driven Millisecond X-Ray Pulsar XTE J1751−305 in Outburst.
See MEREGHETTI, S., et al. *Integral* and *XMM-Newton* Observations of the Weak Gamma-Ray Burst GRB 030227.
TILAV, S. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.
TILLEY, DAVID A. Gravitational Collapse of Filamentary Magnetized Molecular Clouds. *David A. Tilley & Ralph E. Pudritz.* 593, 426 (2003)
TIMBIE, P. See AGUIRRE, J. E., et al. The Spectrum of Integrated Millimeter Flux of the Magellanic Clouds and 30 Doradus from TopHat and DIRBE Data.
TIMBIE, PETER T. An Instrument for Investigating the Large Angular Scale Polarization of the Cosmic Microwave Background. *Brian G. Keating, Christopher W. O'Dell, Joshua O. Gundersen, Lucio Piccirillo, Nate C. Stebor, & Peter T. Timbie.* 144, 1 (2003)
TIMMES, F. X. On Variations in the Peak Luminosity of Type Ia Supernovae. *F. X. Timmes, Edward F. Brown, & J. W. Truran.* 590, L83 (2003)
See DURSI, L. J., et al. The Response of Model and Astrophysical Thermonuclear Flames to Curvature and Stretch.
TIMOTEO, VARESE. Pion Production in the Inner Disk Around Cygnus X-1. *Cesar Meirelles Filho, Celso L. Lima, Hideaki Miyake, & Varese Timoteo.* 595, 322 (2003)
TINGAY, S. J. See BIGNALL, H. E., et al. Rapid Variability and Annual Cycles in the Characteristic Timescale of the Scintillating Source PKS 1257−326.
TINNEY, C. The Hawaii+Anglo-Australian Observatory *K*-Band Galaxy Redshift Survey. I. The Local *K*-Band Luminosity Function. *J.-S. Huang, K. Glazebrook, L. L. Cowie, & C. Tinney.* 584, 203 (2003)
TINNEY, C. G. Four New Planets Orbiting Metal-Enriched Stars. *C. G. Tinney, R. Paul Butler, Geoffrey W. Marcy, Hugh R. A. Jones, Alan J. Penny, Chris McCarthy, Brad D. Carter, & Jade Bond.* 587, 423 (2003)
A Planet in a Circular Orbit with a 6 Year Period. *Brad D. Carter, R. Paul Butler, C. G. Tinney, Hugh R. A. Jones, Geoffrey W. Marcy, Chris McCarthy, Debra A. Fischer, & Alan J. Penny.* 593, L43 (2003)

TITARCHUK, LEV. Rayleigh-Taylor Gravity Waves and Quasi-periodic Oscillation Phenomena in X-Ray Binaries. *Lev Titarchuk.* 591, 354 (2003)

The Bursting Behavior of 4U 1728−34: The Parameters of a Neutron Star and the Geometry of a Neutron Star–Disk System. *Nickolai Shaposhnikov, Lev Titarchuk, & Frank Haberl.* 593, L35 (2003)

A Method for Black Hole Mass Determination in Accretion-powered X-Ray Sources. *Chris R. Shrader & Lev Titarchuk.* 598, 168 (2003)

Broad Redshifted Line as Signature of Outflow. *Lev Titarchuk, Demos Kazanas, & Peter A. Becker.* 598, 411 (2003)

TITLE, ALAN M. The Properties of Small Magnetic Regions on the Solar Surface and the Implications for the Solar Dynamo(s). *Hermance J. Hagenaar, Carolus J. Schrijver, & Alan M. Title.* 584, 1107 (2003)

Asterospheric Magnetic Fields and Winds of Cool Stars. *Carolus J. Schrijver, Marc L. DeRosa, & Alan M. Title.* 590, 493 (2003)

The Magnetic Connection between the Solar Photosphere and the Corona. *Carolus J. Schrijver & Alan M. Title.* 597, L165 (2003)

TITOV, V. S. Magnetic Pinching of Hyperbolic Flux Tubes. I. Basic Estimations. *V. S. Titov, K. Galsgaard, & T. Neukirch.* 582, 1172 (2003)

Magnetic Pinching of Hyperbolic Flux Tubes. II. Dynamic Numerical Model. *K. Galsgaard, V. S. Titov, & T. Neukirch.* 595, 506 (2003)

Binary Reconnection and the Heating of the Solar Corona. *E. R. Priest, D. W. Longcope, & V. S. Titov.* 598, 667 (2003)

TOCCHINI-VALENTINI, DOMENICO. Cosmic Microwave Background as a Gravity Probe. *Luca Amendola, Claudia Quercellini, Domenico Tocchini-Valentini, & Alessandro Pasqui.* 583, L53 (2003)

TOFFOLATTI, L. Contributions of Point Extragalactic Sources to the Cosmic Microwave Background Bispectrum. *F. Argüeso, J. González-Nuevo, & L. Toffolatti.* 598, 86 (2003)

TOFT, S. See HJORTH, J., et al. Very High Column Density and Small Reddening toward GRB 020124 at $z = 3.20$.

TOKANAI, F. See ENOMOTO, R., et al. Search for TeV Gamma Rays from SN 1987A in 2001.

TOKUNAGA, ALAN T. A Survey for Circumstellar Disks around Young Substellar Objects. *Michael C. Liu, Joan Najita, & Alan T. Tokunaga.* 585, 372 (2003)

See PYO, TAE-SOO, et al. Adaptive Optics Spectroscopy of the [Fe II] Outflow from DG Tauri.

TOKUNO, H. See WATANABE, K., et al. Solar Neutron Event in Association with a Large Solar Flare on 2000 November 24.

TOLSTOY, E. The Cepheid Distance to NGC 5236 (M83) with the ESO Very Large Telescope. *Frank Thim, G. A. Tammann, A. Saha, A. Dolphin, Allan Sandage, E. Tolstoy, & Lukas Labhardt.* 590, 256 (2003)

TOLSTOY, ELINE. Deep *Hubble Space Telescope* Imaging of IC 1613. II. The Star Formation History. *Evan D. Skillman, Eline Tolstoy, Andrew A. Cole, Andrew E. Dolphin, Abhijit Saha, J. S. Gallagher, R. C. Dohm-Palmer, & Mario Mateo.* 596, 253 (2003)

See PRITZL, BARTON J., et al. Anomalous Evolution of the Dwarf Galaxy HIPASS J1321−31.

TOMCZYK, S. Magnetic Maps of Prominences from Full Stokes Analysis of the He I D3 Line. *R. Casini, A. López Ariste, S. Tomczyk, & B. W. Lites.* 598, L67 (2003)

TOMIMATSU, AKIRA. Relativistic Acceleration of Magnetically Driven Jets. *Akira Tomimatsu & Masaaki Takahashi.* 592, 321 (2003)

TOMINAGA, N. See KAWABATA, K. S., et al. On the Spectrum and Spectropolarimetry of Type Ic Hypernova SN 2003dh/GRB 030329.

TOMINAGA, NOZOMU. See MAZZALI, PAOLO A., et al. The Type Ic Hypernova SN 2003dh/GRB 030329.

TOMITA, HIROYUKI. See YOSHII, YUZURU, et al. The Optical/Near-Infrared Light Curves of SN 2002ap for the First 140 Days after Discovery.

A Two-Component Model for the Light Curves of Hypernovae. *Keiichi Maeda, Paolo A. Mazzali, Jingsong Deng, Ken'ichi Nomoto, Yuzuru Yoshii, Hiroyuki Tomita, & Yukiyasu Kobayashi.* 593, 931 (2003)

TOMITA, KENJI. Dipole Anisotropies of *IRAS* Galaxies and the Contribution of a Large-Scale Local Void. *Kenji Tomita.* 584, 580 (2003)

TOMIZAWA, NAMI. Enhancement of Resonant Thermonuclear Reaction Rates in Extremely Dense Stellar Plasmas. *Naoki Itoh, Nami Tomizawa, Shinya Wanajo, & Satoshi Nozawa.* 586, 1436 (2003)

TOMPKINS, W. F. Variability of EGRET Gamma-Ray Sources. *P. L. Nolan, W. F. Tompkins, I. A. Grenier, & P. F. Michelson.* 597, 615 (2003)

TOMSICK, J. A. X-Ray Emission from the Jets of XTE J1550−564. *P. Kaaret, S. Corbel, J. A. Tomsick, R. Fender, J. M. Miller, J. A. Orosz, T. Tzioumis, & R. Wijnands.* 582, 945 (2003)

X-Ray Temporal Properties of XTE J1650−500 during Outburst Decay. *E. Kalemci, J. A. Tomsick, R. E. Rothschild, K. Pottschmidt, S. Corbel, R. Wijnands, J. M. Miller, & P. Kaaret.* 586, 419 (2003)

Extended Emission from Cygnus X-3 Detected with *Chandra*. *W. A. Heindl, J. A. Tomsick, R. Wijnands, & D. M. Smith.* 588, L97 (2003)

Spectral Evolution of the Microquasar XTE J1550−564 over Its Entire 2000 Outburst. *J. Rodriguez, S. Corbel, & J. A. Tomsick.* 595, 1032 (2003)

Discovery of X-Ray Burst Oscillations from a Neutron Star X-Ray Transient in the Globular Cluster NGC 6440. *P. Kaaret, J. J. M. in 't Zand, J. Heise, & J. A. Tomsick.* 598, 481 (2003)

TOMSICK, JOHN A. X-Ray Jet Emission from the Black Hole X-Ray Binary XTE J1550−564 with *Chandra* in 2000. *John A. Tomsick, Stéphane Corbel, Rob Fender, Jon M. Miller, Jerome A. Orosz, Tasso Tzioumis, Rudy Wijnands, & Philip Kaaret.* 582, 933 (2003)

X-Ray Flares and Oscillations from the Black Hole Candidate X-Ray Transient XTE J1650−500 at Low Luminosity. *John A. Tomsick, Emrah Kalemci, Stephane Corbel, & Philip Kaaret.* 592, 1100 (2003)

Chandra Detections of Two Quiescent Black Hole X-Ray Transients. *John A. Tomsick, Stéphane Corbel, Rob Fender, Jon M. Miller, Jerome A. Orosz, Michael P. Rupen, Tasso Tzioumis, Rudy Wijnands, & Philip Kaaret.* 597, L133 (2003)

TONG, C. H. Acoustic Wave Propagation in the Sun: Implications for Wave Field and Time-Distance Helioseismology. *C. H. Tong, M. J. Thompson, M. R. Warner, S. P. Rajaguru, & C. C. Pain.* 582, L121 (2003)

Helioseismic Signals and Wave Field Helioseismology. *C. H. Tong, M. J. Thompson, M. R. Warner, & C. C. Pain.* 593, 1242 (2003)

The Significance of Density and Attenuation in the Local Helioseismology. *C. H. Tong, M. J. Thompson, M. R. Warner, & C. C. Pain.* 596, L263 (2003)

TONGE, J. Cyclotron Maser Radiation from Astrophysical Shocks. *R. Bingham, B. J. Kellett, R. A. Cairns, J. Tonge, & J. T. Mendonça.* 595, 279 (2003)

TONGE, J. W. Interpenetrating Plasma Shells: Near-Equipartition Magnetic Field Generation and Nonthermal Particle Acceleration. *L. O. Silva, R. A. Fonseca, J. W. Tonge, J. M. Dawson, W. B. Mori, & M. V. Medvedev.* 596, L121 (2003)

TONRY, JOHN L. Measuring Distances and Probing the Unresolved Stellar Populations of Galaxies Using Infrared Surface Brightness Fluctuations. *Joseph B. Jensen, John L. Tonry, Brian J. Barris, Rodger I. Thompson, Michael C. Liu, Marcia J. Rieke, Edward A. Ajhar, & John P. Blakeslee.* 583, 712 (2003)

See BLAKESLEE, JOHN P., et al. Discovery of Two Distant Type Ia Supernovae in the Hubble Deep Field–North with the Advanced Camera for Surveys.

Cosmological Results from High-z Supernovae. *John L. Tonry, Brian P. Schmidt, Brian Barris, Pablo Candia, Peter Challis, Alejandro Clocchiatti, Alison L. Coil, Alexei V. Filippenko, Peter Garnavich, Craig Hogan, Stephen T. Holland, Saurabh Jha, Robert P. Kirshner, Kevin Krisciunas, Bruno Leibundgut, Weidong Li, Thomas Matheson, Mark M. Phillips, Adam G. Riess, Robert Schommer, R. Chris Smith, Jesper Sollerman, Jason Spyromilio, Christopher W. Stubbs, & Nicholas B. Suntzeff.* 594, 1 (2003)

TORBET, E. The MAT/TOCO Measurement of the Angular Power Spectrum of the Cosmic Microwave Background at 30 and 40 GHz. *M. R. Nolta, M. J. Devlin, W. B. Dorwart, A. D. Miller, L. A. Page, J. Puchalla, E. Torbet, & H. T. Tran.* 598, 97 (2003)

See RUNYAN, M. C., et al. ACBAR: The Arcminute Cosmology Bolometer Array Receiver.

See GOLDSTEIN, J. H., et al. Estimates of Cosmological Parameters Using the Cosmic Microwave Background Angular Power Spectrum of ACBAR.

TORII, K. See KAWABATA, K. S., et al. On the Spectrum and Spectropolarimetry of Type Ic Hypernova SN 2003dh/GRB 030329.

See HJORTH, J., et al. Very High Column Density and Small Reddening toward GRB 020124 at $z = 3.20$.

The Earliest Optical Observations of GRB 30329. *K. Torii, T. Kato, H. Yamaoka, T. Kohmura, Y. Okamoto, K. Ohnishi, K. Kadota, S. Yoshida, K. Kinugasa, M. Kohama, T. Oribe, & T. Kawabata.* 597, L101 (2003)

See CREW, G. B., et al. *HETE-2* Localization and Observation of the Bright, X-Ray–rich Gamma-Ray Burst GRB 021211.

TORII, S. See AMENOMORI, M., et al. Multi-TeV Gamma-Ray Flares from Markarian 421 in 2000 and 2001 Observed with the Tibet Air Shower Array.

TORNAMBÉ, A. See VALENTINI, G., et al. Optical and Near-Infrared Photometry of the Type Ia Supernova 2000E in NGC 6951.

TORNAMBÉ, AMEDEO. Carbon-Oxygen White Dwarfs Accreting CO-rich Matter. I. A Comparison between Rotating and Nonrotating Models. *Luciano Piersanti, Simona Gagliardi, Icko Iben, Jr., & Amedeo Tornambé.* 583, 885 (2003)

Carbon-Oxygen White Dwarf Accreting CO-Rich Matter. II. Self-Regulating Accretion Process up to the Explosive Stage. *Luciano Piersanti, Simona Gagliardi, Icko Iben, Jr., & Amedeo Tornambe.* 598, 1229 (2003)

TOROPIN, YU. M. Magnetohydrodynamic Simulations of Accretion to a Star in the "Propeller" Regime. *M. M. Romanova, O. D. Toropina, Yu. M. Toropin, & R. V. E. Lovelace.* 588, 400 (2003)

Magnetic Inhibition of Accretion and Observability of Isolated Old Neutron Stars. *O. D. Toropina, M. M. Romanova, Yu. M. Toropin, & R. V. E. Lovelace.* 593, 472 (2003)

TOROPINA, O. D. Magnetohydrodynamic Simulations of Accretion to a Star in the "Propeller" Regime. *M. M. Romanova, O. D. Toropina, Yu. M. Toropin, & R. V. E. Lovelace.* 588, 400 (2003)

Magnetic Inhibition of Accretion and Observability of Isolated Old Neutron Stars. *O. D. Toropina, M. M. Romanova, Yu. M. Toropin, & R. V. E. Lovelace.* 593, 472 (2003)

TORRELLES, J. M. Evidence for Evolution of the Outflow Collimation in Very Young Stellar Objects. *J. M. Torrelles, N. A. Patel, G. Anglada, J. F. Gómez, P. T. P. Ho, L. Lara, A. Alberdi, J. Cantó, S. Curiel, G. Garay, & L. F. Rodríguez.* 598, L115 (2003)

TORRELLES, JOSE M. Very Large Array Observations of Proper Motions in L1551 IRS 5. *Luis F. Rodríguez, Salvador Curiel, Jorge Cantó, Laurent Loinard, Alejandro C. Raga, & Jose M. Torrelles.* 583, 330 (2003)

See TRINIDAD, MIGUEL A., et al. Observations of Water Masers and Radio Continuum Emission in AFGL 2591.

TORRES, CARLOS A.O. See BARBUY, BEATRIZ, et al. Oxygen Abundance in the Template Halo Giant HD 122563.

TORRES, D. F. Discovery of a New Radio Galaxy within the Error Box of the Unidentified Gamma-Ray Source 3EG J1735−1500. *J. A. Combi, G. E. Romero, J. M. Paredes, D. F. Torres, & M. Ribó.* 588, 731 (2003)

TORRES, DIEGO F. Possible New γ-Ray Pulsar Detections by the *AGILE* and *GLAST* Missions: An Outer Gap Model Look at the Parkes Pulsar Catalog. *Diego F. Torres & Sebastián E. Nuza.* 583, L25 (2003)

Signatures of Hadronic Cosmic Rays in Starbursts? High-Energy Photons and Neutrinos from NGC 253. *Gustavo E. Romero & Diego F. Torres.* 586, L33 (2003)

Neutrinos from Accreting Neutron Stars. *Luis A. Anchordoqui, Diego F. Torres, Thomas P. McCauley, Gustavo E. Romero, & Felix A. Aharonian.* 589, 481 (2003)

On the Cross-Correlation between the Arrival Direction of Ultra–High-Energy Cosmic Rays, BL Lacertae Objects, and EGRET Detections: A New Way to Identify EGRET Sources? *Diego F. Torres, Stephen Reucroft, Olaf Reimer, & Luis A. Anchordoqui.* 595, L13 (2003)

Testing the Binary Black Hole Paradigm through the Fe Kα Line Profile: Application to 3C 273. *Diego F. Torres, Gustavo E. Romero, Xavier Barcons, & Youjun Lu.* 596, L31 (2003)

TORRES, G. See LOBEL, A., et al. High-Resolution Spectroscopy of the Yellow Hypergiant ρ Cassiopeiae from 1993 through the Outburst of 2000–2001.

TORRES, GUILLERMO. High-Resolution Spectroscopic Follow-up of OGLE Planetary Transit Candidates in the Galactic Bulge: Two Possible Jupiter-Mass Planets and Two Blends. *Maciej Konacki, Guillermo Torres, Dimitar D. Sasselov, & Saurabh Jha.* 597, 1076 (2003)

TORRES-PEIMBERT, S. Broad Hα Wings in Nebulae around Evolved Stars and in Young Planetary Nebulae. *A. Arrieta & S. Torres-Peimbert.* 147, 97 (2003)

TORSTI, J. The Origin of High-Energy ^{3}He-rich Solar Particle Events. *L. Kocharov & J. Torsti.* 586, 1430 (2003)

TÓRTOLA, M. A. Large Mixing Angle Oscillations as a Probe of the Deep Solar Interior. *C. Burgess, N. S. Dzhalilov, M. Maltoni, T. I. Rashba, V. B. Semikoz, M. A. Tórtola, & J. W. F. Valle.* 588, L65 (2003)

TORTORA, P. Stochastic Gravitational Wave Background: Upper Limits in the 10^{-6} to 10^{-3} Hz Band. *J. W. Armstrong, L. Iess, P. Tortora, & B. Bertotti.* 599, 806 (2003)

TOSTI, G. See BÖTTCHER, M., et al. Coordinated Multiwavelength Observations of BL Lacertae in 2000.

TOTANI, T. See KAWABATA, K. S., et al. On the Spectrum and Spectropolarimetry of Type Ic Hypernova SN 2003dh/GRB 030329.

TOTANI, TOMONORI. Cluster-Cluster Microlensing as a Probe of Intracluster Stars, MACHOs, and Remnants of the First-Generation Stars. *Tomonori Totani.* 586, 735 (2003)

A Failed Gamma-Ray Burst with Dirty Energetic Jets Spirited Away? New Implications for the Gamma-Ray Burst–Supernova Connection from SN 2002ap. *Tomonori Totani.* 598, 1151 (2003)

TÓTH, G. See ROUSSEV, I. I., et al. A Three-dimensional Model of the Solar Wind Incorporating Solar Magnetogram Observations.

TÓTH, GÁBOR. HARM: A Numerical Scheme for General Relativistic Magnetohydrodynamics. *Charles F. Gammie, Jonathan C. McKinney, & Gábor Tóth.* 589, 444 (2003)

Probing the Edge of the Solar System: Formation of an Unstable Jet-Sheet. *Merav Opher, Paulett C. Liewer, Tamas I. Gombosi, Ward Manchester, Darren L. DeZeeuw, Igor Sokolov, & Gabor Toth.* 591, L61 (2003)

TOURNEAR, D. X-Ray Bursts in Neutron Star and Black Hole Binaries from Unconvetional Stellar Aspect Experiment and *Rossi X-Ray Timing Explorer* Data: Detections and Upper Limits. *D. Tournear, E. Raffauf, E. D. Bloom, W. Focke, B. Giebels, G. Godfrey, P. M. Saz Parkinson, K. T. Reilly, K. S. Wood, P. S. Ray, M. T. Wolff, R. M. Bandyopadhyay, M. N. Lovellette, & Jeffrey D. Scargle.* 595, 1058 (2003)

TOURNEAR, D. M. See SAZ PARKINSON, P. M., et al. Long-Term X-Ray Variability of Circinus X-1.

TOUTAIN, T. Does the Energy Supplied to Low-l Solar p-Modes Vary over the Activity Cycle? *W. J. Chaplin, Y. Elsworth, G. R. Isaak, B. A. Miller, R. New, & T. Toutain.* 582, L115 (2003)

TOWNES, C. H. Interferometry on Mira in the Mid-Infrared: Cyclic Variability of the Continuum Diameter and the Effect of Spectral Lines on Apparent Size. *J. Weiner, D. D. S. Hale, & C. H. Townes.* 588, 1064 (2003)

Asymptotic Giant Branch and Supergiant Stellar Diameters in the Mid-Infrared. *J. Weiner, D. D. S. Hale, & C. H. Townes.* 589, 976 (2003)

TOWNES, CHARLES H. Atmospheric Turbulence Measurements at Mount Wilson Observatory. *Nicholas Short, Walt Fitelson, & Charles H. Townes.* 599, 1469 (2003)

TOWNSLEY, DEAN. Measuring White Dwarf Accretion Rates via Their Effective Temperatures. *Dean Townsley & Lars Bildsten.* 596, L227 (2003)

TOWNSLEY, L. K. See MUNO, M. P., et al. A Deep *Chandra* Catalog of X-Ray Point Sources toward the Galactic Center.

See BAGANOFF, F. K., et al. *Chandra* X-Ray Spectroscopic Imaging of Sagittarius A* and the Central Parsec of the Galaxy.

TOWNSLEY, LEISA. X-Rays in the Orion Nebula Cluster: Constraints on the Origins of Magnetic Activity in Pre–Main-Sequence Stars. *Eric D. Feigelson, James A. Gaffney III, Gordon Garmire, Lynne A. Hillenbrand, & Leisa Townsley.* 584, 911 (2003)

Diffuse X-Ray Emission from the Quiescent Superbubble M17, the Omega Nebula. *Bryan C. Dunne, You-Hua Chu, C.-H. Rosie Chen, Justin D. Lowry, Leisa Townsley, Robert A. Gruendl, Martín A. Guerrero, & Margarita Rosado.* 590, 306 (2003)

TOWNSLEY, LEISA K. 10 MK Gas in M17 and the Rosette Nebula: X-Ray Flows in Galactic H II Regions. *Leisa K. Townsley, Eric D. Feigelson, Thierry Montmerle, Patrick S. Broos, You-Hua Chu, & Gordon P. Garmire.* 593, 874 (2003)

TOZZI, P. See WANG, J., et al. A Puzzling X-Ray Source Found in the *Chandra* Deep Field–South.

See GILLI, R., et al. Tracing the Large-Scale Structure in the *Chandra* Deep Field South.

Iron Abundance in the Intracluster Medium at High Redshift. *P. Tozzi, P. Rosati, S. Ettori, S. Borgani, V. Mainieri, & C. Norman.* 593, 705 (2003)

See GROGIN, N. A., et al. *Hubble Space Telescope* Imaging in the *Chandra* Deep Field–South. III. Quantitative Morphology of the 1 Million Second *Chandra* Counterparts and Comparison with the Field Population.

TRÄBERT, E. Experimental Transition Rate of the Green Coronal Line of Fe XIV. *P. Beiersdorfer, E. Träbert, & E. H. Pinnington.* 587, 836 (2003)

TRAN, H. D. Advanced Camera for Surveys Observations of Young Star Clusters in the Interacting Galaxy UGC 10214. *H. D. Tran, M. Sirianni, H. C. Ford, G. D. Illingworth, M. Clampin, G. Hartig, R. H. Becker, R. L. White, F. Bartko, N. Benítez, J. P. Blakeslee, R. Bouwens, T. J. Broadhurst, R. Brown, C. Burrows, E. Cheng, N. Cross, P. D. Feldman, M. Franx, D. A. Golimowski, C. Gronwall, L. Infante, R. A. Kimble, J. Krist, M. Lesser, D. Magee, A. R. Martel, Wm. J. McCann, G. R. Meurer, G. Miley, M. Postman, P. Rosati, W. B. Sparks, & Z. Tsvetanov.* 585, 750 (2003)

See Bouwens, R. J., et al. Star Formation at $z \sim 6$: i-Dropouts in the Advanced Camera for Surveys Guaranteed Time Observation Fields.

See Meurer, Gerhardt R., et al. The Discovery of Globular Clusters in the Protospiral Galaxy NGC 2915: Implications for Hierarchical Galaxy Evolution.

Tran, H. T. The MAT/TOCO Measurement of the Angular Power Spectrum of the Cosmic Microwave Background at 30 and 40 GHz. *M. R. Nolta, M. J. Devlin, W. B. Dorwart, A. D. Miller, L. A. Page, J. Puchalla, E. Torbet, & H. T. Tran.* 598, 97 (2003)

Tran, Hien D. The Unified Model and Evolution of Active Galaxies: Implications from a Spectropolarimetric Study. *Hien D. Tran.* 583, 632 (2003)

See Blakeslee, John P., et al. Discovery of Two Distant Type Ia Supernovae in the Hubble Deep Field–North with the Advanced Camera for Surveys.

Tran, Kim-Vy H. Cl 1358+62: Characterizing the Physical Properties of Cluster Galaxies at $z = 0.33$. *Kim-Vy H. Tran, Luc Simard, Garth Illingworth, & Marijn Franx.* 590, 238 (2003)

The Nature of E+A Galaxies in Intermediate Redshift Clusters. *Kim-Vy H. Tran, Marijn Franx, Garth Illingworth, Daniel D. Kelson, & Pieter van Dokkum.* 599, 865 (2003)

Traub, Wesley A. Two-Mirror Apodization for High-Contrast Imaging. *Wesley A. Traub & Robert J. Vanderbei.* 599, 695 (2003)

Travaglio, C. See Reifarth, R., et al. Stellar Neutron Capture on Promethium: Implications for the s-Process Neutron Density.

Treaves, A. 1WGA J1216.9+3743: *Chandra* Finds an Extremely Steep Ultraluminous X-Ray Source. *I. Cagnoni, R. Turolla, A. Treaves, J.-S. Huang, D. W. Kim, M. Elvis, & A. Celotti.* 582, 654 (2003)

Tremaine, Scott. See Gebhardt, Karl, et al. Axisymmetric Dynamical Models of the Central Regions of Galaxies.

See Pinkney, Jason, et al. Kinematics of 10 Early-Type Galaxies from *Hubble Space Telescope* and Ground-based Spectroscopy.

Eccentric-Disk Models for the Nucleus of M31. *Hiranya V. Peiris & Scott Tremaine.* 599, 237 (2003)

Ejection of Hypervelocity Stars by the (Binary) Black Hole in the Galactic Center. *Qingjuan Yu & Scott Tremaine.* 599, 1129 (2003)

Tremonti, C. A. See Hopkins, A. M., et al. Star Formation Rate Indicators in the Sloan Digital Sky Survey.

Tremonti, Christy. The Stellar Content of Henize 2-10 from Space Telescope Imaging Spectrograph Ultraviolet Spectroscopy. *Rupali Chandar, Claus Leitherer, Christy Tremonti, & Daniela Calzetti.* 586, 939 (2003)

See Glazebrook, Karl, et al. The Sloan Digital Sky Survey: The Cosmic Spectrum and Star Formation History.

Trenti, M. Thermodynamic Description of a Family of Partially Relaxed Stellar Systems. *G. Bertin & M. Trenti.* 584, 729 (2003)

Treu, T. The Hubble Constant from the Gravitational Lens B1608+656. *L. V. E. Koopmans, T. Treu, C. D. Fassnacht, R. D. Blandford, & G. Surpi.* 599, 70 (2003)

Treu, Tommaso. The Structure and Dynamics of Luminous and Dark Matter in the Early-Type Lens Galaxy of 0047−281 at $z = 0.485$. *Léon V. E. Koopmans & Tommaso Treu.* 583, 606 (2003)

A Wide-Field *Hubble Space Telescope* Study of the Cluster Cl 0024+16 at $z = 0.4$. I. Morphological Distributions to 5 Mpc Radius. *Tommaso Treu, Richard S. Ellis, Jean-Paul Kneib, Alan Dressler, Ian Smail, Oliver Czoske, Augustus Oemler, & Priyamvada Natarajan.* 591, 53 (2003)

Constraints on the Equation of State of Dark Energy and the Hubble Constant from Stellar Ages and the Cosmic Microwave Background. *Raul Jimenez, Licia Verde, Tommaso Treu, & Daniel Stern.* 593, 622 (2003)

See Kneib, Jean-Paul, et al. A Wide-Field *Hubble Space Telescope* Study of the Cluster Cl 0024+1654 at $z = 0.4$. II. The Cluster Mass Distribution.

A Unique Small-Scale Gravitational Arc in A1201. *Alastair C. Edge, Graham P. Smith, David J. Sand, Tommaso Treu, Harald Ebeling, Steven W. Allen, & Pieter G. van Dokkum.* 599, L69 (2003)

Treumann, R. A. A Model of Zebra Emission in Solar Type IV Radio Bursts. *J. LaBelle, R. A. Treumann, P. H. Yoon, & M. Karlicky.* 593, 1195 (2003)

Treves, A. Radiative Acceleration and Transient, Radiation-induced Electric Fields. *L. Zampieri, R. Turolla, L. Foschini, & A. Treves.* 592, 368 (2003)

Black Hole Masses and the Fundamental Plane of BL Lacertae Objects. *R. Falomo, J. K. Kotilainen, N. Carangelo, & A. Treves.* 595, 624 (2003)

Treves, Aldo. Bondi Accretion and the Problem of the Missing Isolated Neutron Stars. *Rosalba Perna, Ramesh Narayan, George Rybicki, Luigi Stella, & Aldo Treves.* 594, 936 (2003)

Host Galaxies of Low-Z Radio-loud Quasars: A Search of *Hubble Space Telescope* Archives. *Claudio Pagani, Renato Falomo, & Aldo Treves.* 596, 830 (2003)

Trevese, Dario. Spectral Slope Variability of BL Lacertae Objects in the Optical Band. *Fausto Vagnetti, Dario Trevese, & Roberto Nesci.* 590, 123 (2003)

Trilling, David E. Luminosity Functions of Young Clusters: Modeling the Substellar Mass Regime. *Peter R. Allen, David E. Trilling, David W. Koerner, & I. Neill Reid.* 595, 1222 (2003)

Trinchieri, G. The Nuclear Accretion in the FR I Radio Galaxy IC 4296 from *Chandra* and Very Long Baseline Array Observations. *S. Pellegrini, T. Venturi, A. Comastri, G. Fabbiano, F. Fiore, C. Vignali, R. Morganti, & G. Trinchieri.* 585, 677 (2003)

See Fabbiano, G., et al. The X-Ray–faint Emission of the Supermassive Nuclear Black Hole of IC 1459.

Trinidad, Miguel A. Observations of Water Masers and Radio Continuum Emission in AFGL 2591. *Miguel A. Trinidad, Salvador Curiel, Jorge Cantó, Paola D'Alessio, Luis F. Rodríguez, José M. Torrelles, José F. Gómez, Nimesh Patel, & Paul T. P. Ho.* 589, 386 (2003)

Tristram, P. J. See Sumi, T., et al. Microlensing Optical Depth toward the Galactic Bulge from Microlensing Observations during 2000 with Difference Image Analysis.

Troland, T. H. The Millennium Arecibo 21 Centimeter Absorption-Line Survey. II. Properties of the Warm and Cold Neutral Media. *Carl Heiles & T. H. Troland.* 586, 1067 (2003)

The Millenium Arecibo 21 Centimeter Absorption-Line Survey. I. Techniques and Gaussian Fits. *Carl Heiles & T. H. Troland.* 145, 329 (2003)

Troland, Thomas H. Very Long Baseline Array Continuum and H I Absorption Observations of the Ultraluminous Infrared Galaxy IRAS 17208−0014. *Emmanuel Momjian, Jonathan D. Romney, Christopher L. Carilli, Thomas H. Troland, & Gregory B. Taylor.* 587, 160 (2003)

Sensitive VLBI Continuum and H I Absorption Observations of NGC 7474: First Scientific Observations with the Combined Array VLBA, VLA, and Arecibo. *Emmanuel Momjian, Jonathan D. Romney, Christopher L. Carilli, & Thomas H. Troland.* 597, 809 (2003)

Trudolyubov, Sergey P. Observations of the X-Ray Afterglows of GRB 011211 and GRB 001025 by *XMM-Newton*. *Konstantin N. Borozdin & Sergey P. Trudolyubov.* 583, L57 (2003)

Trujillo, Ignacio. See Labbé, Ivo, et al. Large Disklike Galaxies at High Redshift.

See Rudnick, Gregory, et al. The Rest-Frame Optical Luminosity Density, Color, and Stellar Mass Density of the Universe from $z = 0$ to $z = 3$.

Trujillo Bueno, J. Nonequilibrium CO Chemistry in the Solar Atmosphere. *A. Asensio Ramos, J. Trujillo Bueno, M. Carlsson, & J. Cernicharo.* 588, L61 (2003)

Truong, Anthony T. CH, CO, and $E(B-V)$ as Molecular Gas Tracers in a Translucent Cloud. *Loris Magnani, Raymond J. Chastain, Hyekyung Clarisse Kim, Dap Hartmann, Anthony T. Truong, & Patrick Thaddeus.* 586, 1111 (2003)

Truran, J. W. See Drake, Jeremy J., et al. The Extraordinary X-Ray Light Curve of the Classical Nova V1494 Aquilae (1999 No. 2) in Outburst: The Discovery of Pulsations and a "Burst."

On Variations in the Peak Luminosity of Type Ia Supernovae. *F. X. Timmes, Edward F. Brown, & J. W. Truran.* 590, L83 (2003)

See Ness, J.-U., et al. A *Chandra* Low Energy Transmission Grating Spectrometer Observation of V4743 Sagittarii: A Supersoft X-Ray Source and a Violently Variable Light Curve.

See Dursi, L. J., et al. The Response of Model and Astrophysical Thermonuclear Flames to Curvature and Stretch.

Truran, James W. See Sneden, Christopher, et al. The Extremely Metal-poor, Neutron Capture–rich Star CS 22892−052: A Comprehensive Abundance Analysis.

The Ionizing Efficiency of the First Stars. *Aparna Venkatesan & James W. Truran.* 594, L1 (2003)

Tsarpras, Y. See Kerins, E., et al. Theory of Pixel Lensing toward M31. II. The Velocity Anisotropy and Flattening of the MACHO Distribution.

Tseng, Wei-Ling. Interstellar Glycine. *Yi-Jehng Kuan, Steven B. Charnley, Hui-Chun Huang, Wei-Ling Tseng, & Zbigniew Kisiel.* 593, 848 (2003)

Tsinganos, K. See Böttcher, M., et al. Coordinated Multiwavelength Observations of BL Lacertae in 2000.

TSUBAKI, SIN-YA. Small-Scale Clustering in Isotropic Arrival Distribution of Ultra–High-Energy Cosmic Rays and Implications for Their Source Candidates. *Hiroyuki Yoshiguchi, Shigehiro Nagataki, Sin-ya Tsubaki, & Katsuhiko Sato.* 586, 1211 (2003)

TSUBOI, YOHKO. X-Ray Properties of Young Stellar Objects in OMC-2 and OMC-3 from the *Chandra X-Ray Observatory*: Erratum (ApJ, 566, 974 [2002]). *Masahiro Tsujimoto, Katsuji Koyama, Yohko Tsuboi, Miwa Goto, & Naoto Kobayashi.* 585, 602 (2003) (Orig. paper in 566, 974 (2002))

Coronal X-Ray Emission from an Intermediate-Age Brown Dwarf. *Yohko Tsuboi, Yoshitomo Maeda, Eric D. Feigelson, Gordon P. Garmire, George Chartas, Koji Mori, & Steven H. Pravdo.* 587, L51 (2003)

TSUBOTA, K. See COLAVITA, M., et al. Observations of DG Tauri with the Keck Interferometer.

TSUCHIYA, H. See WATANABE, K., et al. Solar Neutron Event in Association with a Large Solar Flare on 2000 November 24.

See AMENOMORI, M., et al. Multi-TeV Gamma-Ray Flares from Markarian 421 in 2000 and 2001 Observed with the Tibet Air Shower Array.

TSUCHIYA, K. See ENOMOTO, R., et al. Search for TeV Gamma Rays from SN 1987A in 2001.

TSUCHIYA, TOSHIO. A Capture Scenario for Globular Cluster ω Centauri. *Toshio Tsuchiya, Dana I. Dinescu, & Vladimir I. Korchagin.* 589, L29 (2003)

Constraints of the Clumpiness of Dark Matter Halos through Heating of the Disk Galaxies. *Eliani Ardi, Toshio Tsuchiya, & Andreas Burkert.* 596, 204 (2003)

TSUCHIYAMA, AKIRA. Evaporation of Interstellar Organic Materials in the Solar Nebula. *Hideyuki Nakano, Akira Kouchi, Shogo Tachibana, & Akira Tsuchiyama.* 592, 1252 (2003)

TSUJI, TAKASHI. Transition from L to T Dwarfs of the Color-Magnitude Diagram. *Takashi Tsuji & Tadashi Nakajima.* 585, L151 (2003)

See SMITH, VERNE V., et al. High-Resolution Infrared Spectroscopy of the Brown Dwarf ϵ Indi Ba.

TSUJIMOTO, MASAHIRO. X-Ray Properties of Young Stellar Objects in OMC-2 and OMC-3 from the *Chandra X-Ray Observatory*: Erratum (ApJ, 566, 974 [2002]). *Masahiro Tsujimoto, Katsuji Koyama, Yohko Tsuboi, Miwa Goto, & Naoto Kobayashi.* 585, 602 (2003) (Orig. paper in 566, 974 (2002))

TSUJIMOTO, TAKUJI. Relics of Subluminous Supernovae in Metal-poor Stars. *Takuji Tsujimoto & Toshikazu Shigeyama.* 584, L87 (2003)

Excavation of the First Stars. *Toshikazu Shigeyama, Takuji Tsujimoto, & Yuzuru Yoshii.* 586, L57 (2003)

Star Formation History of ω Centauri Imprinted in Elemental Abundance Patterns. *Takuji Tsujimoto & Toshikazy Shigeyama.* 590, 803 (2003)

Accretion of Dust Grains as a Possible Origin of Metal-poor Stars with Low α/Fe Ratios. *Toshikazu Shigeyama & Takuji Tsujimoto.* 598, L47 (2003)

TSUNESADA, Y. See WATANABE, K., et al. Solar Neutron Event in Association with a Large Solar Flare on 2000 November 24.

TSUNETA, SAKU. See NAGATA, SHIN'ICHI, et al. Spatial and Temporal Properties of Hot and Cool Coronal Loops.

TSUNOO, H. See ENOMOTO, R., et al. Search for TeV Gamma Rays from SN 1987A in 2001.

TSURU, T. G. Galactic Gamma-Ray Halo of the Nearby Starbust Galaxy NGC 253. *C. Itoh, R. Enomoto, S. Yanagita, T. Yoshida, & T. G. Tsuru.* 584, L65 (2003)

TSUTSUMI, T. Variability of Sagittarius A*: Flares at 1 Millimeter. *Jun-Hui Zhao, K. H. Young, R. M. Herrnstein, P. T. P. Ho, T. Tsutsumi, K. Y. Lo, W. M. Goss, & G. C. Bower.* 586, L29 (2003)

TSVETANOV, Z. See TRAN, H. D., et al. Advanced Camera for Surveys Observations of Young Star Clusters in the Interacting Galaxy UGC 10214.

See MARCONI, A., et al. Is There Really a Black Hole at the Center of NGC 4041? Constraints from Gas Kinematics.

TSVETANOV, Z. I. See BOUWENS, R. J., et al. Star Formation at $z \sim 6$: *i*-Dropouts in the Advanced Camera for Surveys Guaranteed Time Observation Fields.

See MEURER, GERHARDT R., et al. The Discovery of Globular Clusters in the Protospiral Galaxy NGC 2915: Implications for Hierarchical Galaxy Evolution.

TSVETANOV, ZLATAN I. See BLAKESLEE, JOHN P., et al. Discovery of Two Distant Type Ia Supernovae in the Hubble Deep Field–North with the Advanced Camera for Surveys.

TUCKER, C. See RUNYAN, M. C., et al. ACBAR: The Arcminute Cosmology Bolometer Array Receiver.

TUCKER, DOUGLAS L. See SZALAY, ALEXANDER S., et al. Karhunen-Loève Estimation of the Power Spectrum Parameters from the Angular Distribution of Galaxies in Early Sloan Digital Sky Survey Data.

TUCKER, G. S. See BENNETT, C. L., et al. The *Microwave Anisotropy Probe* Mission.

See PAGE, L., et al. The Optical Design and Characterization of the *Microwave Anisotropy Probe*.

See JAROSIK, N., et al. Design, Implementation, and Testing of the *Microwave Anisotropy Probe* Radiometers.

See BENNETT, C. L., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Preliminary Maps and Basic Results.

See JAROSIK, N., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: On-Orbit Radiometer Characterization.

See PAGE, L., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Beam Profiles and Window Functions.

See BARNES, C., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Galactic Signal Contamination from Sidelobe Pickup.

See HINSHAW, G., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Data Processing Methods and Systematic Errors Limits.

See BENNETT, C. L., et al. First-Year *Wilkinson Microwave Anisotrophy Probe* (*WMAP*) Observations: Foreground Emission.

See KOMATSU, E., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Tests of Gaussianity.

See HINSHAW, G., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: The Angular Power Spectrum.

See KOGUT, A., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Temperature-Polarization Correlation.

See SPERGEL, D. N., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Determination of Cosmological Parameters.

See VERDE, L., et al. First-Year *Wilkinson Microwave Anisotrophy Probe* (*WMAP*) Observations: Parameter Estimation Methodology.

See PEIRIS, H. V., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Implications for Inflation.

See PAGE, L., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Interpretation of the TT and TE Angular Power Spectrum Peaks.

TÜRLER, MARC. Dynamics of the Lyα and C IV Emitting Gas in 3C 273. *Stéphane Paltani & Marc Türler.* 583, 659 (2003)

TUFFS, R. J. Physical Conditions and Star Formation Activity in the Intragroup Medium of Stephan's Quintet. *C. K. Xu, N. Lu, J. J. Condon, M. Dopita, & R. J. Tuffs.* 595, 665 (2003)

TUFTE, S. L. The Wisconsin Hα Mapper Northern Sky Survey. *L. M. Haffner, R. J. Reynolds, S. L. Tufte, G. J. Madsen, K. P. Jaehnig, & J. W. Percival.* 149, 405 (2003)

TUMER, O. T. See ATKINS, R., et al. Observation of TeV Gamma Rays from the Crab Nebula with Milagro Using a New Background Rejection Technique.

TUMER, T. See ATKINS, R., et al. The High-Energy Gamma-Ray Fluence and Energy Spectrum of GRB 970417A from Observations with Milagrito.

See FALCONE, A., et al. Observation of GeV Solar Energetic Particles from the 1997 November 6 Event Using Milagrito.

TUMLINSON, JASON. Inferring Physical Conditions in Interstellar Clouds of H_2. *Matthew K. Browning, Jason Tumlinson, & J. Michael Shull.* 582, 810 (2003)

Cosmological Effects of the First Stars: Evolving Spectra of Population III. *Jason Tumlinson, J. Michael Shull, & Aparna Venkatesan.* 584, 608 (2003)

Evolving Spectra of Population III Stars: Consequences for Cosmological Reionization. *Aparna Venkatesan, Jason Tumlinson, & J. Michael Shull.* 584, 621 (2003)

The Multiphase Intergalactic Medium toward PKS 2155−304. *J. Michael Shull, Jason Tumlinson, & Mark L. Giroux.* 594, L107 (2003)

TUMMINELLO, A. See COLAVITA, M., et al. Observations of DG Tauri with the Keck Interferometer.

TURATTO, M. Determination of Primordial Metallicity and Mixing in the Type II-P Supernova 1993W. *E. Baron, Peter E. Nugent, David Branch, Peter H. Hauschildt, M. Turatto, & E. Cappellaro.* 586, 1199 (2003)

See VALENTINI, G., et al. Optical and Near-Infrared Photometry of the Type Ia Supernova 2000E in NGC 6951.

TURATTO, MASSIMO. The Lack of Observational Evidence for the Quantum Structure of Spacetime at Planck Scales. *Roberto Ragazzoni, Massimo Turatto, & Wolfgang Gaessler.* 587, L1 (2003)

TURCK-CHIÈZE, S. The Rotation of the Deep Solar Layers. *S. Couvidat, R. A. García, S. Turck-Chièze, T. Corbard, C. J. Henney, & S. Jiménez-Reyes.* 597, L77 (2003)

Solar Seismic Models and the Neutrino Predictions. *S. Couvidat, S. Turck-Chièze, & A. G. Kosovichev.* 599, 1434 (2003)

TURNBULL, MARGARET C. Target Selection for SETI. I. A Catalog of Nearby Habitable Stellar Systems. *Margaret C. Turnbull & Jill C. Tarter.* 145, 179 (2003)

Target Selection for SETI. II. Tycho-2 Dwarfs, Old Open Clusters, and the Nearest 100 Stars. *Margaret C. Turnbull & Jill C. Tarter.* 149, 423 (2003)

TURNER, A. D. See CRILL, B. P., et al. BOOMERANG: A Balloon-Borne Millimeter-Wave Telescope and Total Power Receiver for Mapping Anisotropy in the Cosmic Microwave Background.

See RUNYAN, M. C., et al. ACBAR: The Arcminute Cosmology Bolometer Array Receiver.

TURNER, EDWIN. See SZKODY, PAULA, et al. Two Rare Magnetic Cataclysmic Variables with Extreme Cyclotron Features Identified in the Sloan Digital Sky Survey.

TURNER, EDWIN L. Gravitational Lensing Magnification and Time Delay Statistics for Distant Supernovae. *Masamune Oguri, Yasushi Suto, & Edwin L. Turner.* 583, 584 (2003)

Predictions for the Counts of Faint, High-Redshift Galaxies in the Mid-Infrared. *Zoltán Haiman, David N. Spergel, & Edwin L. Turner.* 585, 630 (2003)

Rapid Brightness Fluctuations in Q0957+561A,B: Microlensing or Seeing? *Wesley N. Colley, Irwin I. Shapiro, Jennifer Pegg, Edwin L. Turner, Tomislav Kundić, Karen Loomis, N. C. Hastings, & Russet McMillan.* 588, 711 (2003)

A New Method to Map Flares in Quasars. *Atsunori Yonehara, Shin Mineshige, Yoh Takei, George Chartas, & Edwin L. Turner.* 594, 107 (2003)

TURNER, N. J. Local Three-dimensional Simulations of Magnetorotational Instability in Radiation-dominated Accretion Disks. *N. J. Turner, J. M. Stone, J. H. Krolik, & T. Sano.* 593, 992 (2003)

TURNER, T. J. The Kinematics and Physical Conditions of the Ionized Gas in Markarian 509. II. STIS Echelle Observations. *S. B. Kraemer, D. M. Crenshaw, T. Yaqoob, B. McKernan, J. R. Gabel, I. M. George, T. J. Turner, & J. P. Dunn.* 582, 125 (2003)

SHEEP: The Search for the High-Energy Extragalactic Population. *K. Nandra, I. Georgantopoulos, A. Ptak, & T. J. Turner.* 582, 615 (2003)

See GABEL, JACK R., et al. The Ionized Gas and Nuclear Environment in NGC 3783. II. Averaged *Hubble Space Telescope*/STIS and *Far Ultraviolet Spectroscopic Explorer* Spectra.

The Kinematics and Physical Conditions of the Ionized Gas in NGC 4593 from *Chandra* High-Energy Grating Spectroscopy. *Barry McKernan, Tahir Yaqoob, Ian M. George, & T. J. Turner.* 593, 142 (2003)

See CRENSHAW, D. M., et al. Simultaneous Ultraviolet and X-Ray Spectroscopy of the Seyfert 1 Galaxy NGC 5548. I. Physical Conditions in the Ultraviolet Absorbers.

Elemental Abundances in NGC 3516. *T. J. Turner, S. B. Kraemer, R. F. Mushotzky, I. M. George, & J. R. Gabel.* 594, 128 (2003)

See GABEL, JACK R., et al. The Ionized Gas and Nuclear Environment in NGC 3783. III. Detection of a Decreasing Radial Velocity in an Intrinsic Ultraviolet Absorber.

XMM-Newton Observation of Fe Kα Emission from a Broad Absorption Line Quasar: Markarian 231. *T. J. Turner & S. B. Kraemer.* 598, 916 (2003)

See NETZER, HAGAI, et al. The Ionized Gas and Nuclear Environment in NGC 3783. IV. Variability and Modeling of the 900 Kilosecond *Chandra* Spectrum.

TURNER, T. JANE. The Kinematics and Physical Conditions of the Ionized Gas in Markarian 509. I. *Chandra* High Energy Grating Spectroscopy. *Tahir Yaqoob, Barry McKernan, Steven B. Kraemer, D. Michael Crenshaw, Jack R. Gabel, Ian M. George, & T. Jane Turner.* 582, 105 (2003)

Fe XXV and Fe XXVI Diagnostics of the Black Hole and Accretion Disk in Active Galaxies: *Chandra* Time-resolved Grating Spectroscopy of NGC 7314. *Tahir Yaqoob, Ian M. George, Timothy R. Kallman, Urmila Padmanabhan, Kimberly A. Weaver, & T. Jane Turner.* 596, 85 (2003)

A Warm/Hot Intergalactic Medium toward 3C 120? *Barry McKernan, Tahir Yaqoob, Richard Mushotzky, Ian M. George, & T. Jane Turner.* 598, L83 (2003)

TURNSHEK, DAVID A. *Chandra* ACIS-S Observations of Three Quasars with Low-Redshift Damped Lyα Absorption: Constraints on the Cosmic Neutral Gas-Phase Metallicity at Redshift $z \approx 0.4$. *David A. Turnshek, Sandhya M. Rao, Andrew F. Ptak, Richard E. Griffiths, & Eric M. Monier.* 590, 730 (2003)

Low-Redshift Damped Lyα Galaxies toward the Quasars B2 0827+243, PKS 0952+179, PKS 1127−145, and PKS 1629+120. *Sandhya M. Rao, Daniel B. Nestor, David A. Turnshek, Wendy M. Lane, Eric M. Monier, & Jacqueline Bergeron.* 595, 94 (2003)

Damped Lyα Gas Metallicities at Redshifts $z = 0.9$–2.0 from Sloan Digital Sky Survey Spectra. *Daniel B. Nestor, Sandhya M. Rao, David A. Turnshek, & Daniel Vanden Berk.* 595, L5 (2003)

TUROLLA, R. 1WGA J1216.9+3743: *Chandra* Finds an Extremely Steep Ultraluminous X-Ray Source. *I. Cagnoni, R. Turolla, A. Treaves, J.-S. Huang, D. W. Kim, M. Elvis, & A. Celotti.* 582, 654 (2003)

Radiative Acceleration and Transient, Radiation-induced Electric Fields. *L. Zampieri, R. Turolla, L. Foschini, & A. Treves.* 592, 368 (2003)

TYLENDA, ROMUALD. Main-Sequence Stellar Eruption Model for V838 Monocerotis. *Noam Soker & Romuald Tylenda.* 582, L105 (2003)

TYLKA, A. J. Modeling Shock-accelerated Solar Energetic Particles Coupled to Interplanetary Alfvén Waves. *C. K. Ng, D. V. Reames, & A. J. Tylka.* 591, 461 (2003)

TYLKA, ALLAN J. Low Coronal Signatures of Large Solar Energetic Particle Events. *Nariaki V. Nitta, Edward W. Cliver, & Allan J. Tylka.* 586, L103 (2003)

TYSON, J. A. Weak Lensing Discovery and Tomography of a Cluster at $z = 0.68$. *D. Wittman, V. E. Margoniner, J. A. Tyson, J. G. Cohen, A. C. Becker, & I. P. Dell'Antonio.* 597, 218 (2003)

TYTLER, DAVID. The Cosmological Baryon Density from the Deuterium-to-Hydrogen Ratio in QSO Absorption Systems: D/H toward Q1243+3047. *David Kirkman, David Tytler, Nao Suzuki, John M. O'Meara, & Dan Lubin.* 149, 1 (2003)

TZIOUMIS, A. K. See BIGNALL, H. E., et al. Rapid Variability and Annual Cycles in the Characteristic Timescale of the Scintillating Source PKS 1257−326.

See GREENHILL, L. J., et al. A Warped Accretion Disk and Wide-Angle Outflow in the Inner Parsec of the Circinus Galaxy.

TZIOUMIS, T. X-Ray Emission from the Jets of XTE J1550−564. *P. Kaaret, S. Corbel, J. A. Tomsick, R. Fender, J. M. Miller, J. A. Orosz, T. Tzioumis, & R. Wijnands.* 582, 945 (2003)

TZIOUMIS, TASSO. X-Ray Jet Emission from the Black Hole X-Ray Binary XTE J1550−564 with *Chandra* in 2000. *John A. Tomsick, Stéphane Corbel, Rob Fender, Jon M. Miller, Jerome A. Orosz, Tasso Tzioumis, Rudy Wijnands, & Philip Kaaret.* 582, 933 (2003)

See TOMSICK, JOHN A., et al. *Chandra* Detections of Two Quiescent Black Hole X-Ray Transients.

UBERTINI, P. See MEREGHETTI, S., et al. *Integral* and *XMM-Newton* Observations of the Weak Gamma-Ray Burst GRB 030227.

UCHIDA, KEVEN I. Near-Infrared, Adaptive Optics Observations of the T Tauri Multiple-Star System. *Elise Furlan, William J. Forrest, Dan M. Watson, Keven I. Uchida, Bernhard R. Brandl, Luke D. Keller, & Terry L. Herter.* 596, L87 (2003)

Near-Infrared, Adaptive Optics Observations of the T Tauri Multiple-Star System: Erratum (ApJ, 596, L87 [2003]). *Elise Furlan, William J. Forrest, Dan M. Watson, Keven I. Uchida, Bernhard R. Brandl, Luke D. Keller, & Terry L. Herter.* 599, L117 (2003) (Orig. paper in 596, L87 (2003))

UCHIDA, T. See ENOMOTO, R., et al. Search for TeV Gamma Rays from SN 1987A in 2001.

UDALSKI, A. See SCHECHTER, PAUL L., et al. Microlensing of Relativistic Knots in the Quasar HE 1104−1805 AB.

The Optical Gravitational Lensing Experiment: Is Interstellar Extinction toward the Galactic Center Anomalous? *A. Udalski.* 590, 284 (2003)

UDAYA SHANKAR, N. Renewed Activity in the Radio Galaxy PKS B1545−321: Twin Edge-brightened Beams within Diffuse Radio Lobes. *Lakshmi Saripalli, Ravi Subrahmanyan, & N. Udaya Shankar.* 590, 181 (2003)

UDO, S. See AMENOMORI, M., et al. Multi-TeV Gamma-Ray Flares from Markarian 421 in 2000 and 2001 Observed with the Tibet Air Shower Array.

UDOMPRASERT, P. S. See MASON, B. S., et al. The Anisotropy of the Microwave Background to $l = 3500$: Deep Field Observatons with the Cosmic Background Imager.

See PEARSON, T. J., et al. The Anisotropy of the Microwave Background to $l = 3500$: Mosaic Observations with the Cosmic Background Imager.

See SIEVERS, J. L., et al. Cosmological Parameters from Cosmic Background Imager Observations and Comparisons with BOOMERANG, DASI, and MAXIMA.

UEDA, YOSHIHIRO. Optical Identification of the *ASCA* Medium Sensitivity Survey in the Northern Sky: Nature of Hard X-Ray–Selected Luminous Active Galactic Nuclei. *Masayuki Akiyama, Yoshihiro Ueda, Kouji Ohta, Tadayuki Takahashi, & Toru Yamada.* 148, 275 (2003)

See OHTA, KOUJI, et al. Optical Identification of the *ASCA* Lynx Deep Survey: An Association of Quasi-Stellar Objects and a Supercluster at $z = 1.3$?

Cosmological Evolution of the Hard X-Ray Active Galactic Nucleus Luminosity Function and the Origin of the Hard X-Ray Background. *Yoshihiro Ueda, Masayuki Akiyama, Kouji Ohta, & Takamitsu Miyaji.* 598, 886 (2003)

UEMURA, M. See BÖTTCHER, M., et al. Coordinated Multiwavelength Observations of BL Lacertae in 2000.

UENISHI, TATSUHIRO. Evolution of Rotating Accreting White Dwarfs and the Diversity of Type Ia Supernovae. *Tatsuhiro Uenishi, Ken'ichi Nomoto, & Izumi Hachisu.* 595, 1094 (2003)

UENO, MASARU. *Chandra* Observations of a Nonthermal Supernova Remnant Candidate AX J1843.8−0352 and Its Surroundings. *Masaru Ueno, Aya Bamba, Katsuji Koyama, & Ken Ebisawa.* 588, 338 (2003)

Diffuse Hard X-Ray Sources Discovered with the *ASCA* Galactic Plane Survey. *Aya Bamba, Masaru Ueno, Katsuji Koyama, & Shigeo Yamauchi.* 589, 253 (2003)

Small-Scale Structure of the SN 1006 Shock with *Chandra* Observations. *Aya Bamba, Ryo Yamazaki, Masaru Ueno, & Katsuji Koyama.* 589, 827 (2003)

UETA, T. Mid-Infrared Imaging Polarimetry of NGC 7027. *C. A. Jurgenson, R. E. Stencel, D. S. Theil, D. I. Klebe, & T. Ueta.* 582, L35 (2003)

UETA, TOSHIYA. 2-DUST: A Dust Radiative Transfer Code for an Axisymmetric System. *Toshiya Ueta & Margaret Meixner.* 586, 1338 (2003)

The Dust Ring of Luminous Blue Variable Candidate HD 168625: Infrared Observations and Model Calculations. *Timothy B. O'Hara, Margaret Meixner, Angela K. Speck, Toshiya Ueta, & Matthew Bobrowsky.* 598, 1255 (2003)

UITENBROEK, H. The Accuracy of the Center-of-Gravity Method for Measuring Velocity and Magnetic Field Strength in the Solar Photosphere. *H. Uitenbroek.* 592, 1225 (2003)

ULLA, A. See MUKADEM, ANJUM S., et al. Constraining the Evolution of ZZ Ceti.

ULLAN, AURORA. See COLLEY, WESLEY N., et al. Around-the-Clock Observations of the Q9057+561A,B Gravitationally Lensed Quasar. II. Results for the Second Observing Season.

ULMSCHNEIDER, P. Kink and Longitudinal Oscillations in the Magnetic Network on the Sun: Nonlinear Effects and Mode Transformation. *S. S. Hasan, W. Kalkofen, A. A. van Ballegooijen, & P. Ulmschneider.* 585, 1138 (2003)

Time-dependent Ionization in Dynamic Solar and Stellar Atmospheres. I. Methods. *W. Rammacher & P. Ulmschneider.* 589, 988 (2003)

ULVESTAD, J. S. The Flaring H_2O Megamaser and Conpact Radio Source in Markarian 348. *A. B. Peck, C. Henkel, J. S. Ulvestad, A. Brunthaler, H. Falcke, M. Elitzur, K. M. Menten, & J. F. Gallimore.* 590, 149 (2003)

ULVESTAD, JAMES S. Detection of the "Active" Nucleus of M32. *Luis C. Ho, Yuichi Terashima, & James S. Ulvestad.* 589, 783 (2003)

Radio Emission Associated with Ultraluminous X-Ray Sources in the Galaxy Merger NGC 3256. *S. G. Neff, James S. Ulvestad, & S. D. Campion.* 599, 1043 (2003)

UMEDA, H. See KAWABATA, K. S., et al. On the Spectrum and Spectropolarimetry of Type Ic Hypernova SN 2003dh/GRB 030329.

UMEDA, HIDEYUKI. See YOSHII, YUZURU, et al. The Optical/Near-Infrared Light Curves of SN 2002ap for the First 140 Days after Discovery.

Dust in the Early Universe: Dust Formation in the Ejecta of Population III Supernovae. *Takaya Nozawa, Takashi Kozasa, Hideyuki Umeda, Keiichi Maeda, & Ken'ichi Nomoto.* 598, 785 (2003)

UMEDA, KAZUYOSHI. See FUJITA, SHINOBU S., et al. The Hα Luminosity Function and Star Formation Rate at $z \approx 0.24$ Based on Subaru Deep Imaging Data.

UMEMOTO, TOMOFUNI. Molecular Outflow Search in the ρ Ophiuchi A and B2 Regions. *Takeshi Kamazaki, Masao Saito, Naomi Hirano, Tomofuni Umemoto, & Ryohei Kawabe.* 584, 357 (2003)

UMEMURA, MASAYUKI. Protoquasars: Physical States and Observable Properties. *Nozomu Kawakatu, Masayuki Umemura, & Masao Mori.* 583, 85 (2003)

A Spectrophotometric Method to Determine the Inclination of Class I Objects. *Takeshi Nakazato, Taishi Nakamoto, & Masayuki Umemura.* 583, 322 (2003)

UMETSU, KEIICHI. The Topology of a Weak Lensing Field in the Neighborhood of MS 1054−03. *Jun'ichi Sato, Keiichi Umetsu, Toshifumi Futamase, & Toru Yamada.* 582, L67 (2003)

Observational Strategies of Cosmic Microwave Background Temperature and Polarization Interferometry Experiments. *Chan-Gyung Park, Kin-Wang Ng, Changbom Park, Guo-Chin Liu, & Keiichi Umetsu.* 589, 67 (2003)

UNWIN, S. See SWAIN, MARK, et al. Interferometer Observations of Subparsec-Scale Infrared Emission in the Nucleus of NGC 4151.

UNWIN, STEPHEN C. The Speed and Orientation of the Parsec-Scale Jet in 3C 279. *B. Glenn Piner, Stephen C. Unwin, Ann E. Wehrle, Alma C. Zook, C. Megan Urry, & Diane M. Gilmore.* 588, 716 (2003)

URAGUCHI, FUMIHIRO. See SATO, BUN'EI, et al. A Planetary Companion to the G-Type Giant Star HD 104985.

URATA, Y. See KAWABATA, K. S., et al. On the Spectrum and Spectropolarimetry of Type Ic Hypernova SN 2003dh/GRB 030329.

Multiband Optical Follow-up Observations of GRB 020813 at the Kiso and Bisei Observatories. *Y. Urata, S. Nishiura, T. Miyata, H. Mito, T. Kawabata, Y. Nakada, T. Aoki, T. Soyano, K. Tarusawa, A. Yoshida, T. Tamagawa, & K. Makishima.* 595, L21 (2003)

URBANEJA, MIGUEL ALEJANDRO. Quantitative Spectral Analysis of Early B-Type Supergiants in the Sculptor Galaxy NGC 300. *Miguel Alejandro Urbaneja, Aremio Herrero, Fabio Bresolin, Rolf-Peter Kudritzki, Wolfgang Gieren, & Joachim Puls.* 584, L73 (2003)

URRY, C. M. See GRANDI, P., et al. *BeppoSAX* Observations of Centaurus A: The Hard Continuum and the Iron-Line Feature.

URRY, C. MEGAN. The Independence of Active Galactic Nucleus Black Hole Mass and Radio Loudness: Erratum (ApJ, 581, L5 [2002]). *Jong-Hak Woo & C. Megan Urry.* 583, L47 (2003)

The Speed and Orientation of the Parsec-Scale Jet in 3C 279. *B. Glenn Piner, Stephen C. Unwin, Ann E. Wehrle, Alma C. Zook, C. Megan Urry, & Diane M. Gilmore.* 588, 716 (2003)

USHOMIRSKY, GREG. The Crustal Rigidity of a Neutron Star, and Implications for PSR 1828−11 and Other Precession Candidates. *Curt Cutler, Greg Ushomirsky, & Bennett Link.* 588, 975 (2003)

USTYUGOVA, G. V. Three-Dimensional Simulations of Disk Accretion to an Inclined Dipole. I. Magnetospheric Flows at Different Θ. *M. M. Romanova, G. V. Ustyugova, A. V. Koldoba, J. V. Wick, & R. V. E. Lovelace.* 595, 1009 (2003)

USUDA, TOMONORI. See PYO, TAE-SOO, et al. Adaptive Optics Spectroscopy of the [Fe II] Outflow from DG Tauri.

See GOTO, MIWA, et al. Carbon Isotope Ratio in $^{12}CO/^{13}CO$ toward Local Molecular Clouds with Near-Infrared High-Resolution Spectroscopy of Vibrational Transition Bands.

USUI, F. Discovery of Dust Trail of *STARDUST* Comet Sample Return Mission Target: 81P/Wild 2. *M. Ishiguro, S. M. Kwon, Y. Sarugaku, S. Hasegawa, F. Usui, S. Nishiura, Y. Nakada, & H. Yano.* 589, L101 (2003)

UTSUGI, T. See AMENOMORI, M., et al. Multi-TeV Gamma-Ray Flares from Markarian 421 in 2000 and 2001 Observed with the Tibet Air Shower Array.

UTTLEY, P. See MARKOWITZ, A., et al. X-Ray Fluctuation Power Spectral Densities of Seyfert 1 Galaxies.

UTTLEY, PHILIP. Correlated Long-Term Optical and X-Ray Variations in NGC 5548. *Philip Uttley, Rick Edelson, Ian M. McHardy, Bradley M. Peterson, & Alex Markowitz.* 584, L53 (2003)

Catching NGC 4051 in the Low State with *Chandra*. *Philip Uttley, Antonella Fruscione, Ian M. Hardy, & Georg Lamer.* 595, 656 (2003)

UYANIKER, B. Radio Polarization from the Galactic Plane in Cygnus. *B. Uyaniker, T. L. Landecker, A. D. Gray, & R. Kothes.* 585, 785 (2003)

UZDENSKY, DMITRI. Dynamics of Relativistic Reconnection. *Maxim Lyutikov & Dmitri Uzdensky.* 589, 893 (2003)

UZDENSKY, DMITRI A. Petschek-like Reconnection with Current-driven Anomalous Resistivity and Its Application to Solar Flares. *Dmitri A. Uzdensky.* 587, 450 (2003)

On the Axisymmetric Force-free Pulsar Magnetosphere. *Dmitri A. Uzdensky.* 598, 446 (2003)

UZZO, M. Elemental Abundances for the 1996 Streamer Belt. *M. Uzzo, Y.-K. Ko, J. C. Raymond, P. Wurz, & F. M. Ipavich.* 585, 1062 (2003)

Far-Ultraviolet Spectra of Fast Coronal Mass Ejections Associated with X-Class Flares. *J. C. Raymond, A. Ciaravella, D. Dobrzycka, L. Strachan, Y.-K. Ko, & M. Uzzo.* 597, 1106 (2003)

VACCA, W. D. Near-Infrared Spectra of Type Ia Supernovae. *G. H. Marion, P. Höflich, W. D. Vacca, & J. C. Wheeler.* 591, 316 (2003)

VACCA, WILLIAM D. FeH Absorption in the Near-Infared Spectra of Late M and L Dwarfs. *Michael Cushing, John T. Rayner, Sumner P. Davis, & William D. Vacca.* 582, 1066 (2003)

VADAWALE, S. V. Correlated Radio:X-Ray Emission in the Hard States of Galactic Microquasars. *M. Choudhury, A. R. Rao, S. V. Vadawale, & A. K. Jain.* 593, 452 (2003)

On the Origin of the Various Types of Radio Emission in GRS 1915+105. *S. V. Vadawale, A. R. Rao, S. Naik, J. S. Yadav, C. H. Ishwara-Chandra, A. Pramesh Rao, & G. G. Pooley.* 597, 1023 (2003)

VAGNETTI, FAUSTO. Spectral Slope Variability of BL Lacertae Objects in the Optical Band. *Fausto Vagnetti, Dario Trevese, & Roberto Nesci.* 590, 123 (2003)

VAILLANCOURT, JOHN E. Magnetic Fields in Cool Clouds within the Central 50 Parsecs of the Galaxy. *David T. Chuss, Jacqueline A. Davidson, Jessie L. Dotson, C. Darren Dowell, Roger H. Hildebrand, Giles Novak, & John E. Vaillancourt.* 599, 1116 (2003)

VAINIO, R. The Influence of Electron Impact Ionization in the Relativistic Pickup of Interstellar Neutrals. *R. Schlickeiser, M. Pohl, & R. Vainio.* 596, 840 (2003)

VALDES, J. R. The Leo I Cloud: Secular Nuclear Evolution of NGC 3379, NGC 3384, and NGC 3368? *O. K. Sil'chenko, A. V. Moiseev, V. L. Afanasiev, V. H. Chavushyan, & J. R. Valdes.* 591, 185 (2003)

VALE, CHRIS. Simulating Weak Lensing by Large-Scale Structure. *Chris Vale & Martin White.* 592, 699 (2003)

VALENCIC, LYNNE A. Small Magellanic Cloud–Type Interstellar Dust in the Milky Way. *Lynne A. Valencic, Geoffrey C. Clayton, Karl Gordon, & Tracy L. Smith.* 598, 369 (2003)

VALENTI, JEFF A. An *IUE* Atlas of Pre–Main-Sequence Stars. III. Co-Added Final Archive Spectra from the Long-Wavelength Cameras. *Jeff A. Valenti, Adam A. Fallon, & Christopher M. Johns-Krull.* 147, 305 (2003)

See HAWLEY, SUZANNE L., et al. Multiwavelength Observations of Flares on AD Leonis.

See SMITH, VERNE V., et al. High-Resolution Infrared Spectroscopy of the Brown Dwarf ε Indi Ba.

VALENTINI, G. Optical and Near-Infrared Photometry of the Type Ia Supernova 2000E in NGC 6951. *G. Valentini, E. Di Carlo, F. Massi, M. Dolci, A. A. Arkharov, V. M. Larionov, A. Pastorello, A. Di Paola, S. Benetti, E. Cappellaro, M. Turatto, F. Pedichini, F. D'Alessio, A. Caratti o Garatti, G. Li Causi, R. Speziali, I. J. Danziger, & A. Tornambé.* 595, 779 (2003)

VALLE, J. W. F. Large Mixing Angle Oscillations as a Probe of the Deep Solar Interior. *C. Burgess, N. S. Dzhalilov, M. Maltoni, T. I. Rashba, V. B. Semikoz, M. A. Tórtola, & J. W. F. Valle.* 588, L65 (2003)

VALLÉE, JACQUES P. Magnetic Structure of a Dark Bok Globule. *Jacques P. Vallée, Jane S. Greaves, & Jason D. Fiege.* 588, 910 (2003)

VALLS-GABAUD, D. See KERINS, E., et al. Theory of Pixel Lensing toward M31. II. The Velocity Anisotropy and Flattening of the MACHO Distribution.

VALTAOJA, E. Testing of Inverse Compton Models for Active Galactic Nuclei with Gamma-Ray and Radio Observations. *A. Lähteenmäki & E. Valtaoja.* 590, 95 (2003)

VAN BALLEGOOIJEN, A. Physical Parameters of the 2000 February 11 Coronal Mass Ejection: Ultraviolet Spectra versus White-Light Images. *A. Ciaravella, J. C. Raymond, A. van Ballegooijen, L. Strachan, A. Vourlidas, J. Li, J. Chen, & A. Panasyuk.* 597, 1118 (2003)

VAN BALLEGOOIJEN, A. A. Kink and Longitudinal Oscillations in the Magnetic Network on the Sun: Nonlinear Effects and Mode Transformation. *S. S. Hasan, W. Kalkofen, A. A. van Ballegooijen, & P. Ulmschneider.* 585, 1138 (2003)

Motions of Isolated *G*-Band Bright Points in the Solar Photosphere. *P. Nisenson, A. A. van Ballegooijen, A. G. de Wijn, & P. Suetterlin.* 587, 458 (2003)

Alfvénic Turbulence in the Extended Solar Corona: Kinetic Effects and Proton Heating. *S. R. Cranmer & A. A. van Ballegooijen.* 594, 573 (2003)

VAN BALLEGOOIJEN, ADRIAN A. The Effect of Proton Temperature Anisotropy on the Solar Minimum Corona and Wind. *Alberto M. Vásquez, Adrian A. van Ballegooijen, & John C. Raymond.* 598, 1361 (2003)

VAN BELLE, G. See COLAVITA, M., et al. Observations of DG Tauri with the Keck Interferometer.

See SWAIN, MARK, et al. Interferometer Observations of Subparsec-Scale Infrared Emission in the Nucleus of NGC 4151.

VAN BOEKEL, R. Explaining UX Orionis Star Variability with Self-shadowed Disks. *C. P. Dullemond, M. E. van den Ancker, B. Acke, & R. van Boekel.* 594, L47 (2003)

VAN BREUGEL, WIL. An Obscured Radio Galaxy at High Redshift. *Michiel Reuland, Wil van Breugel, Huub Röttgering, Wim de Vries, Carlos De Breuk, & Daniel Stern.* 582, L71 (2003)

See REULAND, MICHIEL, et al. Giant Lyα Nebulae Associated with High-Redshift Radio Galaxies.

Extended X-Ray Emission around 4C 41.17 at $z = 3.8$. *Caleb Scharf, Ian Smail, Rob Ivison, Richard Bower, Wil van Breugel, & Michiel Reuland.* 596, 105 (2003)

VANDALFSEN, M. L. X-Ray Point Sources in the Sombrero Galaxy: Supersoft Sources, the Globular Cluster/Low-Mass X-Ray Binary Connection, and an Overview. *R. DiStefano, A. K. H. Kong, M. L. VanDalfsen, W. E. Harris, S. S. Murray, & K. M. Delain.* 599, 1067 (2003)

VAN DAM, H. Probing Planck-Scale Physics with Extragalactic Sources? *Y. Jack Ng, W. A. Christiansen, & H. van Dam.* 591, L87 (2003)

VANDEHEI, T. See ALCOCK, C., et al. The MACHO Project Large Magellanic Cloud Variable Star Inventory. XI. Frequency Analysis of the Fundamental Mode RR Lyrae Stars.

VAN DEN ANCKER, M. E. Explaining UX Orionis Star Variability with Self-shadowed Disks. *C. P. Dullemond, M. E. van den Ancker, B. Acke, & R. van Boekel.* 594, L47 (2003)

VANDENBERG, DON A. Evidence of a Significant Intermediate-Age Population in the M31 Halo from Main-Sequence Photometry. *Thomas M. Brown, Henry C. Ferguson, Ed Smith, Randy A. Kimble, Allen V. Sweigart, Alvio Renzini, R. Michael Rich, & Don A. VandenBerg.* 592, L17 (2003)

Canonical Extra Mixing in Low-Mass Red Giants. *Pavel A. Denissenkov & Don A. VandenBerg.* 593, 509 (2003)

Thermal Stability of Rotating Low-Mass Subgiants and Red Giants. *Pavel A. Denissenkov & Don A. VandenBerg.* 598, 1246 (2003)

VAN DEN BERGH, SIDNEY. A New Approach to Galaxy Morphology. I. Analysis of the Sloan Digital Sky Survey Early Data Release. *Roberto G. Abraham, Sidney van den Bergh, & Preethi Nair.* 588, 218 (2003)

Some Global Characteristics of the Galactic Globular Cluster System. *Sidney van den Bergh.* 590, 797 (2003)

VANDEN BERK, DAN. See SCHMIDT, GARY D., et al. Magnetic White Dwarfs from the Sloan Digital Sky Survey: The First Data Release.

VANDEN BERK, DANIEL. Damped Lyα Gas Metallicities at Redshifts $z = 0.9$–2.0 from Sloan Digital Sky Survey Spectra. *Daniel B. Nestor, Sandhya M. Rao, David A. Turnshek, & Daniel Vanden Berk.* 595, L5 (2003)

VAN DEN BOSCH, FRANK C. The Central Mass Distribution in Dwarf and Low Surface Brightness Galaxies. *R. A. Swaters, B. F. Madore, Frank C. van den Bosch, & M. Balcells.* 583, 732 (2003)

VAN DEN HEUVEL, E. See GREINER, J., et al. GRB 011121: A Collimated Outflow into Wind-blown Surroundings.

VAN DEN HEUVEL, E. P. J. See HJORTH, J., et al. Very High Column Density and Small Reddening toward GRB 020124 at $z = 3.20$.

VANDERBEI, ROBERT J. Extrasolar Planet Finding via Optimal Apodized-Pupil and Shaped-Pupil Coronagraphs. *N. Jeremy Kasdin, Robert J. Vanderbei, David N. Spergel, & Michael G. Littman.* 582, 1147 (2003)

Spiderweb Masks for High-Contrast Imaging. *Robert J. Vanderbei, David N. Spergel, & N. Jeremy Kasdin.* 590, 593 (2003)

Circularly Symmetric Apodization via Star-Shaped Masks. *Robert J. Vanderbei, David N. Spergel, & N. Jeremy Kasdin.* 599, 686 (2003)

Two-Mirror Apodization for High-Contrast Imaging. *Wesley A. Traub & Robert J. Vanderbei.* 599, 695 (2003)

VAN DER HUCHT, KAREL A. A Westerbork Synthesis Radio Telescope 1400 and 350 MHz Continuum Survey of the Cygnus OB2 Association, in Search of Hot Massive Stars. *Diah Y. A. Setia Gunawan, A. Ger de Bruyn, Karel A. van der Hucht, & Peredur M. Williams.* 149, 123 (2003)

VAN DER HULST, J. M. *Infrared Space Observatory* Long-Wavelength Spectrometer Spectroscopy of Star-forming Regions in M33. *S. J. U. Higdon, J. L. Higdon, J. M. van der Hulst, & G. J. Stacey.* 592, 161 (2003)

Fast Outflow of Neutral Hydrogen in the Radio Galaxy 3C 293. *R. Morganti, T. A. Oosterloo, B. H. C. Emonts, J. M. van der Hulst, & C. N. Tadhunter.* 593, L69 (2003)

VAN DER KLIS, M. See MILLER, J. M., et al. *XMM-Newton* Spectroscopy of the Accretion-driven Millisecond X-Ray Pulsar XTE J1751−305 in Outburst.

Coupling between Periodic and Aperiodic Variability in SAX J1808.4−3658. *M. T. Menna, L. Burderi, L. Stella, N. Robba, & M. van der Klis.* 589, 503 (2003)

See KOUVELIOTOU, C., et al. Unraveling the Cooling Trend of the Soft Gamma Repeater SGR 1627−41.

VAN DER KLIS, MICHIEL. High-Frequency Quasi-Periodic Oscillations in the Black Holes X-Ray Transient XTE J1650−500. *Jeroen Homan, Marc Klein-Wolt, Sabrina Rossi, Jon M. Miller, Rudy Wijnands, Tomaso Belloni, Michiel van der Klis, & Walter H. G. Lewin.* 586, 1262 (2003)

See PATEL, SANDEEP K., et al. *Chandra* Observations of the Anomalous X-Ray Pulsar 4U 0142+61.

Hard X-Ray Flares Preceding Soft X-Ray Outbursts in Aquila X-1: A Link between Neutron Star and Black Hole Transitions. *Wenfei Yu, Marc Klein-Wolt, Rob Fender, & Michiel van der Klis.* 589, L33 (2003)

See POOLEY, DAVID, et al. Dynamical Formation of Close Binary Systems in Globular Clusters.

The Atoll Source States of 4U 1608−52. *Steve van Straaten, Michiel van der Klis, & Mariano Méndez.* 596, 1155 (2003)

Chandra Observations of the Faintest Low-Mass X-Ray Binaries. *Colleen A. Wilson, Sandeep K. Patel, Chryssa Kouveliotou, Peter G. Jonker, Michiel van der Klis, Walter H. G. Lewin, Tomaso Belloni, & Mariano Méndez.* 596, 1220 (2003)

VAN DER MAREL, R. P. See MARCONI, A., et al. Is There Really a Black Hole at the Center of NGC 4041? Constraints from Gas Kinematics.

VAN DER MAREL, ROELAND P. Space Telescope Imaging Spectrograph Spectroscopy of the Emission-Line Gas in the Nuclei of Nearby FR-I Galaxies. *Jacob Noel-Storr, Stefi A. Baum, Gijs Verdoes Kleijn, Roeland P. van der Marel, Christoper P. O'Dea, Tim de Zeeuw, & C. Marcella Carollo.* 148, 419 (2003)

VANDERSPEK, R. See CREW, G. B., et al. *HETE-2* Localization and Observation of the Bright, X-Ray–rich Gamma-Ray Burst GRB 021211.

VANDERSPEK, ROLAND K. The X-Ray Afterglows of GRB 020813 and GRB 021004 with *Chandra* HETGS: Possible Evidence for a Supernova prior to GRB 020813. *Nathanial R. Butler, Herman L. Marshall, George R. Ricker, Roland K. Vanderspek, Peter G. Ford, Geoffrey B. Crew, Donald Q. Lamb, & J. Garrett Jernigan.* 597, 1010 (2003)

VAN DER WEL, ARJEN. See VAN DOKKUM, PIETER G., et al. Spectroscopic Confirmation of a Substantial Population of Luminous Red Galaxies at Redshifts $z \gtrsim 2$.

See LABBÉ, IVO, et al. Large Disklike Galaxies at High Redshift.

VAN DER WERF, P. P. See DADDI, E., et al. Detection of Strong Clustering of Red K-selected Galaxies at $2 < z_{\rm phot} < 4$ in the Hubble Deep Field–South.

VAN DER WERF, PAUL. See FRANX, MARIJN, et al. A Significant Population of Red, Near-Infrared–selected High-Redshift Galaxies.

See VAN DOKKUM, PIETER G., et al. Spectroscopic Confirmation of a Substantial Population of Luminous Red Galaxies at Redshifts $z \gtrsim 2$.

See LABBÉ, IVO, et al. Large Disklike Galaxies at High Redshift.

See RUDNICK, GREGORY, et al. The Rest-Frame Optical Luminosity Density, Color, and Stellar Mass Density of the Universe from $z = 0$ to $z = 3$.

VAN DE WEL, ARJEN. See FRANX, MARIJN, et al. A Significant Population of Red, Near-Infrared–selected High-Redshift Galaxies.

See RUDNICK, GREGORY, et al. The Rest-Frame Optical Luminosity Density, Color, and Stellar Mass Density of the Universe from $z = 0$ to $z = 3$.

VAN DISHOECK, E. F. Disks around the Young Stars with TW Hydrae and HD 100546 Imaged at 3.4 Millimeters with the Australia Telescope Compact Array. *D. J. Wilner, T. L. Bourke, C. M. Wright, J. K. Jørgensen, E. F. van Dishoeck, & T. Wong.* 596, 597 (2003)

VAN DISHOECK, EWINE F. Further Evidence for Chemical Fractionation from Ultraviolet Observations of Carbon Monoxide. *S. R. Federman, David L. Lambert, Yaron Sheffer, Jason A. Cardelli, B.-G. Andersson, Ewine F. van Dishoeck, & J. Zsargó.* 591, 986 (2003)

VAN DOKKUM, P. G. See DADDI, E., et al. Detection of Strong Clustering of Red K-selected Galaxies at $2 < z_{\rm phot} < 4$ in the Hubble Deep Field–South.

The First Two Host Galaxies of X-Ray Flashes: XRF 011030 and XRF 020427. *J. S. Bloom, D. Fox, P. G. van Dokkum, S. R. Kulkarni, E. Berger, S. G. Djorgovski, & D. A. Frail.* 599, 957 (2003)

VAN DOKKUM, PIETER. On the Assembly History of Early-Type Galaxies in the Hubble Deep Field–North. *Pieter van Dokkum & Richard S. Ellis.* 592, L53 (2003)

The Nature of E+A Galaxies in Intermediate Redshift Clusters. *Kim-Vy H. Tran, Marijn Franx, Garth Illingworth, Daniel D. Kelson, & Pieter van Dokkum.* 599, 865 (2003)

VAN DOKKUM, PIETER G. The Fundamental Plane at $z = 1.27$: First Calibration of the Mass Scale of Red Galaxies at Redshifts $z > 1$. *Pieter G. van Dokkum & S. A. Stanford.* 585, 78 (2003)

See FRANX, MARIJN, et al. A Significant Population of Red, Near-Infrared–selected High-Redshift Galaxies.

Spectroscopic Confirmation of a Substantial Population of Luminous Red Galaxies at Redshifts $z \gtrsim 2$. *Pieter G. van Dokkum, Natascha M. Förster Schreiber, Marijn Franx, Emanuele Daddi, Garth D. Illingworth, Ivo Labbé, Alan Moorwood, Hans-Walter Rix, Huub Röttgering, Gregory Rudnick, Arjen van der Wel, Paul van der Werf, & Lottie van Starkenburg.* 587, L83 (2003)

See LABBÉ, IVO, et al. Large Disklike Galaxies at High Redshift.

See RUDNICK, GREGORY, et al. The Rest-Frame Optical Luminosity Density, Color, and Stellar Mass Density of the Universe from $z = 0$ to $z = 3$.

A Unique Small-Scale Gravitational Arc in A1201. *Alastair C. Edge, Graham P. Smith, David J. Sand, Tommaso Treu, Harald Ebeling, Steven W. Allen, & Pieter G. van Dokkum.* 599, L69 (2003)

VAN DOORSSELAERE, TOM. Observational Tests of Damping by Resonant Absorption in Coronal Loop Oscillations. *Markus J. Aschwanden, Richard W. Nightingale, Jesse Andries, Marcel Goossens, & Tom Van Doorsselaere.* 598, 1375 (2003)

VAN DRIEL, W. Polar Ring Galaxies and the Tully-Fisher Relation: Implications for the Dark Halo Shape. *E. Iodice, M. Arnaboldi, F. Bournaud, F. Combes, L. S. Sparke, W. van Driel, & M. Capaccioli.* 585, 730 (2003)

VAN DRIEL-GESZTELYI, L. The Long-Term Evolution of AR 7978: The Scalings of the Coronal Plasma Parameters with the Mean Photospheric Magnetic Field. *L. van Driel-Gesztelyi, P. Démoulin, C. H. Mandrini, L. Harra, & J. A. Klimchuk.* 586, 579 (2003)

The Long-Term Evolution of AR 7978: Testing Coronal Heating Models. *P. Démoulin, L. van Driel-Gesztelyi, C. H. Mandrini, J. A. Klimchuk, & L. Harra.* 586, 592 (2003)

VAN DRIEL-GESZTELYI, LIDIA. Evidence of Flaring in a Transequatorial Loop on the Sun. *Louise K. Harra, Sarah A. Matthews, & Lidia van Driel-Gesztelyi.* 598, L59 (2003)

VAN DYK, SCHUYLER D. Radio Emission from SN 2001gd in NGC 5033. *Christopher J. Stockdale, Kurt W. Weiler, Schuyler D. Van Dyk, Marcos J. Montes, Nino Panagia, Richard A. Sramek, M. A. Perez-Torres, & J. M. Marcaide.* 592, 900 (2003)

VANGIONI-FLAM, ELISABETH. On the Baryometric Status of ^{3}He. *Elisabeth Vangioni-Flam, Keith A. Olive, Brian D. Fields, & Michel Cassé.* 585, 611 (2003)

VAN HOOF, PETER A. M. Introducing EMILI: Computer-Aided Emission Line Identification. *Brian Sharpee, Robert Williams, Jack A. Baldwin, & Peter A. M. van Hoof.* 149, 155 (2003)

VAN HORN, HUGH M. Fuel-Supply–limited Stellar Relaxation Oscillations: Application to Multiple Rings around Asymptotic Giant Branch Stars and Planetary Nebulae. *Hugh M. Van Horn, John H. Thomas, Adam Frank, & Eric G. Blackman.* 585, 983 (2003)

VAN KERKWIJK, M. H. The Optical Counterpart of the Isolated Neutron Star RX J1605.3+3249. *D. L. Kaplan, S. R. Kulkarni, & M. H. van Kerkwijk.* 588, L33 (2003)

High-Resolution Spectroscopy of the Pulsating White Dwarf G29-38. *Susan E. Thompson, J. C. Clemens, M. H. van Kerkwijk, & D. Koester.* 589, 921 (2003)

The Nearby Neutron Star RX J0720.4−3125 from Radio to X-Rays. *D. L. Kaplan, M. H. van Kerkwijk, H. L. Marshall, B. A. Jacoby, S. R. Kulkarni, & D. A. Frail.* 590, 1008 (2003)

PSR J1909−3744: A Binary Millisecond Pulsar with a Very Small Duty Cycle. *B. A. Jacoby, M. Bailes, M. H. van Kerkwijk, S. Ord, A. Hotan, S. R. Kulkarni, & S. B. Anderson.* 599, L99 (2003)

VAN PUTTEN, MAURICE H. P. M. Gravitational Wave Frequencies and Energies in Hypernovae. *Maurice H. P. M. van Putten.* 583, 374 (2003)

Theory and Astrophysical Consequences of a Magnetized Torus around a Rapidly Rotating Black Hole. *Maurice H. P. M. van Putten & Amir Levinson.* 584, 937 (2003)

Observational Evidence for a Correlation between Peak Luminosities and Beaming in Gamma-Ray Bursts. *Maurice H. P. M. van Putten & Tania Regimbau.* 593, L15 (2003)

VanSpeybroeck, L. See Vikhlinin, A., et al. Cosmological Constraints from the Evolution of the Cluster Baryon Mass Function at $z \sim 0.5$.

van Starkenburg, Lottie. See Franx, Marijn, et al. A Significant Population of Red, Near-Infrared–selected High-Redshift Galaxies.

See van Dokkum, Pieter G., et al. Spectroscopic Confirmation of a Substantial Population of Luminous Red Galaxies at Redshifts $z \gtrsim 2$.

See Labbé, Ivo, et al. Large Disklike Galaxies at High Redshift.

See Rudnick, Gregory, et al. The Rest-Frame Optical Luminosity Density, Color, and Stellar Mass Density of the Universe from $z = 0$ to $z = 3$.

van Straaten, Steve. The Atoll Source States of 4U 1608−52. *Steve van Straaten, Michiel van der Klis, & Mariano Méndez.* 596, 1155 (2003)

Vanture, Andrew D. Abundances of Post–Iron-Peak Elements in HD 35155: A Symbiotic Star of Spectral Type S. *Andrew D. Vanture, George Wallerstein, Roberto Gallino, & Stefano Masera.* 587, 384 (2003)

van Vliet, Timothy P. See Gnedin, Nickolay Y., et al. Linear Gas Dynamics in the Expanding Universe.

van Waerbeke, Ludovic. Detection of Dark Matter Skewness in the VIRMOS-DESCART Survey: Implications for Ω_0. *Ue-Li Pen, Tongjie Zhang, Ludovic van Waerbeke, Yannick Mellier, Pengjie Zhang, & John Dubinski.* 592, 664 (2003)

van Zee, L. Star Formation and the Interstellar Medium in Four Dwarf Irregular Galaxies. *L. M. Young, L. van Zee, K. Y. Lo, R. C. Dohm-Palmer, & Michelle E. Beierle.* 592, 111 (2003)

Vanzella, Daniel A. T. Cosmological Acceleration through Transition to Constant Scalar Curvature. *Leonard Parker, William Komp, & Daniel A. T. Vanzella.* 588, 663 (2003)

Vanzella, E. See Poli, F., et al. The Evolution of the Galaxy Luminosity Function in the Rest-Frame Blue Band up to $z = 3.5$.

See Fontana, A., et al. The Assembly of Massive Galaxies from Near-Infrared Observations of the Hubble Deep Field–South.

Varadi, F. Successive Refinements in Long-Term Integrations of Planetary Orbits. *F. Varadi, B. Runnegar, & M. Ghil.* 592, 620 (2003)

Varadi, Ferenc. Stable 1:2 Resonant Periodic Orbits in Elliptic Three-Body Systems. *Nader Haghighipour, Jocelyn Couetdic, Ferenc Varadi, & William B. Moore.* 596, 1332 (2003)

Varela, J. Quasars Clustering at $z \approx 3$ on Scales $\lesssim 10\ h^{-1}$ Mpc. *L. Infante, J. Varela, M. Moles, G. Hertling, A. García, & F. Menanteau.* 588, 90 (2003)

Varricatt, Watson P. Remarkable Changes in the Near-Infrared Spectrum of the Nova-like Variable V4332 Sagittarii. *Dipankar P. K. Banerjee, Watson P. Varricatt, Nagarhalli M. Ashok, & Olli Launila.* 598, L31 (2003)

Vasisht, G. See Colavita, M., et al. Observations of DG Tauri with the Keck Interferometer.

See Swain, Mark, et al. Interferometer Observations of Subparsec-Scale Infrared Emission in the Nucleus of NGC 4151.

Vasisht, Gautam. The Pulsar Wind Nebula in G11.2−0.3. *Mallory S. E. Roberts, Cindy R. Tam, Victoria M. Kaspi, Maxim Lyutikov, Gautam Vasisht, Michael Pivovaroff, Eric V. Gotthelf, & Nobuyuki Kawai.* 588, 992 (2003)

Vásquez, Alberto M. The Effect of Proton Temperature Anisotropy on the Solar Minimum Corona and Wind. *Alberto M. Vásquez, Adrian A. van Ballegooijen, & John C. Raymond.* 598, 1361 (2003)

Vassiliev, V. V. See Holder, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.

See Hall, T. A., et al. Search for TeV Emissions from Pulsars in Binary Systems.

See de la Calle Pérez, I., et al. Search for High-Energy Gamma Rays from an X-Ray–Selected Blazar Sample.

Vastel, C. First Detection of Doubly Deuterated Hydrogen Sulfide. *C. Vastel, T. G. Phillips, C. Ceccarelli, & J. Pearson.* 593, L97 (2003)

Vasúth, Mátyás. Charged Black Holes: Wave Equations for Gravitational and Electromagnetic Perturbations. *Zoltán Perjés & Mátyás Vasúth.* 582, 342 (2003)

Vauclair, G. See Mukadem, Anjum S., et al. Constraining the Evolution of ZZ Ceti.

Vauclair, Sylvie. On the Coupling between Helium Settling and Rotation-induced Mixing in Stellar Radiative Zones. I. Analytical Approach. *Sylvie Vauclair & Sylvie Théado.* 587, 777 (2003)

On the Coupling between Helium Settling and Rotation-induced Mixing in Stellar Radiative Zones. II. Numerical Approach. *Sylvie Théado & Sylvie Vauclair.* 587, 784 (2003)

On the Coupling between Helium Settling and Rotation-induced Mixing in Stellar Radiative Zones. III. Applications to Light Elements in Population I Main-Sequence Stars. *Sylvie Théado & Sylvie Vauclair.* 587, 795 (2003)

Vaughan, S. See Markowitz, A., et al. X-Ray Fluctuation Power Spectral Densities of Seyfert 1 Galaxies.

Long-Term X-Ray Spectral Variability in Seyfert 1 Galaxies. *A. Markowitz, R. Edelson, & S. Vaughan.* 598, 935 (2003)

Vause, J. See Colavita, M., et al. Observations of DG Tauri with the Keck Interferometer.

Vazdekis, Alexandre. The Near-Infrared Ca II Triplet–σ Relation for Bulges of Spiral Galaxies. *Jesús Falcón-Barroso, Reynier F. Peletier, Alexandre Vazdekis, & Marc Balcells.* 588, L17 (2003)

Vazquez, Ruben. Optical Polarization Observations of NGC 6231: Evidence for a Past Supernova Fingerprint. *Carlos Feinstein, Ruben Martínez, M. Marcela Vergne, Gustavo Baume, & Ruben Vazquez.* 598, 349 (2003)

Vázquez, S. E. X-Ray Emission from the Hot Interstellar Medium and Southwest Radio Lobe of the Nearby Radio Galaxy Centaurus A. *R. P. Kraft, S. E. Vázquez, W. R. Forman, C. Jones, S. S. Murray, M. J. Hardcastle, D. M. Worrall, & E. Churazov.* 592, 129 (2003)

Vázquez-Semadeni, E. A Holistic Scenario of Turbulent Molecular Cloud Evolution and Control of the Star Formation Efficiency: First Tests. *E. Vázquez-Semadeni, J. Ballesteros-Paredes, & R. S. Klessen.* 585, L131 (2003)

Vázquez-Semadeni, Enrique. Dynamic Cores in Hydrostatic Disguise. *Javier Ballesteros-Paredes, Ralf S. Klessen, & Enrique Vázquez-Semadeni.* 592, 188 (2003)

Intrinsic, Observed, and Retrieved Properties of Interstellar Turbulence. *Christopher M. Brunt, Mark H. Heyer, Enrique Vázquez-Semadeni, & Bárbara Pichardo.* 595, 824 (2003)

Veilleux, S. Optical and Near-Infrared Imaging of the *IRAS* 1 Jy Sample of Ultraluminous Infrared Galaxies. I. The Atlas: Addendum (ApJS, 143, 277 [2002]). *D.-C. Kim, S. Veilleux, & D. B. Sanders.* 147, 221 (2003) (Orig. paper in 143, 277 (2002))

Optical and Near-Infrared Imaging of the *IRAS* 1 Jy Sample of Ultraluminous Infrared Galaxies. II. The Analysis: Addendum (ApJS, 143, 315 [2002]). *S. Veilleux, D.-C. Kim, & D. B. Sanders.* 147, 223 (2003) (Orig. paper in 143, 315 (2002))

Hα Emission from High-Velocity Clouds and Their Distances. *M. E. Putman, J. Bland-Hawthorn, S. Veilleux, B. K. Gibson, K. C. Freeman, & P. R. Maloney.* 597, 948 (2003)

Veilleux, Sylvain. See Taniguchi, Yoshiaki, et al. The Discovery of a Very Narrow Line Star-forming Object at a Redshift of 5.66.

Extraplanar Emission-Line Gas in Edge-on Spiral Galaxies. II. Optical Spectroscopy. *Scott T. Miller & Sylvain Veilleux.* 592, 79 (2003)

Extraplanar Emission-Line Gas in Edge-On Spiral Galaxies. I. Deep Emission-Line Imaging. *Scott T. Miller & Sylvain Veilleux.* 148, 383 (2003)

Velarde, A. See Watanabe, K., et al. Solar Neutron Event in Association with a Large Solar Flare on 2000 November 24.

Velázquez, Pablo F. A Supernova Remnant Collision with a Stellar Wind. *Pablo F. Velázquez, Gloria Koenigsberger, & Alejandro C. Raga.* 584, 284 (2003)

Velli, M. See Roussev, I. I., et al. A Three-dimensional Model of the Solar Wind Incorporating Solar Magnetogram Observations.

Velusamy, T. The High Angular Resolution Measurement of Ion and Neutral Spectra as a Probe of the Magnetic Field Structure in DR 21 (OH). *Shih-Ping Lai, T. Velusamy, & W. D. Langer.* 596, L239 (2003)

Venkatesan, Aparna. Cosmological Effects of the First Stars: Evolving Spectra of Population III. *Jason Tumlinson, J. Michael Shull, & Aparna Venkatesan.* 584, 608 (2003)

Evolving Spectra of Population III Stars: Consequences for Cosmological Reionization. *Aparna Venkatesan, Jason Tumlinson, & J. Michael Shull.* 584, 621 (2003)

Feedback from the First Supernovae in Protogalaxies: The Fate of the Generated Metals. *Keiichi Wada & Aparna Venkatesan.* 591, 38 (2003)

The Ionizing Efficiency of the First Stars. *Aparna Venkatesan & James W. Truran.* 594, L1 (2003)

VENNES, S. The Extreme-Ultraviolet Continuum of a Strong Stellar Flare. *D. J. Christian, M. Mathioudakis, D. Jevremović, J. Dupuis, S. Vennes, & A. Kawka.* 593, L105 (2003)

VENNES, STÉPHANE. Spectroscopic Identification of White Dwarfs in the New Luyten Two-Tenths Survey. *Stéphane Vennes & Adela Kawka.* 586, L95 (2003)

A Multiwavelength Study of the High-Field Magnetic White Dwarf EUVE J0317−85.5 (=RE J0317−853). *Stéphane Vennes, G. D. Schmidt, L. Ferrario, D. J. Christian, D. T. Wickramasinghe, & A. Kawka.* 593, 1040 (2003)

Far Ultraviolet Spectroscopic Explorer Observation of the Ultramassive White Dwarf PG 1658+441. *Jean Dupuis, Pierre Chayer, Stéphane Vennes, Nicole F. Allard, & Guillaume Hébrard.* 598, 486 (2003)

VENNIK, J. Analysis of the Interaction Effects in the Southern Galaxy Pair Tol 1238−364 and ESO 381-G009. *S. Temporin, S. Ciroi, P. Rafanelli, M. Radovich, J. Vennik, G. M. Richter, & K. Birkle.* 148, 353 (2003)

VENTURI, T. The Nuclear Accretion in the FR I Radio Galaxy IC 4296 from *Chandra* and Very Long Baseline Array Observations. *S. Pellegrini, T. Venturi, A. Comastri, G. Fabbiano, F. Fiore, C. Vignali, R. Morganti, & G. Trinchieri.* 585, 677 (2003)

VENTURINI, CATHERINE C. Near-Infrared Spectrophotometry and the CO Emission in V2274 Cygni (Nova Cygni 2001 No. 1). *Richard J. Rudy, William L. Dimpfl, David K. Lynch, S. Mazuk, Catherine C. Venturini, John C. Wilson, R. C. Puetter, & R. Brad Perry.* 596, 1229 (2003)

VENTURINI, S. The Molecular Disk in the Cloverleaf Quasar. *S. Venturini & P. M. Solomon.* 590, 740 (2003)

VERA-VILLAMIZAR, NELSON. Circumnulear Structures in the Interacting Seyfert Galaxy of NGC 1241: Kinematics and Optical/Infrared Morphology. *Rubén J. Díaz, Horacio Dottori, Nelson Vera-Villamizar, & Gustavo Carranza.* 597, 860 (2003)

VERBUNT, FRANK. See POOLEY, DAVID, et al. Dynamical Formation of Close Binary Systems in Globular Clusters.

VERDE, L. See BENNETT, C. L., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Preliminary Maps and Basic Results.

See KOMATSU, E., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Tests of Gaussianity.

See HINSHAW, G., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: The Angular Power Spectrum.

See SPERGEL, D. N., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Determination of Cosmological Parameters.

First-Year *Wilkinson Microwave Anisotrophy Probe* (*WMAP*) Observations: Parameter Estimation Methodology. *L. Verde, H. V. Peiris, D. N. Spergel, M. R. Nolta, C. L. Bennett, M. Halpern, G. Hinshaw, N. Jarosik, A. Kogut, M. Limon, S. S. Meyer, L. Page, G. S. Tucker, E. Wollack, & E. L. Wright.* 148, 195 (2003)

See PEIRIS, H. V., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Implications for Inflation.

VERDE, LICIA. Constraints on the Equation of State of Dark Energy and the Hubble Constant from Stellar Ages and the Cosmic Microwave Background. *Raul Jimenez, Licia Verde, Tommaso Treu, & Daniel Stern.* 593, 622 (2003)

VERDOES KLEIJN, GIJS. Space Telescope Imaging Spectrograph Spectroscopy of the Emission-Line Gas in the Nuclei of Nearby FR-I Galaxies. *Jacob Noel-Storr, Stefi A. Baum, Gijs Verdoes Kleijn, Roeland P. van der Marel, Christoper P. O'Dea, Tim de Zeeuw, & C. Marcella Carollo.* 148, 419 (2003)

VERDUGO, EVA. *Hubble Space Telescope* STIS Spectrum of RW Aurigae A: Evidence for an Ionized Beltlike Structure and Mass Ejection in Timescales of a Few Hours. *Ana I. Gomez de Castro & Eva Verdugo.* 597, 443 (2003)

VERDUGO, T. See STEPANIAN, J. A., et al. A Multiwavelength Study of Narrow-Line Seyfert 1 Galaxies from the Second Byurakan Survey.

VERGADOS, J. D. New Velocity Distribution for Cold Dark Matter in the Context of the Eddington Theory. *J. D. Vergados & D. Owen.* 589, 17 (2003)

VERGNE, M. MARCELA. Optical Polarization Observations of NGC 6231: Evidence for a Past Supernova Fingerprint. *Carlos Feinstein, Ruben Martinez, M. Marcela Vergne, Gustavo Baume, & Ruben Vazquez.* 598, 349 (2003)

VERHEIJEN, M. A. W. The Kinematics in the Core of the Low Surface Brightness Galaxy DDO 39. *R. A. Swaters, M. A. W. Verheijen, M. A. Bershady, & D. R. Andersen.* 587, L19 (2003)

VERKHODANOV, OLEG V. Non-Gaussianity of the Derived Maps from the First-Year *Wilkinson Microwave Anisotropy Probe* Data. *Lung-Yih Chiang, Pavel D. Naselsky, Oleg V. Verkhodanov, & Michael J. Way.* 590, L65 (2003)

Phase Cross-Correlation of the *Wilkinson Microwave Anisotropy Probe* Internal Linear Combination Map and Foregrounds. *Pavel D. Naselsky, Andrey G. Doroshkevich, & Oleg V. Verkhodanov.* 599, L53 (2003)

VERMAAK, P. See FIELDS, DALE L., et al. High-Precision Limb-Darkening Measurement of a K3 Giant Using Microlensing.

VERMEULEN, R. C. 4C +12.50: A Superluminal Precessing Jet in the Recent Merger System IRAS 13451+1232. *M. L. Lister, K. I. Kellermann, R. C. Vermeulen, M. H. Cohen, J. A. Zensus, & E. Ros.* 584, 135 (2003)

Jet Collimation in Action: Realignment on Kiloparsec Scales in 3C 279. *D. C. Homan, M. L. Lister, K. I. Kellermann, M. H. Cohen, E. Ros, J. A. Zensus, M. Kadler, & R. C. Vermeulen.* 589, L9 (2003)

VERNER, D. Revisited Abundance Diagnostics in Quasars: Fe II/Mg II Ratios. *E. Verner, F. Bruhweiler, D. Verner, S. Johansson, & T. Gull.* 592, L59 (2003)

VERNER, E. Revisited Abundance Diagnostics in Quasars: Fe II/Mg II Ratios. *E. Verner, F. Bruhweiler, D. Verner, S. Johansson, & T. Gull.* 592, L59 (2003)

VERSTUTO, JASON G. Spectral Properties of Compressible Magnetohydrodynamic Turbulence from Numerical Simulations. *Jason G. Verstuto, Eve C. Ostriker, & James M. Stone.* 590, 858 (2003)

VESPERINI, E. Effects of the Dissolution of Low-Concentration Globular Clusters on the Evolution of Globular Cluster Systems. *E. Vesperini & S. E. Zepf.* 587, L97 (2003)

Modeling the Dynamical Evolution of the M87 Globular Cluster System. *E. Vesperini, S. E. Zepf, A. Kundu, & K. M. Ashman.* 593, 760 (2003)

VESTERGAARD, M. Quasar Elemental Abundances at High Redshifts. *M. Dietrich, F. Hamann, J. C. Shields, A. Constantin, J. Heidt, K. Jäger, M. Vestergaard, & S. J. Wagner.* 589, 722 (2003)

Fe II/Mg II Emission-Line Ratio in High-Redshift Quasars. *M. Dietrich, F. Hamann, I. Appenzeller, & M. Vestergaard.* 596, 817 (2003)

Occurrence and Global Properties of Narrow C IV λ1549 Å Absorption Lines in Moderate-Redshift Quasars. *M. Vestergaard.* 599, 116 (2003)

VESTRAND, W. T. Detection of Pulsed X-Ray Emission from *XMM-Newton* Observations of PSR J0538+2817. *K. E. McGowan, J. A. Kennea, S. Zane, F. A. Córdova, M. Cropper, C. Ho, T. Sasseen, & W. T. Vestrand.* 591, 380 (2003)

See SMITH, D. A., et al. ROTSE-III Observations of the Early Afterglow from GRB 030329.

VESTRAND, W. THOMAS. The Gamma-Ray Blazar PKS 0208−512 from MeV to GeV Energies. *J. Gregory Stacy, W. Thomas Vestrand, & P. Sreekumar.* 598, 216 (2003)

VIDALI, G. Measurement of the Kinetic Energy of Hydrogen Molecules Desorbing from Amorphous Water Ice. *J. E. Roser, S. Swords, G. Vidali, G. Manicò, & V. Pirronello.* 596, L55 (2003)

VIDAL-MADJAR, A. See ANDRÉ, M. K., et al. Oxygen Gas-Phase Abundance Revisited.

VIEGAS, SUELI M. Ultraviolet Continuum, Physical Conditions, and Filling Factor in Active Galactic Nuclei. *Lucimara P. Martins, Sueli M. Viegas, & Ruth Gruenwald.* 587, 562 (2003)

Ultraviolet Continuum, Physical Conditions and Filling Factor in Active Galactic Nuclei: Erratum (ApJ, 587, 562 [2003]). *Lucimara P. Martins, Sueli M. Viegas, & Ruth Gruenwald.* 592, 1264 (2003) (Orig. paper in 587, 562 (2003))

VIETRI, MARIO. On Particle Acceleration around Shocks. I. *Mario Vietri.* 591, 954 (2003)

On the Generation of Ultra–High-Energy Cosmic Rays in Gamma-Ray Bursts: A Reappraisal. *Mario Vietri, Daniel De Marco, & Dafne Guetta.* 592, 378 (2003)

VIGNALI, C. The Nuclear Accretion in the FR I Radio Galaxy IC 4296 from *Chandra* and Very Long Baseline Array Observations. *S. Pellegrini, T. Venturi, A. Comastri, G. Fabbiano, F. Fiore, C. Vignali, R. Morganti, & G. Trinchieri.* 585, 677 (2003)

VIGOTTI, M. Decline of the Space Density of Quasars between $z = 2$ and $z = 4$. *M. Vigotti, R. Carballo, C. R. Benn, G. De Zotti, R. Fanti, J. I. Gonzalez Serrano, K.-H. Mack, & J. Holt.* 591, 43 (2003)

VIJH, UMA P. The Dust in Lyman Break Galaxies. *Uma P. Vijh, Adolph N. Witt, & Karl D. Gordon.* 587, 533 (2003)

VIKHLININ, A. See MARKEVITCH, M., et al. *Chandra* Spectra of the Soft X-Ray Diffuse Background.

See MARKEVITCH, M., et al. *Chandra* Temperature Map of A754 and Constraints on Thermal Conduction.

Cosmological Constraints from the Evolution of the Cluster Baryon Mass Function at $z \sim 0.5$. *A. Vikhlinin, A. Voevodkin, C. R. Mullis, L. VanSpeybroeck, H. Quintana, B. R. McNamara, I. Gioia, A. Hornstrup, J. P. Henry, W. R. Forman, & C. Jones.* 590, 15 (2003)

See MULLIS, C. R., et al. The 160 Square Degree *ROSAT* Survey: The Revised Catalog of 201 Clusters with Spectroscopic Redshifts.

Chandra Observations of the NGC 1550 Galaxy Group: Implication for the Temperature and Entropy Profiles of 1 keV Galaxy Groups. *M. Sun, W. Forman, A. Vikhlinin, A. Hornstrup, C. Jones, & S. S. Murray.* 598, 250 (2003)

VILAPLANA, R. Irregular Particles in Comet C/1995 O1 Hale-Bopp Inferred from Its Mid-Infrared Spectrum. *F. Moreno, O. Muñoz, R. Vilaplana, & A. Molina.* 595, 522 (2003)

VILA-VILARÓ, B. CO (3–2) Observations of Early-Type Galaxies with the Heinrich Hertz Telescope. *B. Vila-Vilaró, J. Cepa, & H. M. Butner.* 594, 232 (2003)

VILCHEZ, J. M. Capturing a Star Formation Burst in Galaxies Infalling onto the Cluster A1367. *G. Gavazzi, L. Cortese, A. Boselli, J. Iglesias-Paramo, J. M. Vilchez, & L. Carrasco.* 597, 210 (2003)

VILCHEZ, JOSE M. Spectroscopy of Dwarf Galaxies in the Virgo Cluster. I. Data, Chemical Abundances, and Ionization Structure. *José M. Vílchez & Jorge Iglesias-Páramo.* 145, 225 (2003)

Deep Near-Infrared Mapping of Young and Old Stars in Blue Compact Dwarf Galaxies. *Luz M. Cairós, Nicola Caon, Polychronis Papaderos, Kai Noeske, Jose M. Vílchez, Begoña García Lorenzo, & Casiana Muñoz-Tuñón.* 593, 312 (2003)

VILLAR-MARTIN, M. See FOSBURY, R. A. E., et al. Massive Star Formation in a Gravitationally Lensed H II Galaxy at $z = 3.357$.

VILLAR-SBAFFI, A. Discovery of Highly Dynamic Matter Enhancements along the Polar Axis and Equatorial Plane in the Luminous Blue Variable Binary HD 5980. *A. Villar-Sbaffi, Anthony F. J. Moffat, & N. St-Louis.* 590, 483 (2003)

See MARCHENKO, S. V., et al. The Unusual 2001 Periastron Passage in the "Clockwork" Colliding-Wind Binary WR 140.

VILLASENOR, J. See CREW, G. B., et al. *HETE-2* Localization and Observation of the Bright, X-Ray–rich Gamma-Ray Burst GRB 021211.

VILLATA, M. See BOTTCHER, M., et al. Coordinated Multiwavelength Observations of BL Lacertae in 2000.

VILLAVER, EVA. Ram Pressure Stripping in Planetary Nebulae. *Eva Villaver, Guillermo García-Segura, & Arturo Manchado.* 585, L49 (2003)

The High-Excitation Planetary Nebula NGC 246: Optical and Near-Ultraviolet Observations and Two-Dimensional Numerical Models. *Andrew Szentgyorgyi, John Raymond, José Franco, Eva Villaver, & Luis López-Martín.* 594, 874 (2003)

Space Telescope Imaging Spectrograph Slitless Observations of Small Magellanic Cloud Planetary Nebulae: A Study on Morphology, Emission-Line Intensity, and Evolution. *Letizia Stanghellini, Richard A. Shaw, Bruce Balick, Max Mutchler, J. Chris Blades, & Eva Villaver.* 596, 997 (2003)

Post–Asymptotic Giant Branch Evolution in the Large Megellanic Cloud: A Study of the Central Stars of Planetary Nebulae. *Eva Villaver, Letizia Stanghellini, & Richard A. Shaw.* 597, 298 (2003)

Hubble Space Telescope Observations of Three Very Young Star Clusters in the Small Magellanic Cloud. *Letizia Stanghellini, Eva Villaver, Richard A. Shaw, & Max Mutchler.* 598, 1000 (2003)

VILMER, N. See LIN, R. P., et al. *RHESSI* Observations of Particle Acceleration and Energy Release in an Intense Solar Gamma-Ray Line Flare.

First Gamma-Ray Images of a Solar Flare. *G. J. Hurford, R. A. Schwartz, S. Krucker, R. P. Lin, D. M. Smith, & N. Vilmer.* 595, L77 (2003)

VINK, JACCO. On the Magnetic Fields and Particle Acceleration in Cassiopeia A. *Jacco Vink & J. Martin Laming.* 584, 758 (2003)

Slow Temperature Equilibration behind the Shock Front of SN 1006. *Jacco Vink, J. Martin Laming, Ming Feng Gu, Andrew Rasmussen, & Jelle S. Kaastra.* 587, L31 (2003)

VIRANI, S. See MARKEVITCH, M., et al. *Chandra* Spectra of the Soft X-Ray Diffuse Background.

See MARKEVITCH, M., et al. *Chandra* Temperature Map of A754 and Constraints on Thermal Conduction.

VISHNIAC, ETHAN T. Ordinary and Viscosity-damped Magnetohydrodynamic Turbulence. *Jungyeon Cho, A. Lazarian, & Ethan T. Vishniac.* 595, 812 (2003)

VISHWAKARMA, R. G. Inhomogeneities in the Microwave Background Radiation Interpreted within the Framework of the Quasi–Steady State Cosmology. *J. V. Narlikar, R. G. Vishwakarma, Amir Hajian, Tarun Souradeep, G. Burbridge, & F. Hoyle.* 585, 1 (2003)

VITI, S. Molecular Gas in Spiral Galaxies: A New Warm Phase at Large Galactocentric Distances?: Erratum (ApJ, 579, 270 [2002]). *P. P. Papadopoulos, W.-F. Thi, & S. Viti.* 583, 524 (2003) (Orig. paper in 579, 270 (2002))

VITON, M. KH 15D: A Star Eclipsed by a Large-Scale Dusty Vortex? *P. Barge & M. Viton.* 593, L117 (2003)

VITORINO, B. F. Numerical Simulations of Astrophysical Jets from Keplerian Disks with Periodic Ejection. *B. F. Vitorino, V. Jatenco-Pereira, & R. Opher.* 592, 332 (2003)

VITTORINI, V. Quasar Evolution Driven by Galaxy Encounters in Hierarchical Structures. *N. Menci, A. Cavaliere, A. Fontana, E. Giallongo, F. Poli, & V. Vittorini.* 587, L63 (2003)

VITTORIO, N. Probing Dark Energy with the Cosmic Microwave Background: Projected Constraints from the *Wilkinson Microwave Anisotropy Probe* and *Planck*. *Amedeo Balbi, C. Baccigalupi, F. Perrotta, S. Matarrese, & N. Vittorio.* 588, L5 (2003)

VITVITSKA, MAYRITA. See PRADA, FRANCISCO, et al. Observing the Dark Matter Density Profile of Isolated Galaxies.

VLADIMIROVA, N. See DURSI, L. J., et al. The Response of Model and Astrophysical Thermonuclear Flames to Curvature and Stretch.

VLAHAKIS, NEKTARIOS. Neutron-rich Hydromagnetic Outflows in Gamma-Ray Burst Sources. *Nektarios Vlahakis, Fang Peng, & Arieh Königl.* 594, L23 (2003)

Relativistic Magnetohydrodynamics with Application to Gamma-Ray Burst Outflows. I. Theory and Semianalytic Trans-Alfvénic Solutions. *Nektarios Vlahakis & Arieh Königl.* 596, 1080 (2003)

Relativistic Magnetohydrodynamics with Applications to Gamma-Ray Burst Outflows. II. Semianalytic Super-Alfvénic Solutions. *Nektarios Vlahakis & Arieh Königl.* 596, 1104 (2003)

VOCKS, C. Generation of Suprathermal Electrons by Resonant Wave-Particle Interaction in the Solar Corona and Wind. *C. Vocks & G. Mann.* 593, 1134 (2003)

VÖGLER, A. Why Solar Magnetic Flux Concentrations Are Bright in Molecular Bands. *M. Schüssler, S. Shelyag, S. Berdyugina, A. Vögler, & S. K. Solanki.* 597, L173 (2003)

VOEVODKIN, A. See VIKHLININ, A., et al. Cosmological Constraints from the Evolution of the Cluster Baryon Mass Function at $z \sim 0.5$.

VOGEL, STUART N. Central Mass Concentration and Bar Dissolution in Nearby Spiral Galaxies. *Mousumi Das, Peter J. Teuben, Stuart N. Vogel, Michael W. Regan, Kartik Sheth, Andrew I. Harris, & William H. Jefferys.* 582, 190 (2003)

The BIMA Survey of Nearby Galaxies (BIMA SONG). II. The CO Data. *Tamara T. Helfer, Michele D. Thornley, Michael W. Regan, Tony Wong, Kartik Sheth, Stuart N. Vogel, Leo Blitz, & Douglas C.-J. Bock.* 145, 259 (2003)

VOGELEY, MICHAEL S. See BAHCALL, NETA A., et al. The Cluster Mass Function from Early Sloan Digital Sky Survey Data: Cosmological Implications.

See SZALAY, ALEXANDER S., et al. Karhunen-Loève Estimation of the Power Spectrum Parameters from the Angular Distribution of Galaxies in Early Sloan Digital Sky Survey Data.

See BLANTON, MICHAEL R., et al. The Galaxy Luminosity Function and Luminosity Density at Redshift $z = 0.1$.

See BLANTON, MICHAEL R., et al. The Broadband Optical Properties of Galaxies with Redshifts $0.02 < z < 0.22$.

VOGES, W. The *ROSAT* All-Sky Survey: A Catalog of Clusters of Galaxies in a Region of 1 Steradian around the South Galactic Pole: Erratum (ApJS, 140, 239 [2002]). *R. Cruddace, W. Voges, H. Böhringer, C. Collins, D. Yentis, & H. MacGillivray.* 144, 299 (2003) (Orig. paper in 140, 239 (2002))

Radio-selected Galaxis in Very Rich Clusters at $z \leq 0.25$. I. Multiwavelength Observations and Data Reduction Techniques. *G. E. Morrison, F. N. Owen, M. J. Ledlow, W. C. Keel, J. M. Hill, W. Voges, & T. Herter.* 146, 267 (2003)

ROSAT View of *Hipparcos* F Stars. *A. A. Suchkov, V. V. Makarov, & W. Voges.* 595, 1206 (2003)

The *ROSAT* North Ecliptic Pole Survey: The Optical Identifications. *I. M. Gioia, J. P. Henry, C. R. Mullis, H. Böhringer, U. G. Briel, W. Voges, & J. P. Huchra.* 149, 29 (2003)

VOGES, WOLFGANG. See SZKODY, PAULA, et al. Two Rare Magnetic Cataclysmic Variables with Extreme Cyclotron Features Identified in the Sloan Digital Sky Survey.

See BAHCALL, NETA A., et al. A Merged Catalog of Clusters of Galaxies from Early Sloan Digital Sky Survey Data.

VOGT, CORINA. Are the Faraday Rotating Magnetic Fields Local to Intracluster Radio Galaxies? *Torsten A. Ensslin, Corina Vogt, T. E. Clarke, & Greg B. Taylor.* 597, 870 (2003)

VOGT, K. See SONNABEND, K., et al. The s-Process Branching at ^{185}W.

VOGT, NICOLE P. See GEBHARDT, KARL, et al. The DEEP Groth Strip Survery. IX. Evolution of the Fundamental Plane of Field Galaxies.

See KOBULNICKY, HENRY A., et al. The DEEP Groth Strip Survey. VII. The Metallicity of Field Galaxies at $0.26 < z < 0.82$ and the Evolution of the Luminosity-Metallicity Relation.

VOGT, STEVEN S. Seven New Keck Planets Orbiting G and K Dwarfs. *R. Paul Butler, Geoffrey W. Marcy, Steven S. Vogt, Debra A. Fischer, Gregory W. Henry, Gregory Laughlin, & Jason T. Wright.* 582, 455 (2003)

See FISCHER, DEBRA A., et al. A Planetary Companion to HD 40979 and Additional Planets Orbiting HD 12661 and HD 38529.

A Sub-Saturn Mass Planet Orbiting HD 3651. *Debra A. Fischer, R. Paul Butler, Geoffrey W. Marcy, Steven S. Vogt, & Gregory W. Henry.* 590, 1081 (2003)

The Spatial, Ionization, and Kinematic Conditions of the $z = 1.39$ Damped Lyα Absorber in Q0957+561 A,B. *Christopher W. Churchill, Richard R. Mellon, Jane C. Charlton, & Steven S. Vogt.* 593, 203 (2003)

VOIT, G. MARK. On the Origin of Intracluster Entropy. *G. Mark Voit, Michael L. Balogh, Richard G. Bower, Cedric G. Lacey, & Greg L. Bryan.* 593, 272 (2003)

Signatures of Galaxy Formation in the Intracluster Medium. *G. Mark Voit & Trevor J. Ponman.* 594, L75 (2003)

VOLOBUYEV, MAXIM. Calculations of the Far-Wing Line Profiles of Sodium and Potassium in the Atmospheres of Substellar-Mass Objects. *Adam Burrows & Maxim Volobuyev.* 583, 985 (2003)

VOLONTERI, MARTA. The Assembly and Merging of Supermassive Black Holes in Hierarchical Models of Galaxy Formation. *Marta Volonteri, Francesco Haardt, & Piero Madau.* 582, 559 (2003)

The Formation of Galaxy Stellar Cores by the Hierarchical Merging of Supermassive Black Holes. *Marta Volonteri, Piero Madau, & Francesco Haardt.* 593, 661 (2003)

VON HELDEN, GERT. Laboratory Infrared Spectroscopy of Cationic Polycyclic Aromatic Hydrocarbon Molecules. *Jos Oomens, A. G. G. M. Tielens, Boris G. Sartakov, Gert von Helden, & Gerard Meijer.* 591, 968 (2003)

VON HIPPEL, T. See MUKADEM, ANJUM S., et al. Constraining the Evolution of ZZ Ceti.

VON HIPPEL, TED. Using Optical and Near-Infrared Photometry to Test MACHO Lens Candidates. *Ted von Hippel, Ata Sarajedini, & Maria Teresa Ruiz.* 595, 794 (2003)

VON KIENLIN, A. See MEREGHETTI, S., et al. *Integral* and *XMM-Newton* Observations of the Weak Gamma-Ray Burst GRB 030227.

VON ROSENVINGE, T. T. See SLOCUM, P. L., et al. Elemental Fractionation in Small Solar Energetic Particle Events.

VOURLIDAS, A. Constraints on Coronal Mass Ejection Dynamics from Simultaneous Radio and White-Light Observations. *M. J. Reiner, A. Vourlidas, O. C. St. Cyr, J. T. Burkepile, R. A. Howard, M. L. Kaiser, N. P. Prestage, & J.-L. Bougeret.* 590, 533 (2003)

Physical Parameters of the 2000 February 11 Coronal Mass Ejection: Ultraviolet Spectra versus White-Light Images. *A. Ciaravella, J. C. Raymond, A. van Ballegooijen, L. Strachan, A. Vourlidas, J. Li, J. Chen, & A. Panasyuk.* 597, 1118 (2003)

Direct Detection of a Coronal Mass Ejection–Associated Shock in Large Angle and Spectrometric Coronagraph Experiment White-Light Images. *A. Vourlidas, S. T. Wu, A. H. Wang, P. Subramanian, & R. A. Howard.* 598, 1392 (2003)

VRBA, F. J. See KLOSE, S., et al. The Very Faint K-Band Afterglow of GRB 020819 and the Dust Extinction Hypothesis of the Dark Bursts.

VREESWIJK, P. M. See HJORTH, J., et al. Very High Column Density and Small Reddening toward GRB 020124 at $z = 3.20$.

See GREINER, J., et al. GRB 011121: A Collimated Outflow into Wind-blown Surroundings.

VRTILEK, J. See MARKEVITCH, M., et al. *Chandra* Temperature Map of A754 and Constraints on Thermal Conduction.

VRTILEK, SAEQA D. Abundance Anomalies in the X-Ray Spectra of Planetary Nebulae NGC 7027 and BD +30°3639. *Holly L. Maness, Saeqa D. Vrtilek, Joel H. Kastner, & Noam Soker.* 589, 439 (2003)

A Compact X-Ray Source and Possible X-Ray Jets within the Planetary Nebula Menzel 3. *Joel H. Kastner, Bruce Balick, Eric G. Blackman, Adam Frank, Noam Soker, Saeqa D. Vrtilek, & Jingqiang Li.* 591, L37 (2003)

VRTILEK, SAEQA DIL. *Chandra* Grating Spectroscopy of the X-Ray Binary 4U 1700−37 in a Flaring State. *Bram Boroson, Saeqa Dil Vrtilek, Timothy Kallman, & Michael Corcoran.* 592, 516 (2003)

WACHTER, R. Optimal Masks for Solar g-Mode Detection. *R. Wachter, J. Schou, A. G. Kosovichev, & P. H. Scherrer.* 588, 1199 (2003)

WACHTER, S. See KOUVELIOTOU, C., et al. Unraveling the Cooling Trend of the Soft Gamma Repeater SGR 1627−41.

WACHTER, STEFANIE. Cool Companions to White Dwarfs from the Two Micron All-Sky Survey Second Incremental Data Release. *Stefanie Wachter, D. W. Hoard, Kathryn H. Hansen, Rebecca E. Wilcox, Hilda M. Taylor, & Steven L. Finkelstein.* 586, 1356 (2003)

A *Chandra* Observation of the Neutron Star X-Ray Transient and Eclipsing Binary MXB 1659−29 in Quiescence. *Rudy Wijnands, Mike Nowak, Jon M. Miller, Jeroen Homan, Stefanie Wachter, & Walter H. H. Lewin.* 594, 952 (2003)

WADA, KEIICHI. Feedback from the First Supernovae in Protogalaxies: The Fate of the Generated Metals. *Keiichi Wada & Aparna Venkatesan.* 591, 38 (2003)

WADA, SETSUKO. See SATO, BUN'EI, et al. A Planetary Companion to the G-Type Giant Star HD 104985.

WADA, SHINPEI. See IWAMURO, FUMIHIDE, et al. Infrared Spectroscopy of 15 Radio Galaxies at $2 < z < 2.6$.

WADE, RICHARD A. Ultraviolet Spectra of Cataclysmic Variable Accretion Disks with Nonsteady $T(r)$ Laws. *Jerome A. Orosz & Richard A. Wade.* 593, 1032 (2003)

WAELKENS, C. Age Dependence of the Vega Phenomenon: Observations. *G. Decin, C. Dominik, L. B. F. M. Waters, & C. Waelkens.* 598, 636 (2003)

WAGNER, R. M. See NESS, J.-U., et al. A *Chandra* Low Energy Transmission Grating Spectrometer Observation of V4743 Sagittarii: A Supersoft X-Ray Source and a Violently Variable Light Curve.

WAGNER, R. MARK. See DRAKE, JEREMY J., et al. The Extraordinary X-Ray Light Curve of the Classical Nova V1494 Aquilae (1999 No. 2) in Outburst: The Discovery of Pulsations and a "Burst."

The Optical Light Curves of XTE J2123−058. III. The Mass of the Binary Components and the Structure of the Quiescent Accretion Disk. *T. Shahbaz, C. Zurita, J. Casares, G. Dubus, P. A. Charles, R. Mark Wagner, & E. Ryan.* 585, 443 (2003)

WAGNER, S. J. Quasar Elemental Abundances at High Redshifts. *M. Dietrich, F. Hamann, J. C. Shields, A. Constantin, J. Heidt, K. Jäger, M. Vestergaard, & S. J. Wagner.* 589, 722 (2003)

WAHHAJ, Z. The Inner Rings of β Pictoris. *Z. Wahhaj, D. W. Koerner, M. E. Ressler, M. W. Werner, D. E. Backman, & A. I. Sargent.* 584, L27 (2003)

WAKELAM, V. The Hot Core around the Low-Mass Protostar IRAS 16293−2422: Scoundrels Rule! *S. Cazaux, A. G. G. M. Tielens, C. Ceccarelli, A. Castets, V. Wakelam, E. Caux, B. Parise, & D. Teyssier.* 593, L51 (2003)

WAKELY, S. P. See HOLDER, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.

See DE LA CALLE PÉREZ, I., et al. Search for High-Energy Gamma Rays from an X-Ray–Selected Blazar Sample.

WAKKER, B. P. The *Far Ultraviolet Spectroscopic Explorer* Survey of O VI Absorption in and near the Galaxy. *B. P. Wakker, B. D. Savage, K. R. Sembach, P. Richter, M. Meade, E. B. Jenkins, J. M. Shull, T. B. Ake, W. P. Blair, W. V. Dixon, S. D. Friedman, J. C. Green, R. F. Green, J. W. Kruk, H. W. Moos, E. M. Murphy, W. R. Oegerle, D. J. Sahnow, G. Sonneborn, E. Wilkinson, & D. G. York.* 146, 1 (2003)

See SAVAGE, B. D., et al. Distribution and Kinematics of O VI in the Galactic Halo.

See SEMBACH, K. R., et al. Highly Ionized High-Velocity Gas in the Vicinity of the Galaxy.

WAKKER, BART P. A *Far Ultraviolet Spectroscopic Explorer* Survey of Molecular Hydrogen in Intermediate-Velocity Clouds in the Milky Way Halo. *Philipp Richter, Bart P. Wakker, Blair D. Savage, & Kenneth R. Sembach.* 586, 230 (2003)

WALBORN, NOLAN R. The Remarkable Alternating Spectra of the Of?p Star HD 191612. *Nolan R. Walborn, Ian D. Howarth, Artemio Herrero, & Daniel J. Lennon.* 588, 1025 (2003)

WALCK, C. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

WALKER, A. R. See BERSIER, D., et al. The Unusual Optical Afterglow of the Gamma-Ray Burst GRB 021004: Color Changes and Short-Timescale Variability.

The Distance to the Large Magellanic Cloud Cluster NGC 1866 and the Surrounding Field. *M. Salaris, S. Percival, E. Brocato, G. Raimondo, & A. R. Walker.* 588, 801 (2003)

WALKER, ARTHUR B. C., II. The Solar Chromosphere/Corona Interface. I. Far-Ultraviolet to Extreme-Ultraviolet Observations and Modeling of Unresolved Coronal Funnels. *Dennis S. Martínez-Galarce, Arthur B. C. Walker II, Troy W. Barbee II, & Richard B. Hoover.* 585, 1095 (2003)

WALKER, G. See HOLDER, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.

See DE LA CALLE PEREZ, I., et al. Search for High-Energy Gamma Rays from an X-Ray–Selected Blazar Sample.

WALKER, G. A. H. Evidence for Planet-Induced Chromospheric Activity on HD 179949. *E. Shkolnik, G. A. H. Walker, & D. A. Bohlender.* 597, 1092 (2003)

WALKER, GORDON A. H. A Planetary Companion to γ Cephei A. *Artie P. Hatzes, William D. Cochran, Michael Endl, Barbara McArthur, Diane B. Paulson, Gordon A. H. Walker, Bruce Campbell, & Stephenson Yang.* 599, 1383 (2003)

WALKER, J. See COLAVITA, M., et al. Observations of DG Tauri with the Keck Interferometer.

WALKER, MARK. Dense Gas Clouds and the Unidentified EGRET Sources. *Mark Walker, Masaki Mori, & Michiko Ohishi.* 589, 810 (2003)

WALKER, MARK A. Nanolensing of Gamma-Ray Bursts. *Mark A. Walker & Geraint F. Lewis.* 589, 844 (2003)

WALKER, T. P. Testing Two Nuclear Physics Approximations Used in the Standard Leaky-Box Model for the Spallogenic Production of LiBeB. *J. P. Kneller, J. R. Phillips, & T. P. Walker.* 589, 217 (2003)

WALLACE, B. J. A Multifrequency Radio Study of Supernova Remnant G292.0+1.8 and Its Pulsar Wind Nebula. *B. M. Gaensler & B. J. Wallace.* 594, 326 (2003)

WALLACE, K. See COLAVITA, M., et al. Observations of DG Tauri with the Keck Interferometer.

WALLERSTEIN, GEORGE. Abundances of Post–Iron-Peak Elements in HD 35155: A Symbiotic Star of Spectral Type S. *Andrew D. Vanture, George Wallerstein, Roberto Gallino, & Stefano Masera.* 587, 384 (2003)

WALLIN, JOHN F. A Minor-Merger Interpretation for NGC 1097's "Jets." *James L. Higdon & John F. Wallin.* 585, 281 (2003)

WALMSLEY, C. M. A High Spectral Resolution VLBI Study of the 12 GHz Methanol Masers in W3(OH): Their Submilliarcsecond Structure and Clues on Saturation. *L. Moscadelli, K. M. Menten, C. M. Walmsley, & M. J. Reid.* 583, 776 (2003)

WALP, BERNARD. See FISCHER, DEBRA A., et al. A Planetary Companion to HD 40979 and Additional Planets Orbiting HD 12661 and HD 38529.

WALTER, FABIAN. *Chandra* Observations of Expanding Shells in the Dwarf Starburst Galaxy NGC 3077. *Jürgen Ott, Crystal L. Martin, & Fabian Walter.* 594, 776 (2003)

Millimeter Observations of GRB 030329: Continued Evidence for a Two-Component Jet. *Kartik Sheth, Dale A. Frail, Stephen White, Mousumi Das, Frank Bertoldi, Fabian Walter, Shri R. Kulkarni, & Edo Berger.* 595, L33 (2003)

WALTERBOS, RENÉ A. M. Optical Spectroscopy and Ionization Models of the Diffuse Ionized Gas in M33, M51/NGC 5195, and M81. *Charles G. Hoopes & René A. M. Walterbos.* 586, 902 (2003)

WALTMAN, ELIZABETH B. Statistical Analysis of 5 Year Continuous Radio Flare Data from β Persei, V711 Tauri, δ Librae, and UX Arietis. *Mercedes T. Richards, Elizabeth B. Waltman, Frank D. Ghigo, & Donald St. P. Richards.* 147, 337 (2003)

WALTON, NICHOLAS A. Serendipity and the Sloan Digital Sky Survey: Discovery of the Largest Known Planetary Nebula on the Sky. *Paul C. Hewett, Michael J. Irwin, Evan D. Skillman, Craig B. Foltz, Jon P. Willis, Stephen J. Warren, & Nicholas A. Walton.* 599, L37 (2003)

WALTON, S. R. Weak Infrared Molecular Lines Reveal Rapid Outflow in Cool Magnetic Sunspot Penumbral Fibrils. *M. J. Penn, W. D. Cao, S. R. Walton, G. A. Chapman, & W. Livingston.* 590, L119 (2003)

WALTON, STEPHAN R. The Contribution of Faculae and Network to Long-Term Changes in the Total Solar Irradiance. *Stephan R. Walton, Dora G. Preminger, & Gary A. Chapman.* 590, 1088 (2003)

WAMBSGANSS, J. See KOOPMANS, L. V. E., et al. Extrinsic Radio Variability of JVAS/CLASS Gravitational Lenses.

WAMBSGANSS, JOACHIM. The Mean Number of Extra Microimage Pairs for Macrolensed Quasars. *Jonathan Granot, Paul L. Schechter, & Joachim Wambsganss.* 583, 575 (2003)

WANAJO, SHINYA. Enhancement of Resonant Thermonuclear Reaction Rates in Extremely Dense Stellar Plasmas. *Naoki Itoh, Nami Tomizawa, Shinya Wanajo, & Satoshi Nozawa.* 586, 1436 (2003)

The r-Process in Supernovae Explosions from the Collapse of O-Ne-Mg Cores. *Shinya Wanajo, Masaya Tamamura, Naoki Itoh, Ken'ichi Nomoto, Yuhri Ishimaru, Timothy C. Beers, & Satoshi Nozawa.* 593, 968 (2003)

WANG, A. H. Direct Detection of a Coronal Mass Ejection–Associated Shock in Large Angle and Spectrometric Coronagraph Experiment White-Light Images. *A. Vourlidas, S. T. Wu, A. H. Wang, P. Subramanian, & R. A. Howard.* 598, 1392 (2003)

WANG, B. S. See AMENOMORI, M., et al. Multi-TeV Gamma-Ray Flares from Markarian 421 in 2000 and 2001 Observed with the Tibet Air Shower Array.

WANG, C. *Voyager 1* and *2* Observations of Magnetic Fields and Associated Cosmic-Ray Variations from 2000 through 2001: 60–87 AU. *L. F. Burlaga, N. F. Ness, F. B. McDonald, J. D. Richardson, & C. Wang.* 582, 540 (2003)

Large-Scale Magnetic Field Fluctuations and Development of the 1999–2000 Global Merged Interaction Region: 1–60 AU. *L. F. Burlaga, C. Wang, J. D. Richardson, & N. F. Ness.* 585, 1158 (2003)

Evolution of Magnetic Fields in Corotating Interaction Regions from 1 to 95 AU: Order to Chaos. *L. F. Burlaga, C. Wang, J. D. Richardson, & N. F. Ness.* 590, 554 (2003)

WANG, DING-XIONG. Magnetic Coupling of a Rotating Black Hole with Its Surrounding Accretion Disk. *Ding-Xiong Wang, Ren-Yi Ma, Wei-Hua Lei, & Guo-Zheng Yao.* 595, 109 (2003)

WANG, H. Signature of Avalanche in Solar Flares as Measured by Photospheric Magnetic Fields. *V. I. Abramenko, V. B. Yurchyshyn, H. Wang, T. J. Spirock, & P. R. Goode.* 597, 1135 (2003)

High Spatial Resolution Observations of Pores and the Formation of a Rudimentary Penumbra. *G. Yang, Y. Xu, H. Wang, & C. Denker.* 597, 1190 (2003)

See AMENOMORI, M., et al. Multi-TeV Gamma-Ray Flares from Markarian 421 in 2000 and 2001 Observed with the Tibet Air Shower Array.

WANG, HAIMIN. Periodic Motion along a Solar Filament Initiated by a Subflare. *Ju Jing, Jeongwoo Lee, Thomas J. Spirock, Yan Xu, Haimin Wang, & G. S. Choe.* 584, L103 (2003)

Sympathetic Coronal Mass Ejections. *Y.-J. Moon, G. S. Choe, Haimin Wang, & Y. D. Park.* 588, 1176 (2003)

Study of Ribbon Separation of a Flare Associated with a Quiescent Filament Eruption. *Haimin Wang, Jiong Qui, Ju Jing, & Hongqi Zhang.* 593, 564 (2003)

Observational Evidence of a Magnetic Flux Rope Eruption Associated with the X3 Flare on 2002 July 15. *Yu Liu, Yunchun Jiang, Haishen Ji, Hongqi Zhang, & Haimin Wang.* 593, L137 (2003)

Observations of the Failed Eruption of a Filament. *Haisheng Ji, Haimin Wang, Edward J. Schmahl, Y.-J. Moon, & Yunchun Jiang.* 595, L135 (2003)

Hα Dimmings Associated with the X1.6 Flare and Halo Coronal Mass Ejection on 2001 October 19. *Yunchun Jiang, Haisheng Ji, Haimin Wang, & Huadong Chen.* 597, L161 (2003)

WANG, J. A Puzzling X-Ray Source Found in the *Chandra* Deep Field–South. *J. Wang, T. Yaqoob, G. Szokoly, R. Gilli, L. Kewley, V. Mainieri, M. Nonino, P. Rosati, P. Tozzi, W. Zheng, A. Zirm, & C. Norman.* 590, L87 (2003)

See GILLI, R., et al. Tracing the Large-Scale Structure in the *Chandra* Deep Field South.

WANG, J. X. No X-Ray–bright Type II Quasars among the Lyα Emitters. *S. Malhotra, J. X. Wang, J. E. Rhoads, T. M. Heckman, & C. A. Norman.* 585, L25 (2003)

An Explanation for Large Enhancements of Nitrogen Relative to Carbon and Oxygen in Solar ^{3}He-rich Events. *T. X. Zhang & J. X. Wang.* 588, L57 (2003)

WANG, K. See ATKINS, R., et al. The High-Energy Gamma-Ray Fluence and Energy Spectrum of GRB 970417A from Observations with Milagrito.

See FALCONE, A., et al. Observation of GeV Solar Energetic Particles from the 1997 November 6 Event Using Milagrito.

See ATKINS, R., et al. Observation of TeV Gamma Rays from the Crab Nebula with Milagro Using a New Background Rejection Technique.

WANG, L. See SCHAEFER, BRADLEY E., et al. GRB 021004: A Massive Progenitor Star Surrounded by Shells.

See KAWABATA, K. S., et al. On the Spectrum and Spectropolarimetry of Type Ic Hypernova SN 2003dh/GRB 030329.

WANG, LIFAN. Multicolor Light Curves of Type Ia Supernovae on the Color-Magnitude Diagram: A Novel Step toward More Precise Distance and Extinction Estimates. *Lifan Wang, Gerson Goldhaber, Greg Aldering, & Saul Perlmutter.* 590, 944 (2003)

Spectropolarimetry of SN 2001el in NGC 1448: Asphericity of a Normal Type Ia Supernova. *Lifan Wang, Dietrich Baade, Peter Höflich, Alexei Khokhlov, J. Craig Wheeler, D. Kasen, Peter E. Nugent, Saul Perlmutter, Claes Fransson, & Peter Lundqvist.* 591, 1110 (2003)

Spectropolarimetry of the Type Ic Supernova SN 2002ap in M74: More Evidence for Asymmetric Core Collapse. *Lifan Wang, Dietrich Baade, Peter Höflich, & J. Craig Wheeler.* 592, 457 (2003)

See KASEN, DANIEL, et al. Analysis of the Flux and Polarization Spectra of the Type Ia Supernova SN 2001el: Exploring the Geometry of the High-Velocity Ejecta.

See MICHAEL, ELI, et al. *Hubble Space Telescope* Observations of High-Velocity Lyα and Hα Emission from Supernova Remnant 1987A: The Structure and Development of the Reverse Shock.

Spectroscopic Detection of Type Ia Supernovae in the Sloan Digital Sky Survey. *Darren S. Madgwick, Paul C. Hewett, Daniel J. Mortlock, & Lifan Wang.* 599, L33 (2003)

WANG, Q. D. Probing O VI Emission in the Halos of Edge-On Spiral Galaxies. *B. Otte, E. M. Murphy, J. C. Howk, Q. D. Wang, W. R. Oegerle, & K. R. Sembach.* 591, 821 (2003)

WANG, Q. DANIEL. Supernova Remnant Crossing a Density Jump: A Thin-Shell Model. *Yang Chen, Fan Zhang, Rosa M. Williams, & Q. Daniel Wang.* 595, 227 (2003)

A Deep *Chandra* X-Ray Observation of NGC 1637. *Stefan Immler, Q. Daniel Wang, Douglas C. Leonard, & Eric M. Schlegel.* 595, 727 (2003)

Nonnuclear Hyper/Ultralumious X-Ray Sources in the Starbursting Cartwheel Ring Galaxy. *Yu Gao, Q. Daniel Wang, P. N. Appleton, & Ray A. Lucas.* 596, L171 (2003)

Chandra Observation of the Edge-on Galaxy NGC 3556 (M108): Violent Galactic Disk-Halo Interaction Revealed. *Q. Daniel Wang, Tara Chaves, & Judith A. Irwin.* 598, 969 (2003)

WANG, TING-GUI. SDSS J094857.3+002225: A Very Radio Loud, Narrow-Line Quasar with Relativistic Jets? *Hong-Yan Zhou, Ting-Gui Wang, Xiao-Bo Dong, You-Yuan Zhou, & Cheng Li.* 584, 147 (2003)

WANG, X. See AMENOMORI, M., et al. Multi-TeV Gamma-Ray Flares from Markarian 421 in 2000 and 2001 Observed with the Tibet Air Shower Array.

WANG, X. Y. External Shock Model for the Large-Scale, Relativistic X-Ray Jets from the Microquasar XTE J1550−564. *X. Y. Wang, Z. G. Dai, & T. Lu.* 592, 347 (2003)

The Radio Afterglow from the Giant Flare of SGR 1900+14: The Same Mechanism as Afterglows from Classic Gamma-Ray Bursts? *K. S. Cheng & X. Y. Wang.* 593, L85 (2003)

WANG, XIAOHU. Stability of an Ultrarelativistic Blast Wave in an External Medium with a Steep Power-Law Density Profile. *Xiaohu Wang, Abraham Loeb, & Eli Waxman.* 594, 924 (2003)

WANG, Y. G. See AMENOMORI, M., et al. Multi-TeV Gamma-Ray Flares from Markarian 421 in 2000 and 2001 Observed with the Tibet Air Shower Array.

WANG, Y. M. On the Topological Evolution of the Coronal Magnetic Field During the Solar Cycle. *Y. M. Wang & N. R. Sheeley, Jr.* 599, 1404 (2003)

WANG, Y. P. Cosmic Star Formation History Assocatied with Quasar Activity: An Approach Using the Black Hole–to–Bulge Mass Correlation. *Y. P. Wang, T. Yamada, & Y. Taniguchi.* 588, 113 (2003)

WANG, Y.-M. The Solar Wind and Its Magnetic Sources at Sunspot Maximum. *Y.-M. Wang & N. R. Sheeley, Jr.* 587, 818 (2003)

Solar Wind Speed and Temperature outside 10 AU and the Termination Shock. *Y. C. Whang, L. F. Burlaga, Y.-M. Wang, & N. R. Sheeley, Jr.* 589, 635 (2003)

On the Fluctuating Component of the Sun's Large-Scale Magnetic Field. *Y.-M. Wang & N. R. Sheeley, Jr.* 590, 1111 (2003)

Modeling the Sun's Large-Scale Magnetic Field during the Maunder Minimum. *Y.-M. Wang & N. R. Sheeley, Jr.* 591, 1248 (2003)

WANG, YUN. How Sensitive Are Weak Lensing Statistics to Dark Energy Content? *Dipak Munshi & Yun Wang.* 583, 566 (2003)

Wavelet Band Powers of the Primordial Power Spectrum from Cosmic Microwave Background Data. *Pia Mukherjee & Yun Wang.* 593, 38 (2003)

Future Type Ia Supernova Data as Tests of Dark Energy from Modified Friedmann Equations. *Yun Wang, Katherine Freese, Paolo Gondolo, & Matthew Lewis.* 594, 25 (2003)

Direct Wavelet Expansion of the Primordial Power Spectrum. *Pia Mukherjee & Yun Wang.* 598, 779 (2003)

Model-Independent Reconstruction of the Primordial Power Spectrum from *Wilkinson Microwave Anisotropy Probe* Data. *Pia Mukherjee & Yun Wang.* 599, 1 (2003)

WANG, Z. See GIES, D. R., et al. Wind Accretion and State Transitions in Cygnus X-1.

WANNAWICHIAN, S. Ionization Fractions of Slow Ions in a Plasma with Kappa Distributions for the Electron Velocity. *S. Wannawichian, D. Ruffolo, & Yu. Yu. Kartavykh.* 146, 443 (2003)

WARD, JOHN S. A ^{12}CO Map of M82: The Significance of Warm Molecular Gas. *John S. Ward, Jonas Zmuidzinas, Andrew I. Harris, & Kate G. Isaak.* 587, 171 (2003)

WARD, M. J. X-Ray Luminous Galaxies. I. *Chandra* Observations of IRAS 00317−2142. *I. Georgantopoulos, A. Zezas, & M. J. Ward.* 584, 129 (2003)

The Collimated Wind in NGC 253. *H. Sugai, R. I. Davies, & M. J. Ward.* 584, L9 (2003)

A Massive X-Ray Outflow from the Quasar PDS 456. *J. N. Reeves, P. T. O'Brien, & M. J. Ward.* 593, L65 (2003)

Chandra Observations of the X-Ray–luminous Star-forming Galaxy Merger Arp 299. *A. Zezas, M. J. Ward, & S. S. Murray.* 594, L31 (2003)

WARD, WILLIAM R. The Kuiper Belt as a Resonant Cavity. *William R. Ward.* 584, L39 (2003)

WARDLE, M. Thermal OH (1667/1665 MHz) Absorption and Nonthermal OH (1720 MHz) Emission toward the W28 Supernova Remnant. *F. Yusef-Zadeh, M. Wardle, & D. A. Roberts.* 583, 267 (2003)

OH (1720 MHz) Masers and Mixed-Morphology Supernova Remnants. *F. Yusef-Zadeh, M. Wardle, J. Rho, & M. Sakano.* 585, 319 (2003)

Nonthermal Emission from the Arches Cluster (G0.121+0.017) and the Origin of γ-Ray Emission from 3EG J1746−2851. *F. Yusef-Zadeh, M. Nord, M. Wardle, C. Law, C. Lang, & T. J. W. Lazio.* 590, L103 (2003)

WARGELIN, B. J. See MARKEVITCH, M., et al. *Chandra* Spectra of the Soft X-Ray Diffuse Background.

WARNER, C. Chemical Abundances in Broad Emission Line Regions: The "Nitrogen-loud" Quasi-Stellar Object Q0353−383. *J. A. Baldwin, F. Hamann, K. T. Korista, G. J. Ferland, M. Dietrich, & C. Warner.* 583, 649 (2003)

WARNER, CRAIG. A Relation between Supermassive Black Hole Mass and Quasar Metallicity? *Craig Warner, Fred Hamann, & Matthias Dietrich.* 596, 72 (2003)

WARNER, M. R. Acoustic Wave Propagation in the Sun: Implications for Wave Field and Time-Distance Helioseismology. *C. H. Tong, M. J. Thompson, M. R. Warner, S. P. Rajaguru, & C. C. Pain.* 582, L121 (2003)

Helioseismic Signals and Wave Field Helioseismology. *C. H. Tong, M. J. Thompson, M. R. Warner, & C. C. Pain.* 593, 1242 (2003)

The Significance of Density and Attenuation in the Local Helioseismology. *C. H. Tong, M. J. Thompson, M. R. Warner, & C. C. Pain.* 596, L263 (2003)

WARNER, PHILLIP B. A Theoretical γ Doradus Instability Strip. *Phillip B. Warner, Anthony B. Kaye, & Joyce A. Guzik.* 593, 1049 (2003)

WARREN, B. E. See PRICE, P. A., et al. Discovery of GRB 020405 and Its Late Red Bump.

WARREN, HARRY P. *Transition Region and Coronal Explorer* and Soft X-Ray Telescope Active Region Loop Observations: Comparisons with Static Solutions of the Hydrodynamic Equations. *Amy R. Winebarger, Harry P. Warren, & John T. Mariska.* 587, 439 (2003)

A New Method to Constrain the Iron Abundance from Cooling Delays in Coronal Loops. *Markus J. Aschwanden, Carolus J. Schrijver, Amy R. Winebarger, & Harry P. Warren.* 588, L49 (2003)

Evolving Active Region Loops Observed With the *Transition Region and Coronal Explorer*. I. Observations. *Amy R. Winebarger, Harry P. Warren, & Daniel B. Seaton.* 593, 1164 (2003)

Evolving Active Region Loops Observed with the *Transition Region and Coronal Explorer*. II. Time-Dependent Hydrodynamic Simulations. *Harry P. Warren, Amy R. Winebarger, & John T. Mariska.* 593, 1174 (2003)

Density and Temperature Measurements in a Solar Active Region. *Harry P. Warren & Amy R. Winebarger.* 596, L113 (2003)

WARREN, JESSICA S. Revealing New Physical Structures in the Supernova Remnant N63A through *Chandra* Imaging Spectroscopy. *Jessica S. Warren, John P. Hughes, & Patrick O. Slane.* 583, 260 (2003)

Detection of Magnesium-rich Ejecta in the Middle-aged Supernova Remnant N49B. *Sangwook Park, John P. Hughes, Patrick O. Slane, David N. Burrows, Jessica S. Warren, Gordon P. Garmire, & John A. Nousek.* 592, L41 (2003)

WARREN, MICHAEL S. Gamma-Ray Lines from Asymmetric Supernovae. *Aimee L. Hungerford, Chris L. Fryer, & Michael S. Warren.* 594, 390 (2003)

Cosmological Mestel Disks and the Rossby Vortex Instability: The Origin of Supermassive Black Holes. *Stirling A. Colgate, Renyue Cen, Hui Li, Nathan Currier, & Michael S. Warren.* 598, L7 (2003)

WARREN, S. J. Semilinear Gravitational Lens Inversion. *S. J. Warren & S. Dye.* 590, 673 (2003)

WARREN, STEPHEN J. Serendipity and the Sloan Digital Sky Survey: Discovery of the Largest Known Planetary Nebula on the Sky. *Paul C. Hewett, Michael J. Irwin, Evan D. Skillman, Craig B. Foltz, Jon P. Willis, Stephen J. Warren, & Nicholas A. Walton.* 599, L37 (2003)

WARWICK, R. See MARKOWITZ, A., et al. X-Ray Fluctuation Power Spectral Densities of Seyfert 1 Galaxies.

WARWICK, R. S. A New X-Ray Flare from the Galactic Nucleus Detected with the *XMM-Newton* Photon Imaging Cameras. *A. Goldwurm, E. Brion, P. Goldoni, P. Ferrando, F. Daigne, A. Decourchelle, R. S. Warwick, & P. Predehl.* 584, 751 (2003)

WASCKO, M. See ATKINS, R., et al. Observation of TeV Gamma Rays from the Crab Nebula with Milagro Using a New Background Rejection Technique.

WASCKO, M. O. See ATKINS, R., et al. The High-Energy Gamma-Ray Fluence and Energy Spectrum of GRB 970417A from Observations with Milagrito.

See FALCONE, A., et al. Observation of GeV Solar Energetic Particles from the 1997 November 6 Event Using Milagrito.

WASSERBURG, G. J. Cool Bottom Processes on the Thermally Pulsing Asymptotic Giant Branch and the Isotopic Composition of Circumstellar Dust Grains. *Kenneth M. Nollett, M. Busso, & G. J. Wasserburg.* 582, 1036 (2003)

Abundance Analysis of HE 2146−1247, a Star with Extremely Enhanced Neutron Capture Elements. *Judith G. Cohen, Norbert Christlieb, Y.-Z. Qian, & G. J. Wasserburg.* 588, 1082 (2003)

Stellar Sources for Heavy *r*-Process Nuclei. *Y.-Z. Qian & G. J. Wasserburg.* 588, 1099 (2003)

Hierarchical Structure Formation and Chemical Evolution of Damped Lyα Systems. *Yong-Zhong Qian & G. J. Wasserburg.* 596, L9 (2003)

WASSERMAN, IRA. Saturation of the *r*-Mode Instability. *Phil Arras, Eanna E. Flanagan, Sharon M. Morsink, A. Katrin Schenk, Saul A. Teukolsky, & Ira Wasserman.* 591, 1129 (2003)

WASSERMAN, IRA M. SMC X-1 as an Intermediate-Stage Flaring X-Ray Pulsar. *Dae-Sik Moon, Stephen S. Eikenberry, & Ira M. Wasserman.* 582, L91 (2003)

The Evolution of LMC X-4 Flares: Evidence for Super Eddington Radiation Oosing through Inhomogeneous Polar Cap Accretion Flows? *Dae-Sik Moon, Stephen S. Eikenberry, & Ira M. Wasserman.* 586, 1280 (2003)

WATANABE, A. See ENOMOTO, R., et al. Search for TeV Gamma Rays from SN 1987A in 2001.

WATANABE, ETSUJI. See SATO, BUN'EI, et al. A Planetary Companion to the G-Type Giant Star HD 104985.

WATANABE, J. See KAWABATA, K. S., et al. On the Spectrum and Spectropolarimetry of Type Ic Hypernova SN 2003dh/GRB 030329.

WATANABE, JUN-ICHI. Fluorescence Efficiencies of Monodeuterio-Methane in Comets: Toward the Determination of the Deuterium/Hydrogen Ratio in Methane. *Hideyo Kawakita & Jun-ichi Watanabe.* 582, 534 (2003)

Heliocentric Dependence of the Sodium Emission of Comet 153P/Ikeya-Zhang. *Jun-ichi Watanabe, Hideyo Kawakita, Reiko Furusho, & Mitsugu Fujii.* 585, L159 (2003)

Saturated Hydrocarbons in Comet 153P/Ikeya-Zhang: Ethane, Methane, and Monodeuterio-Methane. *Hideyo Kawakita, Jun-ichi Watanabe, Daisuke Kinoshita, Masateru Ishiguro, & Ryosuke Nakamura.* 590, 573 (2003)

WATANABE, K. Solar Neutron Event in Association with a Large Solar Flare on 2000 November 24. *K. Watanabe, Y. Muraki, Y. Matsubara, K. Murakami, T. Sako, H. Tsuchiya, S. Masuda, M. Yoshimori, N. Ohmori, P. Miranda, N. Martinic, R. Ticona, A. Velarde, F. Kakimoto, S. Ogio, Y. Tsunesada, H. Tokuno, & Y. Shirasaki.* 592, 590 (2003)

WATANABE, MAKOTO. Simultaneous Optical and Near-Infrared Spectropolorimetry of Type 2 Seyfert Galaxies. *Makoto Watanabe, Tetsuya Nagata, Shuji Sato, Hidehiko Nakaya, & J. H. Hough.* 591, 714 (2003)

WATANABE, NAOKI. Dependence of H_2CO and CH_3OH Formation on Temperature and Thickness of H_2O-CO Ice during the Successive Hydrogenation of CO. *Naoki Watanabe, Takahiro Shiraki, & Akira Kouchi.* 588, L121 (2003)

WATANABE, S. See ENOMOTO, R., et al. Search for TeV Gamma Rays from SN 1987A in 2001.

WATANABE, SHIN. Detection of a Fully Resolved Compton Shoulder of the Iron Kα Line in the *Chandra* X-Ray Spectrum of GX 301-2. *Shin Watanabe, Masao Sako, Manabu Ishida, Yoshitaka Ishisaki, Steve M. Kahn, Takayoshi Kohmura, Umeyo Morita, Fumiaki Nagase, Frederik Paerels, & Tadayuki Takahashi.* 597, L37 (2003)

WATARAI, KEN-YA. Model for Relaxation Oscillations of a Luminous Accretion Disk in GRS 1915+105: Variable Inner Edge. *Ken-ya Watarai & Shin Mineshige.* 596, 421 (2003)

Spectral Energy Distribution in Supercritical Disk Accretion Flows through Photon-trapping Effects. *Ken Ohsuga, Shin Mineshige, & Ken-ya Watarai.* 596, 429 (2003)

Accretion Disk Spectra of Ultraluminous X-Ray Sources in Nearby Spiral Galaxies and Galactic Superluminal Jet Sources. *Ken Ebisawa, Piotr Życki, Aya Kubota, Tsunefumi Mizuno, & Ken-ya Watarai.* 597, 780 (2003)

WATERS, L. B. F. M. First Detection of Millimeter Dust Emission from Brown Dwarf Disks. *R. Klein, D. Apai, I. Pascucci, Th. Henning, & L. B. F. M. Waters.* 593, L57 (2003)

Age Dependence of the Vega Phenomenon: Observations. *G. Decin, C. Dominik, L. B. F. M. Waters, & C. Waelkens.* 598, 636 (2003)

WATKINS, RICHARD. Optimal Moments for the Analysis of Peculiar Velocity Surveys. II. Testing. *Hume A. Feldman, Richard Watkins, Adrian L. Melott, & Scott W. Chambers.* 599, 820 (2003)

WATSON, ALAN M. *Hubble Space Telescope* WFPC2 Imaging of the Disk and Jet of HV Tauri C. *Karl R. Stapelfeldt, François Ménard, Alan M. Watson, John E. Krist, Catherine Dougados, Deborah L. Padgett, & Wolfgang Brandner.* 589, 410 (2003)

WATSON, C. Resolution of Distance Ambiguities of Inner Galaxy Massive Star Formation Regions. I. *C. Watson, E. Araya, M. Sewilo, E. Churchwell, P. Hofner, & S. Kurtz.* 587, 714 (2003)

WATSON, CHRISTER. Detection of a Near-Infrared Counterpart to the Massive Protostar G192.16−3.82. *Rémy Indebetouw, Christer Watson, Kelsey E. Johnson, Barbara Whitney, & Ed Churchwell.* 596, L83 (2003)

WATSON, D. Delayed Soft X-Ray Emission Lines in the Afterglow of GRB 030227. *D. Watson, J. N. Reeves, J. Hjorth, P. Jakobsson, & K. Pedersen.* 595, L29 (2003)

WATSON, DAN M. Near-Infrared, Adaptive Optics Observations of the T Tauri Multiple-Star System. *Elise Furlan, William J. Forrest, Dan M. Watson, Keven I. Uchida, Bernhard R. Brandl, Luke D. Keller, & Terry L. Herter.* 596, L87 (2003)

Near-Infrared, Adaptive Optics Observations of the T Tauri Multiple-Star System: Erratum (ApJ, 596, L87 [2003]). *Elise Furlan, William J. Forrest, Dan M. Watson, Keven I. Uchida, Bernhard R. Brandl, Luke D. Keller, & Terry L. Herter.* 599, L117 (2003) (Orig. paper in 596, L87 (2003))

WATSON, P. G. Fast Magnetic Reconnection via Jets and Current Microsheets. *P. G. Watson & I. J. D. Craig.* 590, L57 (2003)

WATSON, R. See FIELDS, DALE L., et al. High-Precision Limb-Darkening Measurement of a K3 Giant Using Microlensing.

WATSON, T. K. See MUKADEM, ANJUM S., et al. Constraining the Evolution of ZZ Ceti.

WATSON, W. D. Images of Astrophysical Masers and Their Variability in a Turbulent Medium: The 25 GHz Methanol Masers. *A. M. Sobolev, W. D. Watson, & V. A. Okorokov.* 590, 333 (2003)

Apparent Sizes and Spectral Line Profiles for Spherical and Disk Masers: Solutions to the Full Equations. *W. D. Watson & H. W. Wyld.* 598, 357 (2003)

WATTS, PETER. Universal Behavior of Phase Correlations in Nonlinear Gravitational Clustering. *Peter Watts, Peter Coles, & Adrian Melott.* 589, L61 (2003)

WAXMAN, E. Collapsar Uncorking and Jet Eruption in Gamma-Ray Bursts. *E. Waxman & P. Mészáros.* 584, 390 (2003)

High-Energy Neutrinos from Magnetars. *Bing Zhang, Z. G. Dai, P. Mészáros, E. Waxman, & A. K. Harding.* 595, 346 (2003)

WAXMAN, ELI. Gamma Rays from Intergalactic Shocks. *Uri Keshet, Eli Waxman, Abraham Loeb, Volker Springel, & Lars Hernquist.* 585, 128 (2003)

Stability of an Ultrarelativistic Blast Wave in an External Medium with a Steep Power-Law Density Profile. *Xiaohu Wang, Abraham Loeb, & Eli Waxman.* 594, 924 (2003)

WAY, MICHAEL J. Non-Gaussianity of the Derived Maps from the First-Year *Wilkinson Microwave Anisotropy Probe* Data. *Lung-Yih Chiang, Pavel D. Naselsky, Oleg V. Verkhodanov, & Michael J. Way.* 590, L65 (2003)

WEAVER, K. A *Chandra* Survey of the Nearest Ultraluminous Infrared Galaxies: Obscured Active Galactic Nuclei or Superstarbursts? *A. Ptak, T. Heckman, N. A. Levenson, K. Weaver, & D. Strickland.* 592, 782 (2003)

WEAVER, K. A. Discovery of Bright Variable X-Ray Sources in NGC 569 with *Chandra*. *K. Heike, H. Awaki, Y. Misao, K. Hayashida, & K. A. Weaver.* 591, L99 (2003)

WEAVER, KIMBERLY A. Fe XXV and Fe XXVI Diagnostics of the Black Hole and Accretion Disk in Active Galaxies: *Chandra* Time-resolved Grating Spectroscopy of NGC 7314. *Tahir Yaqoob, Ian M. George, Timothy R. Kallman, Urmila Padmanabhan, Kimberly A. Weaver, & T. Jane Turner.* 596, 85 (2003)

WEBB, G. M. Diffusive-Compression Acceleration and Turbulent Diffusion of Cosmic Rays in Quasi-periodic and Turbulent Flows. *G. M. Webb, C. M. Ko, G. P. Zank, & J. R. Jokipii.* 595, 195 (2003)

WEBB, R. A. See HOLLAND, W. S., et al. Submillimeter Observations of an Asymmetric Dust Disk around Fomalhaut.

WEBB, T. M. The Canada–United Kingdom Deep Submillimeter Survey. V. The Submillimeter Properties of Lyman Break Galaxies. *T. M. Webb, S. Eales, S. Foucaud, S. J. Lilly, H. McCracken, K. Adelberger, C. Steidel, A. Shapley, D. L. Clements, L. Dunne, O. Le Fèvre, M. Brodwin, & W. Gear.* 582, 6 (2003)

The Canada-UK Deep Submillimeter Survey. VI. The 3 Hour Field. *T. M. Webb, S. A. Eales, S. J. Lilly, D. L. Clements, L. Dunne, W. K. Gear, R. J. Ivison, H. Flores, & M. Yun.* 587, 41 (2003)

WEBB, T. M. A. The Canada-UK Deep Submillimeter Survey. VII. Optical and Near-Infrared Identifications for the 14 Hour Field. *T. M. A. Webb, S. J. Lilly, D. L. Clements, S. Eales, M. Yun, M. Brodwin, L. Dunne, & W. K. Gear.* 597, 680 (2003)

WEBB, WAYNE. A *Hubble Space Telescope* Search for Lyman Continuum Emission from Galaxies at $1.1 < z < 1.4$. *Matthew Malkan, Wayne Webb, & Quinn Konopacky.* 598, 878 (2003)

WEBBER, AARON B. Pulsar Scintillation Arcs. I. Frequency Dependence. *Alex S. Hill, Daniel R. Stinebring, Henry A. Barnor, Daniel E. Berwick, & Aaron B. Webber.* 599, 457 (2003)

WEBBER, W. R. Updated Formula for Calculating Partial Cross Sections for Nuclear Reactions of Nuclei with $Z \leq 28$ and $E > 150$ MeV per Nucleon in Hydrogen Targets. *W. R. Webber, A. Soutoul, J. C. Kish, & J. M. Rockstroh.* 144, 153 (2003)

Voyager 2 Measurements in the Outer Heliosphere of the Energy Spectra of Cosmic-Ray Nuclei from Less than 100 MeV Nucleon^{-1} to More than 1.0 GeV Nucleon^{-1}. *W. R. Webber, F. B. McDonald, & A. Lukasiak.* 599, 582 (2003)

WECHSLER, RISA H. Future Evolution of Cosmic Structure in an Accelerating Universe. *Michael T. Busha, Fred C. Adams, Risa H. Wechsler, & August E. Evrard.* 596, 713 (2003)

WECK, P. F. The Molecular Line Opacity of MgH in Cool Stellar Atmospheres. *P. F. Weck, A. Schweitzer, P. C. Stancil, P. H. Hauschildt, & K. Kirby.* 582, 1059 (2003)

$B' \leftarrow X$ Rovibrationally Resolved Photodissociation of ^{24}MgH. *P. F. Weck, P. C. Stancil, & K. Kirby.* 582, 1263 (2003)

The Molecular Continuum Opacity of ^{24}MgH in Cool Stellar Atmospheres. *P. F. Weck, A. Schweitzer, P. C. Stancil, P. H. Hauschildt, & K. Kirby.* 584, 459 (2003)

New Theoretical Line List for the $B'\ ^2\Sigma^+ \leftarrow X\ ^2\Sigma^+$ System of ^{24}MgH. *S. Skory, P. F. Weck, P. C. Stancil, & K. Kirby.* 148, 599 (2003)

WEEKES, T. C. See HOLDER, J., et al. Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope.

See HALL, T. A., et al. Search for TeV Emissions from Pulsars in Binary Systems.

See AKERLOF, C. W., et al. A Search for Correlations of TeV Gamma Rays with Ultra–High-Energy Cosmic Rays.

See DE LA CALLE PÉREZ, I., et al. Search for High-Energy Gamma Rays from an X-Ray–Selected Blazar Sample.

WEGNER, G. See FELDMAN, H., et al. An Estimate of Ω_m without Conventional Priors.

WEHMEIER, U. See COLAVITA, M., et al. Observations of DG Tauri with the Keck Interferometer.

WEHRLE, ANN E. The Speed and Orientation of the Parsec-Scale Jet in 3C 279. *B. Glenn Piner, Stephen C. Unwin, Ann E. Wehrle, Alma C. Zook, C. Megan Urry, & Diane M. Gilmore.* 588, 716 (2003)

WEI, F. S. Electron Acceleration by Lower Hybrid Turbulence in Solar Flares. *Q. Y. Luo, F. S. Wei, & X. S. Feng.* 584, 497 (2003)

WEI, J. Y. An Active Galactic Nucleus Sample with High X-Ray–to–Optical Flux Ratio from RASS. II. Optical Emission Line Properties of Seyfert 1 Type Active Galactic Nuclei. *D. W. Xu, Stefanie Komossa, J. Y. Wei, Y. Qian, & X. Z. Zheng.* 590, 73 (2003)

WEIDNER, CARSTEN. Galactic-Field Initial Mass Functions of Massive Stars. *Pavel Kroupa & Carsten Weidner.* 598, 1076 (2003)

WEILAND, J. L. See BENNETT, C. L., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Preliminary Maps and Basic Results.

See JAROSIK, N., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: On-Orbit Radiometer Characterization.

See PAGE, L., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Beam Profiles and Window Functions.

See HINSHAW, G., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Data Processing Methods and Systematic Errors Limits.

See BENNETT, C. L., et al. First-Year *Wilkinson Microwave Anisotrophy Probe* (*WMAP*) Observations: Foreground Emission.

See HINSHAW, G., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: The Angular Power Spectrum.

See SPERGEL, D. N., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Determination of Cosmological Parameters.

WEILER, KURT W. Radio Emission from SN 2001gd in NGC 5033. *Christopher J. Stockdale, Kurt W. Weiler, Schuyler D. Van Dyk, Marcos J. Montes, Nino Panagia, Richard A. Sramek, M. A. Perez-Torres, & J. M. Marcaide.* 592, 900 (2003)

WEINBERG, DAVID H. Tracing the Warm-Hot Intergalactic Medium at Low Redshift: X-Ray Forest Observations toward H1821+643. *Smita Mathur, David H. Weinberg, & Xuelei Chen.* 582, 82 (2003)

See HOGG, DAVID W., et al. The Overdensities of Galaxy Environments as a Function of Luminosity and Color.

The Influence of Ω_b on High-Redshit Structure. *Jeffrey P. Gardner, Neal Katz, Lars Hernquist, & David H. Weinberg.* 587, 1 (2003)

See BLANTON, MICHAEL R., et al. The Galaxy Luminosity Function and Luminosity Density at Redshift $z = 0.1$.

See BERLIND, ANDREAS A., et al. The Halo Occupation Distribution and the Physics of Galaxy Formation.

X-Ray Absorption by the Low-Redshift Intergalactic Medium: A Numerical Study of the Λ Cold Dark Matter Model. *Xuelei Chen, David H. Weinberg, Neal Katz, & Romeel Davé.* 594, 42 (2003)

Lyman Break Galaxies and the Lyα Forest. *Juna A. Kollmeier, David H. Weinberg, Romeel Davé, & Neal Katz.* 594, 75 (2003)

See BLANTON, MICHAEL R., et al. The Broadband Optical Properties of Galaxies with Redshifts $0.02 < z < 0.22$.

WEINBERG, MARTIN D. A First Estimate of the Baryonic Mass Function of Galaxies. *Eric F. Bell, Daniel H. McIntosh, Neal Katz, & Martin D. Weinberg.* 585, L117 (2003)

The Clustering Dipole of the Local Universe from the Two Micron All Sky Survey. *Ariyeh H. Maller, Daniel H. McIntosh, Neal Katz, & Martin D. Weinberg.* 598, L1 (2003)

The Optical and Near-Infrared Properties of Galaxies. I. Luminosity and Stellar Mass Functions. *Eric F. Bell, Daniel H. McIntosh, Neal Katz, & Martin D. Weinberg.* 149, 289 (2003)

A Two Micron All Sky Survey All-Sky View of the Sagittarius Dwarf Galaxy. I. Morphology of the Sagittarius Core and Tidal Arms. *Steven R. Majewski, M. F. Skrutskie, Martin D. Weinberg, & James C. Ostheimer.* 599, 1082 (2003)

WEINBERGER, A. J. The First Spatially Resolved Mid-Infrared Spectroscopy of β Pictoris. *A. J. Weinberger, E. E. Becklin, & B. Zuckerman.* 584, L33 (2003)

No Fossil Disk in the T Tauri Multiple System V773 Tauri. *G. Duchêne, A. M. Ghez, C. McCabe, & A. J. Weinberger.* 592, 288 (2003)

WEINBERGER, R. CG J1720−67.8: A Detailed Analysis of Optical and Infrared Properties of a New Ultracompact Group of Galaxies. *S. Temporin, R. Weinberger, G. Galaz, & F. Kerber.* 584, 239 (2003)

Candidate Tidal Dwarf Galaxies in the Compact Group CG J1720−67.8. *S. Temporin, R. Weinberger, G. Galaz, & F. Kerber.* 587, 660 (2003)

WEINER, BENJAMIN. See GEBHARDT, KARL, et al. The DEEP Groth Strip Survey. IX. Evolution of the Fundamental Plane of Field Galaxies.

WEINER, BENJAMIN J. See MADGWICK, DARREN S., et al. The DEEP2 Galaxy Redshift Survey: Spectral Classification of Galaxies at $z \sim 1$.

See KOBULNICKY, HENRY A., et al. The DEEP Groth Strip Survey. VII. The Metallicity of Field Galaxies at $0.26 < z < 0.82$ and the Evolution of the Luminosity-Metallicity Relation.

WEINER, J. Interferometry on Mira in the Mid-Infrared; Cyclic Variability of the Continuum Diameter and the Effect of Spectral Lines on Apparent Size. *J. Weiner, D. D. S. Hale, & C. H. Townes.* 588, 1064 (2003)

Asymptotic Giant Branch and Supergiant Stellar Diameters in the Mid-Infrared. *J. Weiner, D. D. S. Hale, & C. H. Townes.* 589, 976 (2003)

WEINGARTNER, JOSEPH C. Radiative Torques on Interstellar Grains. III. Dynamics with Thermal Relaxation. *Joseph C. Weingartner & B. T. Draine.* 589, 289 (2003)

WEINHEIMER, C. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

WEINTRAUB, DAVID A. *ROSAT* X-Ray Spectral Properties of Nearby Young Associations: TW Hydrae, Tucana-Horologium, and the β Pictoris Moving Group. *Joel H. Kastner, Lara Crigger, Margaret Rich, & David A. Weintraub.* 585, 878 (2003)

Detections of Rovibrational H_2 Emission from the Disks of T Tauri Stars. *Jeffrey S. Bary, David A. Weintraub, & Joel H. Kastner.* 586, 1136 (2003)

WEISBERG, J. M. Does Tiny-Scale Atomic Structure Exist in the Interstellar Medium? *S. Stanimirović, J. M. Weisberg, A. Hedden, K. E. Devine, & J. T. Green.* 598, L23 (2003)

WEISBERG, JOEL M. Detection of OH Absorption against PSR B1849+00. *Snežana Stanimirović, Joel M. Weisberg, John M. Dickey, Anton de la Fuente, Kathryn Devine, Abigail Hedden, & Stuart B. Anderson.* 592, 953 (2003)

WEISMAN, JENNIFER L. Time-dependent Density Functional Theory Calculations of Large Compact Polycyclic Aromatic Hydrocarbon Cations: Implications for the Diffuse Interstellar Bands. *Jennifer L. Weisman, Timothy J. Lee, Farid Salama, & Martin Head-Gordon.* 587, 256 (2003)

WEISS, ACHIM. First Full Evolutionary Computation of the Helium Flash-induced Mixing in Population II Stars. *Santi Cassisi, Helmut Schlattl, Maurizio Salaris, & Achim Weiss.* 582, L43 (2003)

WEISS, NIGEL. On the Interaction between Convection and Magnetic Fields. *Fausto Cattaneo, Thierry Emonet, & Nigel Weiss.* 588, 1183 (2003)

WEISS, W. W. Atmospheric Loss of Exoplanets Resulting from Stellar X-Ray and Extreme-Ultraviolet Heating. *H. Lammer, F. Selsis, I. Ribas, E. F. Guinan, S. J. Bauer, & W. W. Weiss.* 598, L121 (2003)

WEISSKOPF, MARTIN C. See PATEL, SANDEEP K., et al. *Chandra* Observations of the Anomalous X-Ray Pulsar 4U 0142+61.

See BECKER, WERNER, et al. *Chandra X-Ray Observatory* Observations of the Globular Cluster M28 and Its Millisecond Pulsar PSR 1821−24.

WEISZ, D. See MATHESON, T., et al. Photometry and Spectroscopy of GRB 03029 and Its Associated Supernova 2003dh: The First Two Months.

WELCH, D. L. See ALCOCK, C., et al. The MACHO Project Large Magellanic Cloud Variable Star Inventory. XI. Frequency Analysis of the Fundamental Mode RR Lyrae Stars.

WELCH, GARY A. The Cool Interstellar Medium in S0 Galaxies. I. A Survey of Molecular Gas. *Gary A. Welch & Leslie J. Sage.* 584, 260 (2003)

WELCH, W. J. Envelope Emission in Young Stellar Systems: A Subarcsecond Survey of Circumstellar Structure. *Leslie W. Looney, Lee G. Mundy, & W. J. Welch.* 592, 255 (2003)

WELSCH, B. T. Magnetic Helicity Injection by Horizontal Flows in the Quiet Sun. I. Mutual-Helicity Flux. *B. T. Welsch & D. W. Longcope.* 588, 620 (2003)

WELSH, BARRY. High-Resolution Broadband Spectroscopy Using an Externally Dispersed Interferometer. *David J. Erskine, Jerry Edelstein, W. Michael Feuerstein, & Barry Welsh.* 592, L103 (2003)

WELSH, WILLIAM F. See SION, EDWARD M., et al. *Hubble Space Telescope* Spectroscopy of the Unexpected 2001 July Outburst of the Dwarf Nova WZ Sagittae.

Hubble Space Telescope Observations of Ultraviolet Oscillations in WZ Sagittae during the Decline from Outburst. *William F. Welsh, Edward M. Sion, Patrick Godon, Boris T. Gänsicke, Christian Knigge, Knox S. Long, & Paula Szkody.* 599, 509 (2003)

WELTY, D. E. See THORBURN, J. A., et al. Some Diffuse Interstellar Bands Related to Interstellar C_2 Molecules.

WELTY, DANIEL E. Observations of C_3 In Translucent Sight Lines. *Takeshi Oka, Julie A. Thorburn, Benjamin J. McCall, Scott D. Friedman, Lewis M. Hobbs, Paule Sonnentrucker, Daniel E. Welty, & Donald G. York.* 582, 823 (2003)

High-Resolution Observations of Interstellar Ca I Absorption—Implications for Depletions and Electron Densities in Diffuse Clouds. *Daniel E. Welty, L. M. Hobbs, & Donald C. Morton.* 147, 61 (2003)

Abundances and Physical Conditions in the Interstellar Gas toward HD 185418. *Paule Sonnentrucker, Scott D. Friedman, Daniel E. Welty, Donald G. York, & Theodore P. Snow.* 596, 350 (2003)

WEN, LINQING. On the Eccentricity Distribution of Coalescing Black Hole Binaries Driven by the Kozai Mechanism in Globular Clusters. *Linqing Wen.* 598, 419 (2003)

WENDKER, HEINRICH J. Hot Gas in the Circumstellar Bubble S308. *You-Hua Chu, Martín A. Guerrero, Robert A. Gruendl, Guillermo García-Segura, & Heinrich J. Wendker.* 599, 1189 (2003)

WERNER, M. W. The Inner Rings of β Pictoris. *Z. Wahhaj, D. W. Koerner, M. E. Ressler, M. W. Werner, D. E. Backman, & A. I. Sargent.* 584, L27 (2003)

WERNER, MICHAEL. A Catalog of Bright Filamentary Structures in the Interstellar Medium. *Tom Jackson, Michael Werner, & T. N. Gautier III.* 149, 365 (2003)

WERNER, MICHAEL W. See LU, NANYAO, et al. Infrared Emission of Normal Galaxies from 2.5 to 12 Microns: *Infrared Space Observatory* Spectra, Near-Infrared Continuum, and Mid-Infrared Emission Features.

WEST, MICHAEL J. Extraordinary Diffuse Light in Hickson Compact Group 90. *P. M. White, G. Bothun, Martín A. Guerrero, Michael J. West, & Wayne A. Barkhouse.* 585, 739 (2003)

WEST, S. See MATHESON, T., et al. The Spectroscopic Variability of GRB 021004.

WESTERHOFF, S. See ATKINS, R., et al. The High-Energy Gamma-Ray Fluence and Energy Spectrum of GRB 970417A from Observations with Milagrito.

See FALCONE, A., et al. Observation of GeV Solar Energetic Particles from the 1997 November 6 Event Using Milagrito.

See ATKINS, R., et al. Observation of TeV Gamma Rays from the Crab Nebula with Milagro Using a New Background Rejection Technique.

WESTPHAL, ANDREW J. A Fluorescent Aerogel for Capture and Identification of Interplanetary and Interstellar Dust. *Gerardo Domínguez, Andrew J. Westphal, Mark L. F. Phillips, & Steven M. Jones.* 592, 631 (2003)

WETH, C. X-Ray Pulses from Accretion Columns: Contributions to the Energy Dependence of the Pulse Shape. *U. Kraus, C. Zahn, C. Weth, & H. Ruder.* 590, 424 (2003)

WETTERICH, CHRISTOF. Early Quintessence in Light of the *Wilkinson Microwave Anisotropy Probe*. *Robert R. Caldwell, Michael Doran, Christian M. Müller, Gregor Schäfer, & Christof Wetterich.* 591, L75 (2003)

WEYMANN, RAY J. High-Redshift Candidates and the Nature of Small Galaxies in the Hubble Deep Field. *Lisa J. Storrie-Lombardi, Ray J. Weymann, & Rodger I. Thompson.* 591, 623 (2003)

WHANG, Y. C. Solar Wind Speed and Temperature outside 10 AU and the Termination Shock. *Y. C. Whang, L. F. Burlaga, Y.-M. Wang, & N. R. Sheeley, Jr.* 589, 635 (2003)

WHEATLAND, M. S. Toward a Reconnection Model for Solar Flare Statistics. *M. S. Wheatland & I. J. D. Craig.* 595, 458 (2003)

WHEATON, WM. A. BATSE Soft Gamma-Ray Observations of GRO J0422+32. *J. C. Ling & Wm. A. Wheaton.* 584, 399 (2003)
Gamma-Ray Spectra and Variability of the Crab Nebula Emission Observed by BATSE. *J. C. Ling & Wm. A. Wheaton.* 598, 334 (2003)
WHEELER, J. C. See PRICE, P. A., et al. GRB 010921: Strong Limits on an Underlying Supernova from the *Hubble Space Telescope*.
See SCHAEFER, BRADLEY E., et al. GRB 021004: A Massive Progenitor Star Surrounded by Shells.
See PRICE, P. A., et al. Discovery of GRB 020405 and Its Late Red Bump.
Near-Infrared Spectra of Type Ia Supernovae. *G. H. Marion, P. Höflich, W. D. Vacca, & J. C. Wheeler.* 591, 316 (2003)
See KAWABATA, K. S., et al. On the Spectrum and Spectropolarimetry of Type Ic Hypernova SN 2003dh/GRB 030329.
See SMITH, D. A., et al. ROTSE-III Observations of the Early Afterglow from GRB 030329.
WHEELER, J. CRAIG. The Magnetorotational Instability in Core-Collapse Supernova Explosions. *Shizuka Akiyama, J. Craig Wheeler, David L. Meier, & Itamar Lichtenstadt.* 584, 954 (2003)
See WANG, LIFAN, et al. Spectropolarimetry of SN 2001el in NGC 1448: Asphericity of a Normal Type Ia Supernova.
Spectropolarimetry of the Type Ic Supernova SN 2002ap in M74: More Evidence for Asymmetric Core Collapse. *Lifan Wang, Dietrich Baade, Peter Höflich, & J. Craig Wheeler.* 592, 457 (2003)
Chemical Substructure in the Milky Way Halo: A New Population of Old Stars. *Inese I. Ivans, Christopher Sneden, C. Renée James, George W. Preston, Jon P. Fulbright, Peter A. Höflich, Bruce W. Carney, & J. Craig Wheeler.* 592, 906 (2003)
See KASEN, DANIEL, et al. Analysis of the Flux and Polarization Spectra of the Type Ia Supernova SN 2001el: Exploring the Geometry of the High-Velocity Ejecta.
See MICHAEL, ELI, et al. *Hubble Space Telescope* Observations of High-Velocity Lyα and Hα Emission from Supernova Remnant 1987A: The Structure and Development of the Reverse Shock.
WHITE, B. A. See GREEN, E. M., et al. Discovery of a New Class of Pulsating Stars: Gravity-Mode Pulsators among Subdwarf B Stars.
WHITE, MARTIN. The Effect of Bandpass Uncertainities on Component Separation. *Sarah Church, Lloyd Knox, & Martin White.* 582, L63 (2003)
Clusters of Galaxies in the Local Universe. *C. S. Kochanek, Martin White, J. Huchra, L. Macri, T. H. Jarrett, S. E. Schneider, & J. Mader.* 585, 161 (2003)
Surveys of Galaxy Clusters with the Sunyaev-Zel'dovich Effect. *A. E. Schulz & Martin White.* 586, 723 (2003)
Simulating Weak Lensing by Large-Scale Structure. *Chris Vale & Martin White.* 592, 699 (2003)
Studying Clusters with *Planck*. *Martin White.* 597, 650 (2003)
Constraining Evolution in the Halo Model Using Galaxy Redshift Surveys. *Renbin Yan, Darren S. Madgwick, & Martin White.* 598, 848 (2003)
WHITE, NICHOLAS E. An *XMM-Newton* Observation of 4U 1755−33 in Quiescence: Evidence for a Fossil X-Ray Jet. *Lorella Angelini & Nicholas E. White.* 586, L71 (2003)
WHITE, P. M. Extraordinary Diffuse Light in Hickson Compact Group 90. *P. M. White, G. Bothun, Martín A. Guerrero, Michael J. West, & Wayne A. Barkhouse.* 585, 739 (2003)
WHITE, R. L. See TRAN, H. D., et al. Advanced Camera for Surveys Observations of Young Star Clusters in the Interacting Galaxy UGC 10214.
See BOUWENS, R. J., et al. Star Formation at $z \sim 6$: *i*-Dropouts in the Advanced Camera for Surveys Guaranteed Time Observation Fields.
See BLAKESLEE, JOHN P., et al. Advanced Camera for Surveys Photometry of the Cluster RDCS 1252.9−2927: The Color-Magnitude Relation at $z = 1.24$.
See MEURER, GERHARDT R., et al. The Discovery of Globular Clusters in the Protospiral Galaxy NGC 2915: Implications for Hierarchical Galaxy Evolution.
WHITE, RAYMOND E., III. *Chandra* Analysis of A496: No Chemical Gradients across Cold Fronts. *Renato Dupke & Raymond E. White III.* 583, L13 (2003)
WHITE, RICHARD E. Interstellar Matter near the Pleiades. VI. Evidence for an Interstellar Three-Body Encounter. *Richard E. White.* 148, 487 (2003)
WHITE, RICHARD L. See BLAKESLEE, JOHN P., et al. Discovery of Two Distant Type Ia Supernovae in the Hubble Deep Field–North with the Advanced Camera for Surveys.
WHITE, RUSSEL J. Adaptive Optics Observations of Vega: Eight Detected Sources and Upper Limits to Planetary-Mass Companions. *Stanimir A. Metchev, Lynne A. Hillenbrand, & Russel J. White.* 582, 1102 (2003)
Very Low Mass Stars amd Brown Dwarfs in Taurus-Auriga. *Russel J. White & Gibor Basri.* 582, 1109 (2003)
WHITE, S. M. Quasi-periodic Pulsations in a Solar Microwave Burst. *V. V. Grechnev, S. M. White, & M. R. Kundu.* 588, 1163 (2003)
Radio and Hard X-Ray Images of High-Energy Electrons in an X-Class Solar Flare. *S. M. White, S. Krucker, K. Shibasaki, T. Yokoyama, M. Shimojo, & M. R. Kundu.* 595, L111 (2003)
WHITE, STEPHEN. Millimeter Observations of GRB 030329: Continued Evidence for a Two-Component Jet. *Kartik Sheth, Dale A. Frail, Stephen White, Mousumi Das, Frank Bertoldi, Fabian Walter, Shri R. Kulkarni, & Edo Berger.* 595, L33 (2003)
WHITING, ALAN B. The Kinematic State of the Local Volume. *Alan B. Whiting.* 587, 186 (2003)
WHITNEY, BARBARA. See KURASZKIEWICZ, JOANNA K., et al. The Far-Infrared Spectral Energy Distributions of X-Ray–selected Active Galaxies.
Detection of a Near-Infrared Counterpart to the Massive Protostar G192.16−3.82. *Rémy Indebetouw, Christer Watson, Kelsey E. Johnson, Barbara Whitney, & Ed Churchwell.* 596, L83 (2003)
WHITNEY, BARBARA A. Two-dimensional Radiative Transfer in Protostellar Envelopes. I. Effects of Geometry on Class I Sources. *Barbara A. Whitney, Kenneth Wood, J. E. Bjorkman, & Michael J. Wolff.* 591, 1049 (2003)
The Effect of Multiple Scattering on the Polarization from Binary Star Envelopes. I. Self- and Externally Illuminated Disks. *Jennifer L. Hoffman, Barbara A. Whitney, & Kenneth H. Nordsieck.* 598, 572 (2003)
Two-dimensional Radiative Transfer in Protostellar Envelopes. II. An Evolutionary Sequence. *Barbara A. Whitney, Kenneth Wood, J. E. Bjorkman, & Martin Cohen.* 598, 1079 (2003)
WHITTET, D. C. B. A Test Case for the Organic Refractory Model of Interstellar Dust. *S. S. Shenoy, D. C. B. Whittet, J. E. Chiar, A. J. Adamson, W. G. Roberge, & G. E. Hassel.* 591, 962 (2003)
See CLAYTON, GEOFFREY C., et al. The Role of Polycyclic Aromatic Hydrocarbons in Ultraviolet Extinction. I. Probing Small Molecular Polycyclic Aromatic Hydrocarbons.
WHYSONG, DAVID. Adaptive Optics Imaging and Spectroscopy of Cygnus A. I. Evidence for a Minor Merger. *Gabriela Canalizo, Claire Max, David Whysong, Robert Antonucci, & Scott E. Dahm.* 597, 823 (2003)
WICHMANN, R. See NESS, J.-U., et al. A *Chandra* Low Energy Transmission Grating Spectrometer Observation of V4743 Sagittarii: A Supersoft X-Ray Source and a Violently Variable Light Curve.
WICK, J. V. Three-Dimensional Simulations of Disk Accretion to an Inclined Dipole. I. Magnetospheric Flows at Different Θ. *M. M. Romanova, G. V. Ustyugova, A. V. Koldoba, J. V. Wick, & R. V. E. Lovelace.* 595, 1009 (2003)
WICKRAMASINGHE, D. T. A Multiwavelength Study of the High-Field Magnetic White Dwarf EUVE J0317−85.5 (=RE J0317−853). *Stéphane Vennes, G. D. Schmidt, L. Ferrario, D. J. Christian, D. T. Wickramasinghe, & A. Kawka.* 593, 1040 (2003)
WIDROW, LAWRENCE M. Disk-Bulge-Halo Models for the Andromeda Galaxy. *Lawrence M. Widrow, Kathryn M. Perrett, & Sherry H. Suyu.* 588, 311 (2003)
WIEBE, D. S. A Coupled Dynamical and Chemical Model of Starless Cores of Magnetized Molecular Clouds. II. Chemical Differentiation. *V. I. Shematovich, D. S. Wiebe, B. M. Shustov, & Zhi-Yun Li.* 588, 894 (2003)
WIEBUSCH, C. H. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.
WIEDEMANN, C. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.
WIEDEMANN, GUENTER. Infrared Observations during the Secondary Eclipse of HD 209458b. I. 3.6 Micron Occultation Spectroscopy Using the Very Large Telescope. *L. Jeremy Richardson, Drake Deming, Guenter Wiedemann, Cedric Goukenleuque, David Steyert, Joseph Harrington, & Larry W. Esposito.* 584, 1053 (2003)
WIEDENBECK, M. E. See SLOCUM, P. L., et al. Elemental Fractionation in Small Solar Energetic Particle Events.
WIELEBINSKI, R. On Large-Scale Magnetic Field Reversals in the Outer Galaxy. *J. C. Brown, A. R. Taylor, R. Wielebinski, & P. Mueller.* 592, L29 (2003)

WIELER, R. The Predictable Collateral Consequences of Nucleosynthesis by Spallation Reactions in the Early Solar System. *I. Leya, A. N. Halliday, & R. Wieler.* 594, 605 (2003)

WIELER, RAINER. Helium in Lunar Samples Analyzed by High-Resolution Stepwise Etching: Implications for the Temporal Constancy of Solar Wind Isotopic Composition. *Veronika S. Heber, Heinrich Baur, & Rainer Wieler.* 597, 602 (2003)

WIITA, P. J. See GIES, D. R., et al. Wind Accretion and State Transitions in Cygnus X-1.

WIITA, PAUL J. The Origin of X-shaped Radio Galaxies: Clues from the Z-symmetric Secondary Lobes. *Gopal-Krishna, Peter L. Biermann, & Paul J. Wiita.* 594, L103 (2003)

WIJANDS, RUDY. An *XMM-Newton* Observation during the 2000 Outburst of SAX J1808.4−3658. *Rudy Wijands.* 588, 425 (2003)

WIJERS, R. A. M. J. See GREINER, J., et al. GRB 011121: A Collimated Outflow into Wind-blown Surroundings.

WIJNANDS, R. X-Ray Emission from the Jets of XTE J1550−564. *P. Kaaret, S. Corbel, J. A. Tomsick, R. Fender, J. M. Miller, J. A. Orosz, T. Tzioumis, & R. Wijnands.* 582, 945 (2003)

See MILLER, J. M., et al. *XMM-Newton* Spectroscopy of the Accretion-driven Millisecond X-Ray Pulsar XTE J1751−305 in Outburst.

X-Ray Temporal Properties of XTE J1650−500 during Outburst Decay. *E. Kalemci, J. A. Tomsick, R. E. Rothschild, K. Pottschmidt, S. Corbel, R. Wijnands, J. M. Miller, & P. Kaaret.* 586, 419 (2003)

Extended Emission from Cygnus X-3 Detected with *Chandra*. *W. A. Heindl, J. A. Tomsick, R. Wijnands, & D. M. Smith.* 588, L97 (2003)

Untwisting the Tornado: X-Ray Imaging and Spectroscopy of G357.7−0.1. *B. M. Gaensler, J. K. J. Fogel, P. O. Slane, J. M. Miller, R. Wijnands, S. S. Eikenberry, & W. H. G. Lewin.* 594, L35 (2003)

WIJNANDS, RUDY. X-Ray Jet Emission from the Black Hole X-Ray Binary XTE J1550−564 with *Chandra* in 2000. *John A. Tomsick, Stéphane Corbel, Rob Fender, Jon M. Miller, Jerome A. Orosz, Tasso Tzioumis, Rudy Wijnands, & Philip Kaaret.* 582, 933 (2003)

High-Frequency Quasi-Periodic Oscillations in the Black Holes X-Ray Transient XTE J1650−500. *Jeroen Homan, Marc Klein-Wolt, Sabrina Rossi, Jon M. Miller, Rudy Wijnands, Tomaso Belloni, Michiel van der Klis, & Walter H. G. Lewin.* 586, 1262 (2003)

A *Chandra* Observation of the Neutron Star X-Ray Transient and Eclipsing Binary MXB 1659−29 in Quiescence. *Rudy Wijnands, Mike Nowak, Jon M. Miller, Jeroen Homan, Stefanie Wachter, & Walter H. H. Lewin.* 594, 952 (2003)

See TOMSICK, JOHN A., et al. *Chandra* Detections of Two Quiescent Black Hole X-Ray Transients.

WIKLIND, T. Photometric Redshift Using the Far-Infrared Spectral Energy Distribution. *T. Wiklind.* 588, 736 (2003)

WILCOTS, ERIC M. The State of Galaxy Formation in the Local Universe. *D. J. Pisano & Eric M. Wilcots.* 584, 228 (2003)

WILCOX, REBECCA E. Cool Companions to White Dwarfs from the Two Micron All-Sky Survey Second Incremental Data Release. *Stefanie Wachter, D. W. Hoard, Kathryn H. Hansen, Rebecca E. Wilcox, Hilda M. Taylor, & Steven L. Finkelstein.* 586, 1356 (2003)

WILDI, FRANCOIS. See CLOSE, LAIRD M., et al. Mid-Infrared Imaging of the Post–Asymptotic Giant Branch Star AC Herculis with the Multiple Mirror Telescope Adaptive Optics System.

See CLOSE, LAIRD M., et al. High-Resolution Images of Orbital Motion in the Trapezium Cluster: First Scientific Results from the Multiple Mirror Telescope Deformable Secondary Mirror Adaptive Optics System.

WILKES, BELINDA J. See KURASZKIEWICZ, JOANNA K., et al. The Far-Infrared Spectral Energy Distributions of X-Ray–selected Active Galaxies.

WILKIN, FRANCIS P. Trapped Protostellar Winds and Their Breakout. *Francis P. Wilkin & Steven W. Stahler.* 590, 917 (2003)

WILKINSON, D. T. See BENNETT, C. L., et al. The *Microwave Anisotropy Probe* Mission.

See PAGE, L., et al. The Optical Design and Characterization of the *Microwave Anisotropy Probe*.

See JAROSIK, N., et al. Design, Implementation, and Testing of the *Microwave Anisotropy Probe* Radiometers.

WILKINSON, E. See WAKKER, B. P., et al. The *Far Ultraviolet Spectroscopic Explorer* Survey of O VI Absorption in and near the Galaxy.

WILKINSON, M. I. New Mass Estimators for Tracer Populations. *N. W. Evans, M. I. Wilkinson, K. M. Perrett, & T. J. Bridges.* 583, 752 (2003)

WILKINSON, MARK I. A Dynamical Fossil in the Ursa Minor Dwarf Spheroidal Galaxy. *Jan T. Kleyna, Mark I. Wilkinson, Gerard Gilmore, & N. Wyn Evans.* 588, L21 (2003)

A Dynamical Fossil in the Ursa Minor Dwarf Spheroidal Galaxy: Erratum (ApJ, 588, L21 [2003]). *Jan T. Kleyna, Mark I. Wilkinson, Gerard Gilmore, & N. Wyn Evans.* 589, L59 (2003) (Orig. paper in 588, L21 (2003))

WILKINSON, P. N. See KOOPMANS, L. V. E., et al. Extrinsic Radio Variability of JVAS/CLASS Gravitational Lenses.

WILKINSON, S. See SUMI, T., et al. Microlensing Optical Depth toward the Galactic Bulge from Microlensing Observations during 2000 with Difference Image Analysis.

WILL, CLIFFORD M. Propagation Speed of Gravity and the Relativistic Time Delay. *Clifford M. Will.* 590, 683 (2003)

WILLIAMS, A. See FIELDS, DALE L., et al. High-Precision Limb-Darkening Measurement of a K3 Giant Using Microlensing.

WILLIAMS, B. F. Discovery of Radio/X-Ray/Optical–resolved Supernova Remnants in the Center of the Andromeda Galaxy. *A. K. H. Kong, L. O. Sjouwerman, B. F. Williams, M. R. Garcia, & J. R. Dickel.* 590, L21 (2003)

WILLIAMS, D. A. See ATKINS, R., et al. The High-Energy Gamma-Ray Fluence and Energy Spectrum of GRB 970417A from Observations with Milagrito.

Carbon Monoxide Entrapment in Interstellar Ice Analogs. *M. P. Collings, J. W. Dever, H. J. Fraser, M. R. S. McCoustra, & D. A. Williams.* 583, 1058 (2003)

See FALCONE, A., et al. Observation of GeV Solar Energetic Particles from the 1997 November 6 Event Using Milagrito.

See ATKINS, R., et al. Observation of TeV Gamma Rays from the Crab Nebula with Milagro Using a New Background Rejection Technique.

WILLIAMS, DAVID R. Observational Evidence for Mode Coupling in the Chromospheric Network. *R. T. James McAteer, Peter T. Gallagher, David R. Williams, Mihalis Mathioudakis, D. Shaun Bloomfield, Kenneth J. H. Phillips, & Francis P. Keenan.* 587, 806 (2003)

WILLIAMS, ERIC C. An Unusual Eclipse of a Pre–Main-Sequence Star in IC 348. *William Herbst, Roger E. Cohen, & Eric C. Williams.* 596, L243 (2003)

WILLIAMS, G. See MATHESON, T., et al. The Spectroscopic Variability of GRB 021004.

WILLIAMS, JONATHAN P. Mid-Infrared Imaging of the Protostellar Binary L1448N IRS 3(A,B). *David R. Ciardi, Charles M. Telesco, Jonathan P. Williams, R. Scott Fisher, Chris Packham, Robert Piña, & James Radomski.* 585, 392 (2003)

High-Resolution Imaging of CO Outflows in OMC-2 and OMC-3. *Jonathan P. Williams, R. L. Plambeck, & Mark H. Heyer.* 591, 1025 (2003)

WILLIAMS, K. A. The White Dwarf Deficit in Open Clusters: Dynamical Processes. *M. Fellhauer, D. N. C. Lin, M. Bolte, S. J. Aarseth, & K. A. Williams.* 595, L53 (2003)

WILLIAMS, LILIYA R. Angular Distribution of Gamma-Ray Bursts and Weak Lensing. *Liliya R. Williams & Natalie Frey.* 583, 594 (2003)

WILLIAMS, PEREDUR M. A Westerbork Synthesis Radio Telescope 1400 and 350 MHz Continuum Survey of the Cygnus OB2 Association, in Search of Hot Massive Stars. *Diah Y. A. Setia Gunawan, A. Ger de Bruyn, Karel A. van der Hucht, & Peredur M. Williams.* 149, 123 (2003)

WILLIAMS, RIK J. *Chandra* Discovery of the Intracluster Medium around UM 425 at a Redshift of 1.47. *Smita Mathur & Rik J. Williams.* 589, L1 (2003)

WILLIAMS, ROBERT. Introducing EMILI: Computer-Aided Emission Line Identification. *Brian Sharpee, Robert Williams, Jack A. Baldwin, & Peter A. M. van Hoof.* 149, 155 (2003)

WILLIAMS, ROSA M. Supernova Remnant Crossing a Density Jump: A Thin-Shell Model. *Yang Chen, Fan Zhang, Rosa M. Williams, & Q. Daniel Wang.* 595, 227 (2003)

WILLIAMS, ROSA MURPHY. X-Ray Emission from Multiphase Shock in the Large Magellanic Cloud Supernova Remnant N49. *Sangwook Park, David N. Burrows, Gordon P. Garmire, John A. Nousek, John P. Hughes, & Rosa Murphy Williams.* 586, 210 (2003)

WILLIAMS, T. B. The Physics of Supernova Blast Waves. I. Kinematics of DEM L71 in the Large Magellanic Cloud. *Parviz Ghavamian, Cara E. Rakowski, John P. Hughes, & T. B. Williams.* 590, 833 (2003)

WILLIS, JON. Gemini-South + FLAMINGOS Demonstration Science: Near-IR Spectroscopy of the z = 5.77 Quasar SDSS J083643.85+005453.3.

Daniel Stern, Pat Hall, L. Felipe Barrientos, Andrew J. Bunker, Richard Elston, M. J. Ledlow, S. Nicholas Raines, & Jon Willis. 596, L39 (2003)

Willis, Jon P. Serendipity and the Sloan Digital Sky Survey: Discovery of the Largest Known Planetary Nebula on the Sky. *Paul C. Hewett, Michael J. Irwin, Evan D. Skillman, Craig B. Foltz, Jon P. Willis, Stephen J. Warren, & Nicholas A. Walton.* 599, L37 (2003)

Willmer, C. N. A. A Multiwavelength Approach to the Star Formation Rate Estimation in Galaxies at Intermediate Redshifts. *N. Cardiel, D. Elbaz, R. P. Schiavon, C. N. A. Willmer, D. C. Koo, A. C. Phillips, & J. Gallego.* 584, 76 (2003)

Willmer, Christopher N. A. See Gebhardt, Karl, et al. The DEEP Groth Strip Survery. IX. Evolution of the Fundamental Plane of Field Galaxies.

See Madgwick, Darren S., et al. The DEEP2 Galaxy Redshift Survey: Spectral Classification of Galaxies at $z \sim 1$.

See Kobulnicky, Henry A., et al. The DEEP Groth Strip Survey. VII. The Metallicity of Field Galaxies at $0.26 < z < 0.82$ and the Evolution of the Luminosity-Metallicity Relation.

Willott, Chris J. The Submillimeter Properties of Broad Absorption Line Quasars. *Chris J. Willot, Steve Rawlings, & Jennifer A. Grimes.* 598, 909 (2003)

Willott, Chris J. A 3×10^9 $M_\odot$ Black Hole in the Quasar SDSS J1148+5251 at $z = 6.41$. *Chris J. Willott, Ross J. McLure, & Matt J. Jarvis.* 587, L15 (2003)

Wills, Beverley J. The Black Hole–Bulge Relationship in Quasars. *Gregory A. Shields, Karl Gebhardt, Sarah Salviander, Beverley J. Wills, Bingrong Xie, Michael S. Brotherton, Juntao Yuan, & Matthias Dietrich.* 583, 124 (2003)

The Baldwin Effect and Black Hole Accretion: A Spectral Principal Component Analysis of a Complete Quasar Sample. *Zhaohui Shang, Beverley J. Wills, Edward L. Robinson, D. Wills, Ari Laor, Bingrong Xie, & Juntao Yuan.* 586, 52 (2003)

Eddington Accretion and QSO Emission Lines at $z \sim 2$. *Michael Juntao Yuan & Beverley J. Wills.* 593, L11 (2003)

Wills, D. The Baldwin Effect and Black Hole Accretion: A Spectral Principal Component Analysis of a Complete Quasar Sample. *Zhaohui Shang, Beverley J. Wills, Edward L. Robinson, D. Wills, Ari Laor, Bingrong Xie, & Juntao Yuan.* 586, 52 (2003)

Wilman, D. J. See Bersier, D., et al. The Strongly Polarized Afterglow of GRB 020405.

Wilman, R. See Cohen, A. S., et al. The Low-Frequency Radio Counterpart of the *XMM* Large-Scale Structure Survey.

Wilner, D. J. Disks around the Young Stars with TW Hydrae and HD 100546 Imaged at 3.4 Millimeters with the Australia Telescope Compact Array. *D. J. Wilner, T. L. Bourke, C. M. Wright, J. K. Jørgensen, E. F. van Dishoeck, & T. Wong.* 596, 597 (2003)

Wilner, David J. Inner Structures of Protostellar Collapse Candidate B335 Derived from Millimeter-Wave Interferometry. *Daniel W. A. Harvey, David J. Wilner, Philip C. Myers, Mario Tafalla, & Diego Mardones.* 583, 809 (2003)

The Binary Jet in L1551 IRS 5. *Luis F. Rodríguez, Alicia Porras, Mark J. Claussen, Salvador Curiel, David J. Wilner, & Paul T. P. Ho.* 586, L137 (2003)

H I Absorption toward Ultracompact H II Regions: Distances and Galactic Structure. *Vincent L. Fish, Mark J. Reid, David J. Wilner, & Ed Churchwell.* 587, 701 (2003)

Disk Properties and Density Structure of the Star-Forming Dense Core B335. *Daniel W. A. Harvey, David J. Wilner, Philip C. Myers, & Mario Tafalla.* 596, 383 (2003)

Inner Structure of Starless Core L694-2 Derived from Millimeter-Wave Interferometry. *Daniel W. A. Harvey, David J. Wilner, Philip C. Myers, & Mario Tafalla.* 597, 424 (2003)

Envelope Structure of Starless Core L694-2 Derived from a Near-Infrared Extinction Map. *Daniel W. A. Harvey, David J. Wilner, Charles J. Lada, Philip C. Myers, & Joao F. Alves.* 598, 1112 (2003)

Wilson, A. S. Flaring X-Ray Emission from HST-1, a Knot in the M87 Jet. *D. E. Harris, J. A. Biretta, W. Junor, E. S. Perlman, W. B. Sparks, & A. S. Wilson.* 586, L41 (2003)

A Survey for H_2O Megamasers. III. Monitoring Water Vapor Masers in Active Galaxies. *J. A. Braatz, A. S. Wilson, C. Henkel, R. Gough, & M. Sinclair.* 146, 249 (2003)

Wilson, Andrew S. Accretion onto the Supermassive Black Hole in M87. *Tiziana Di Matteo, Steven W. Allen, Andrew C. Fabian, Andrew S. Wilson, & Andrew J. Young.* 582, 133 (2003)

Chandra Snapshot Observations of Low-Luminosity Active Galactic Nuclei with a Compact Radio Source. *Yuichi Terashima & Andrew S. Wilson.* 583, 145 (2003)

A *Chandra* X-Ray Study of NGC 1068. II. The Luminous X-Ray Source Population. *David A. Smith & Andrew S. Wilson.* 591, 138 (2003)

See Storchi-Bergmann, Thaisa, et al. Evolution of the Nuclear Accretion Disk Emission in NGC 1097: Getting Closer to the Black Hole.

Wilson, Christine D. Molecular Gas in Candidate Double-barred Galaxies. II. Cooler, Less Dense Gas Associated with Stronger Central Concentrations. *Glen R. Petitpas & Christine D. Wilson.* 587, 649 (2003)

The Mass Function of Supergiant Molecular Complexes and Implications for Forming Young Massive Star Clusters in the Antennae (NGC 4038/4039). *Christine D. Wilson, Nicholas Scoville, Suzanne C. Madden, & Vassilis Charmandaris.* 599, 1049 (2003)

Wilson, Colleen A. XTE J1946+271 = GRO J1944+26: An Enigmatic Be/X-Ray Binary. *Colleen A. Wilson, Mark H. Finger, M. J. Coe, & Ignacio Negueruela.* 584, 996 (2003)

Chandra Observations of the Faintest Low-Mass X-Ray Binaries. *Colleen A. Wilson, Sandeep K. Patel, Chryssa Kouveliotou, Peter G. Jonker, Michiel van der Klis, Walter H. G. Lewin, Tomaso Belloni, & Mariano Méndez.* 596, 1220 (2003)

Wilson, G. See Chapman, S. C., et al. The Properties of Microjansky Radio Sources in the Hubble Deep Field–North, SSA 13, and SSA 22 Fields.

Wilson, G. W. See Aguirre, J. E., et al. The Spectrum of Integrated Millimeter Flux of the Magellanic Clouds and 30 Doradus from TopHat and DIRBE Data.

Wilson, Gillian. Galaxy Clustering Evolution in the UH8K Weak-Lensing Fields. *Gillian Wilson.* 585, 191 (2003)

Wilson, John C. Near-Infrared Synchrotron Emission from Cassiopeia A. *Jeonghee Rho, Stephen P. Reynolds, William T. Reach, Tom H. Jarrett, Glenn E. Allen, & John C. Wilson.* 592, 299 (2003)

Near-Infrared Spectrophotometry and the CO Emission in V2274 Cygni (Nova Cygni 2001 No. 1). *Richard J. Rudy, William L. Dimpfl, David K. Lynch, S. Mazuk, Catherine C. Venturini, John C. Wilson, R. C. Puetter, & R. Brad Perry.* 596, 1229 (2003)

Wilson, M. E. See Atkins, R., et al. Observation of TeV Gamma Rays from the Crab Nebula with Milagro Using a New Background Rejection Technique.

Wilson, Robert M. Evidence That a Deep Meridional Flow Sets the Sunspot Cycle Period. *David H. Hathaway, Dibyendu Nandy, Robert M. Wilson, & Edwin J. Reichmann.* 589, 665 (2003)

Wilson, T. L. Two Molecular Clouds near M17. *T. L. Wilson, M. M. Hanson, & D. Muders.* 590, 895 (2003)

High-Resolution Continuum Imaging at 1.3 and 0.7 Centimeters of the W3 IRS 5 Region. *T. L. Wilson, D. A. Boboltz, R. A. Gaume, & S. T. Megeath.* 597, 434 (2003)

Wilson-Hodge, Colleen. See Patel, Sandeep K., et al. *Chandra* Observations of the Anomalous X-Ray Pulsar 4U 0142+61.

Windhorst, R. See Stanek, K. Z., et al. Spectroscopic Discovery of the Supernova 2003dh Associated with GRB 030329.

Hubble Space Telescope Images of Submillimeter Sources: Large Irregular Galaxies at High Redshift. *S. C. Chapman, R. Windhorst, S. Odewahn, H. Yan, & C. Conselice.* 599, 92 (2003)

See Matheson, T., et al. Photometry and Spectroscopy of GRB 03029 and Its Associated Supernova 2003dh: The First Two Months.

Windhorst, Rogier A. The Infrared Counterparts of the Optically Unidentified Chandra Deep Field–South 1 Ms Sources. *Haojing Yan, Rogier A. Windhorst, Huub J. A. Röttgering, Seth H. Cohen, Stephen C. Odewahn, Scott C. Chapman, & William C. Keel.* 585, 67 (2003)

Searching for $z \simeq 6$ Objects with the *Hubble Space Telescope* Advanced Camera for Surveys: Preliminary Analysis of a Deep Parallel Field. *Haojing Yan, Rogier A. Windhorst, & Seth H. Cohen.* 585, L93 (2003)

See Eskridge, Paul B., et al. Ultraviolet-Optical Pixel Maps of Face-on Spiral Galaxies: Clues for Dynamics and Star Formation Histories.

Evidence for a Major Merger Origin of High Redshift Sub-millimeter Galaxies. *Christopher J. Conselice, Scott C. Chapman, & Rogier A. Windhorst.* 596, L5 (2003)

Winebarger, Amy R. *Transition Region and Coronal Explorer* and Soft X-Ray Telescope Active Region Loop Observations: Comparisons with Static Solutions of the Hydrodynamic Equations. *Amy R. Winebarger, Harry P. Warren, & John T. Mariska.* 587, 439 (2003)

A New Method to Constrain the Iron Abundance from Cooling Delays in Coronal Loops. *Markus J. Aschwanden, Carolus J. Schrijver, Amy R. Winebarger, & Harry P. Warren.* 588, L49 (2003)

Evolving Active Region Loops Observed With the *Transition Region and Coronal Explorer*. I. Observations. *Amy R. Winebarger, Harry P. Warren, & Daniel B. Seaton.* 593, 1164 (2003)

Evolving Active Region Loops Observed with the *Transition Region and Coronal Explorer*. II. Time-Dependent Hydrodynamic Simulations. *Harry P. Warren, Amy R. Winebarger, & John T. Mariska.* 593, 1174 (2003)

Density and Temperature Measurements in a Solar Active Region. *Harry P. Warren & Amy R. Winebarger.* 596, L113 (2003)

WINGERT, D. W. See GIES, D. R., et al. Wind Accretion and State Transitions in Cygnus X-1.

WINGET, D. E. *Chandra* Observations of Magnetic White Dwarfs and Their Theoretical Implications. *Z. E. Musielak, M. Noble, J. G. Porter, & D. E. Winget.* 593, 481 (2003)

See MUKADEM, ANJUM S., et al. Constraining the Evolution of ZZ Ceti.

WINKLER, C. See MEREGHETTI, S., et al. *Integral* and *XMM-Newton* Observations of the Weak Gamma-Ray Burst GRB 030227.

WINKLER, P. FRANK. The SN 1006 Remnant: Optical Proper Motions, Deep Imaging, Distance, and Brightness at Maximum. *P. Frank Winkler, Gaurav Gupta, & Knox S. Long.* 585, 324 (2003)

Chandra CCD Imagery of the Northeast and Northwest Limbs of SN 1006. *Knox S. Long, Stephen P. Reynolds, John C. Raymond, P. Frank Winkler, Kristy K. Dyer, & Robert Petre.* 586, 1162 (2003)

WINN, J. N. See BERSIER, D., et al. The Unusual Optical Afterglow of the Gamma-Ray Burst GRB 021004: Color Changes and Short-Timescale Variability.

WINN, JOSHUA N. The Multiband Magnification Bias for Gravitational Lenses. *J. Stuart B. Wyithe, Joshua N. Winn, & David Rusin.* 583, 58 (2003)

Interferometric Phase Calibration Sources in the Declination Range 0° to −30°. *Joshua N. Winn, Alok R. Patnaik, & J. M. Wrobel.* 145, 83 (2003)

Investigation of the Possible Third Image and Mass Models of the Gravitational Lens PMN J1632−0033. *Joshua N. Winn, David Rusin, & Christopher S. Kochanek.* 587, 80 (2003)

The Quintuple Quasar: Radio and Optical Observations. *Joshua N. Winn, Christopher S. Kochanek, Charles R. Keeton, & James E. J. Lovell.* 590, 26 (2003)

The Quintuple Quasar: Mass Models and Interpretation. *Charles R. Keeton & Joshua N. Winn.* 590, 39 (2003)

Limits on Eclipses of the Pre–Main-Sequence Star KH 15D in the First Half of the 20th Century. *Joshua N. Winn, Peter M. Garnavich, K. Z. Stanek, & Dimitar D. Sasselov.* 593, L121 (2003)

Mass and Dust in the Disk of a Spiral Lens Galaxy. *Joshua N. Winn, Patrick B. Hall, & Paul L. Schechter.* 597, 672 (2003)

WINNEWISSER, G. A Concise New Look at the *l*-Type Spectrum of $H^{12}C^{14}N$. *S. Thorwirth, H. S. P. Müller, F. Lewen, S. Brünken, V. Ahrens, & G. Winnewisser.* 585, L163 (2003)

Detection of HCN Direct *l*-Type Transitions Probing Hot Molecular Gas in the Proto–Planetary Nebula CRL 618. *S. Thorwirth, F. Wyrowski, P. Schilke, K. M. Menten, S. Brünken, H. S. P. Müller, & G. Winnewisser.* 586, 338 (2003)

Physical Conditions in the Proto–Planetary Nebula CRL 618 Derived from Observations of Vibrationally Excited HC_3N. *F. Wyrowski, P. Schilke, S. Thorwirth, K. M. Menten, & G. Winnewisser.* 586, 344 (2003)

WINNEWISSER, GISBERT. Laboratory Precision Measurements of the Rotational Spectrum of $^{12}C^{17}O$ and $^{13}C^{17}O$. *Gabriele Klapper, Leonid Surin, Frank Lewen, Holger S. P. Müller, Igor Pak, & Gisbert Winnewisser.* 582, 262 (2003)

Trans-Ethyl Methyl Ether: Assignments and Predictions up to 400 GHz for the Vibrational-Torsional Ground State. *Ulrike Fuchs, Gisbert Winnewisser, Peter Groner, Frank C. De Lucia, & Eric Herbst.* 144, 277 (2003)

Laboratory Spectrum of the 1_{11}–2_{02} Rotational Transition of CH_2. *Ernest A. Michael, Frank Lewen, Gisbert Winnewisser, Hiroyuki Ozeki, Hideta Habara, & Eric Herbst.* 596, 1356 (2003)

WINNEWISSER, MANFRED. See MEDVEDEV, IVAN, et al. The Millimeter- and Submillimeter-Wave Spectrum of the Trans-Trans Conformer of Diethyl Ether ($C_2H_5OC_2H_5$).

WINTER, LISA. Composite Accretion Disk and White Dwarf Model Analyses of the Quiescence of Dwarf Novae: EM Cygni, CZ Orionis, and WW Ceti. *Lisa Winter & Edward M. Sion.* 582, 352 (2003)

WINTERS, WAYNE F. Gap Formation by Planets in Turbulent Protostellar Disks. *Wayne F. Winters, Steven A. Balbus, & John F. Hawley.* 589, 543 (2003)

WISCHNEWSKI, R. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

WISNIEWSKI, J. P. Evolution of the Inner Circumstellar Envelope of V838 Monocerotis. *J. P. Wisniewski, K. S. Bjorkman, & A. M. Magalhães.* 598, L43 (2003)

WISNIEWSKI, JOHN P. Spectroscopic and Spectropolarimetric Observations of V838 Monocerotis. *John P. Wisniewski, Nancy D. Morrison, Karen S. Bjorkman, Anatoly S. Miroshnichenko, Amanda C. Gault, Jennifer L. Hoffman, Marilyn R. Meade, & Jason M. Nett.* 588, 486 (2003)

WISSING, H. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

WITT, A. N. See CLAYTON, GEOFFREY C., et al. The Role of Polycyclic Aromatic Hydrocarbons in Ultraviolet Extinction. I. Probing Small Molecular Polycyclic Aromatic Hydrocarbons.

WITT, ADOLPH N. The Dust in Lyman Break Galaxies. *Uma P. Vijh, Adolph N. Witt, & Karl D. Gordon.* 587, 533 (2003)

WITTA, PAUL J. Clear Evidence for Intranight Optical Variability in Radio-quiet Quasars. *Gopal-Krishna, C. S. Stalin, Ram Sagar, & Paul J. Witta.* 586, L25 (2003)

WITTMAN, D. Weak Lensing Discovery and Tomography of a Cluster at $z = 0.68$. *D. Wittman, V. E. Margoniner, J. A. Tyson, J. G. Cohen, A. C. Becker, & I. P. Dell'Antonio.* 597, 218 (2003)

WIZINOWICH, P. See COLAVITA, M., et al. Observations of DG Tauri with the Keck Interferometer.

See SWAIN, MARK, et al. Interferometer Observations of Subparsec-Scale Infrared Emission in the Nucleus of NGC 4151.

WODTKE, ALEC M. Radiative Relaxation and Isomeric Branching of Highly Excited H/C/N: The Importance of Delocalized Vibrational States. *Troy Barger, Alec M. Wodtke, & Joel M. Bowman.* 587, 841 (2003)

WOJDOWSKI, PATRICK S. Resolving the Effects of Resonant X-Ray Line Scattering in Centaurus X-3 with *Chandra*. *Patrick S. Wojdowski, Duane A. Liedahl, Masao Sako, Steven M. Kahn, & Frederik Paerels.* 582, 959 (2003)

WOLF, A. See SAVIN, D. W., et al. Dielectronic Recombination of the Fe XXI and Fe XXII via $N = 2 \rightarrow N' = 2$ Core Excitations.

WOLF, SEBASTIAN. The Circumstellar Disk of the Butterfly Star in Taurus. *Sebastian Wolf, Deborah L. Padgett, & Karl R. Stapelfeldt.* 588, 373 (2003)

Magnetic Field Evolution in Bok Globules. *Sebastian Wolf, R. Launhardt, & T. Henning.* 592, 233 (2003)

Model Spectral Energy Distributions of Circumstellar Debris Disks. I. Analytic Disk Density Distributions. *Sebastian Wolf & Lynne A. Hillenbrand.* 596, 603 (2003)

WOLFE, A. M. Metal Abundances and Kinematics of Quasar Absorbers. II. Absorption Systems toward Q0347−3819 and APM BR J0307−4945. *S. A. Levshakov, I. I. Agafonova, S. D'Odorico, A. M. Wolfe, & M. Dessauges-Zavadsky.* 582, 596 (2003)

WOLFE, ARTHUR M. Surveys for $z > 3$ Damped Lyα Absorption Systems: The Evolution of Neutral Gas: Erratum (ApJ, 543, 552 [2000]). *Lisa J. Storrie-Lombardi & Arthur M. Wolfe.* 592, 1263 (2003) (Orig. paper in 543, 552 (2000))

The ESI/Keck II Damped Lyα Abundance Database. *Jason X. Prochaska, Eric Gawiser, Arthur M. Wolfe, Jeff Cooke, & Dawn Gelino.* 147, 227 (2003)

C II* Absorption in Damped Lyα Systems. I. Star Formation Rates in a Two-Phased Medium. *Arthur M. Wolfe, Jason X. Prochaska, & Eric Gawiser.* 593, 215 (2003)

C II* Absorption in Damped Lyα Systems. I. A New Window on the Star Formation History of the Universe. *Arthur M. Wolfe, Eric Gawiser, & Jason X. Prochaska.* 593, 235 (2003)

The Age-Metallicity Relation of the Universe in Neutral Gas: The First 100 Damped Lyα Systems. *Jason X. Prochaska, Eric Gawiser, Arthur M. Wolfe, Sandra Castro, & S. G. Djorgovski.* 595, L9 (2003)

Metallicity Evolution of Damped Lyα Systems in ΛCDM Cosmology. *Renyue Cen, Jeremiah P. Ostriker, Jason X. Prochaska, & Arthur M. Wolfe.* 598, 741 (2003)

WOLFF, M. T. See SAZ PARKINSON, P. M., et al. Long-Term X-Ray Variability of Circinus X-1.

See TOURNEAR, D., et al. X-Ray Bursts in Neutron Star and Black Hole Binaries from Unconvetional Stellar Aspect Experiment and *Rossi X-Ray Timing Explorer* Data: Detections and Upper Limits.

WOLFF, MICHAEL J. Dust Grain Size Distributions from MRN to MEM. *Geoffrey C. Clayton, Michael J. Wolff, Ulysses J. Sofia, K. D. Gordon, & K. A. Misselt.* 588, 871 (2003)

Two-dimensional Radiative Transfer in Protostellar Envelopes. I. Effects of Geometry on Class I Sources. *Barbara A. Whitney, Kenneth Wood, J. E. Bjorkman, & Michael J. Wolff.* 591, 1049 (2003)

See CLAYTON, GEOFFREY C., et al. The Role of Polycyclic Aromatic Hydrocarbons in Ultraviolet Extinction. I. Probing Small Molecular Polycyclic Aromatic Hydrocarbons.

A Quantitative Comparison of Small Magellanic Cloud, Large Magellanic Cloud, and Milky Way Ultraviolet to Near-Infrared Extinction Curves. *Karl D. Gordon, Geoffrey C. Clayton, K. A. Misselt, Arlo U. Landolt, & Michael J. Wolff.* 594, 279 (2003)

WOLFIRE, M. G. The [C II] 158 Micron Line Deficit in Ultraluminous Infrared Galaxies Revisited. *M. L. Luhman, S. Satyapal, J. Fischer, M. G. Wolfire, E. Sturm, C. C. Dudley, D. Lutz, & R. Genzel.* 594, 758 (2003)

WOLFIRE, MARK G. Neutral Atomic Phases of the Interstellar Medium in the Galaxy. *Mark G. Wolfire, Christopher F. McKee, David Hollenbach, & A. G. G. M. Tielens.* 587, 278 (2003)

WOLFSON, RICHARD. Role of Magnetic Flux Distribution in Coronal Energy Storage. *Richard Wolfson.* 593, 1208 (2003)

WOLK, S. See MARKEVITCH, M., et al. *Chandra* Spectra of the Soft X-Ray Diffuse Background.

WOLK, S. J. *Chandra* X-Ray Observation of the Orion Nebula Cluster. I. Detection, Identification, and Determination of X-Ray Luminosities. *E. Flaccomio, F. Damiani, G. Micela, S. Sciortino, F. R. Harnden, Jr., S. S. Murray, & S. J. Wolk.* 582, 382 (2003)

Chandra X-Ray Observation of the Orion Nebula Cluster. II. Relationship between X-Ray Activity Indicators and Stellar Parameters. *E. Flaccomio, F. Damiani, G. Micela, S. Sciortino, F. R. Harnden, Jr., S. S. Murray, & S. J. Wolk.* 582, 398 (2003)

Chandra Observations of the Young Open Cluster NGC 2516. *F. Damiani, E. Flaccomio, G. Micela, S. Sciortino, F. R. Harnden, Jr., S. S. Murray, S. J. Wolk, & R. D. Jeffries.* 588, 1009 (2003)

WOLK, SCOTT J. *Chandra* Observations of Associates of η Carinae. I. Luminosities. *Nancy Remage Evans, Frederick D. Seward, Miriam I. Krauss, Takashi Isobe, Joy Nichols, Eric M. Schlegel, & Scott J. Wolk.* 589, 509 (2003)

WOLLACK, E. See BENNETT, C. L., et al. The *Microwave Anisotropy Probe* Mission.

See PAGE, L., et al. The Optical Design and Characterization of the *Microwave Anisotropy Probe*.

See JAROSIK, N., et al. Design, Implementation, and Testing of the *Microwave Anisotropy Probe* Radiometers.

See BENNETT, C. L., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Preliminary Maps and Basic Results.

See JAROSIK, N., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: On-Orbit Radiometer Characterization.

See PAGE, L., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Beam Profiles and Window Functions.

See BARNES, C., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Galactic Signal Contamination from Sidelobe Pickup.

See HINSHAW, G., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Data Processing Methods and Systematic Errors Limits.

See BENNETT, C. L., et al. First-Year *Wilkinson Microwave Anisotrophy Probe* (*WMAP*) Observations: Foreground Emission.

See KOMATSU, E., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Tests of Gaussianity.

See HINSHAW, G., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: The Angular Power Spectrum.

See KOGUT, A., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Temperature-Polarization Correlation.

See SPERGEL, D. N., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Determination of Cosmological Parameters.

See VERDE, L., et al. First-Year *Wilkinson Microwave Anisotrophy Probe* (*WMAP*) Observations: Parameter Estimation Methodology.

See PEIRIS, H. V., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Implications for Inflation.

See PAGE, L., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Interpretation of the TT and TE Angular Power Spectrum Peaks.

WOLSZCZAN, A. The Proper Motion, Age, and Initial Spin Period of PSR J0538+2817 in S147. *M. Kramer, A. G. Lyne, G. Hobbs, O. Löhmer, P. Carr, C. Jordan, & A. Wolszczan.* 593, L31 (2003)

WOLSZCZAN, ALEX. Geodetic Precession and Timing of the Relativistic Binary Pulsars PSR B1534+12 and PSR 1913+16. *Maciej Konacki, Alex Wolszczan, & Ingrid H. Stairs.* 589, 495 (2003)

Masses and Orbital Inclinations of Planets in the PSR B1257+12 System. *Maciej Konacki & Alex Wolszczan.* 591, L147 (2003)

WONG, SHINGKWONG. The Fate of Nonradiative Magnetized Accretion Flows: Magnetically Frustrated Convection. *Ue-Li Pen, Christopher D. Matzner, & Shingkwong Wong.* 596, L207 (2003)

WONG, SHINGKWONG. A Free, Fast, Simple, and Efficient Total Variation Diminishing Magnetohydrodynamic Code. *Ue-Li Pen, Phil Arras, & ShingKwong Wong.* 149, 447 (2003)

WONG, T. Disks around the Young Stars with TW Hydrae and HD 100546 Imaged at 3.4 Millimeters with the Australia Telescope Compact Array. *D. J. Wilner, T. L. Bourke, C. M. Wright, J. K. Jørgensen, E. F. van Dishoeck, & T. Wong.* 596, 597 (2003)

WONG, TONY. The BIMA Survey of Nearby Galaxies (BIMA SONG). II. The CO Data. *Tamara T. Helfer, Michele D. Thornley, Michael W. Regan, Tony Wong, Kartik Sheth, Stuart N. Vogel, Leo Blitz, & Douglas C.-J. Bock.* 145, 259 (2003)

WOO, HWA-SUNG. See COLLEY, WESLEY N., et al. Around-the-Clock Observations of the Q9057+561A,B Gravitationally Lensed Quasar. II. Results for the Second Observing Season.

WOO, JONG-HAK. The Independence of Active Galactic Nucleus Black Hole Mass and Radio Loudness: Erratum (ApJ, 581, L5 [2002]). *Jong-Hak Woo & C. Megan Urry.* 583, L47 (2003)

WOO, RICHARD. See HABBAL, SHADIA RIFAI, et al. On the Detection of the Signature of Silicon Nanoparticle Dust Grains in Coronal Holes.

WOOD, BRIAN E. Space Telescope Imaging Spectrograph Survey of Far-Ultraviolet Coronal Forbidden Lines in Late-Type Stars. *Thomas R. Ayres, Alexander Brown, Graham M. Harper, Rachel A. Osten, Jeffrey L. Linsky, Brian E. Wood, & Seth Redfield.* 583, 963 (2003)

A Search for Lyα Emission from the Astrosphere of 40 Eridani A. *Brian E. Wood, Jeffrey L. Linsky, Hans-Reinhard Mueller, & Gary P. Zank.* 591, 1210 (2003)

WOOD, K. Spatial Study with the Very Large Telescope of a New Resolved Edge-on Circumstellar Dust Disk Discovered at the Periphery of the ρ Ophiuchi Dark Cloud. *N. Grosso, J. Alves, K. Wood, R. Neuhäuser, T. Montmerle, & J. E. Bjorkman.* 586, 296 (2003)

WOOD, K. S. See SAZ PARKINSON, P. M., et al. Long-Term X-Ray Variability of Circinus X-1.

See TOURNEAR, D., et al. X-Ray Bursts in Neutron Star and Black Hole Binaries from Unconvetional Stellar Aspect Experiment and *Rossi X-Ray Timing Explorer* Data: Detections and Upper Limits.

WOOD, KENNETH. See KURASZKIEWICZ, JOANNA K., et al. The Far-Infrared Spectral Energy Distributions of X-Ray–selected Active Galaxies.

Two-dimensional Radiative Transfer in Protostellar Envelopes. I. Effects of Geometry on Class I Sources. *Barbara A. Whitney, Kenneth Wood, J. E. Bjorkman, & Michael J. Wolff.* 591, 1049 (2003)

High-Latitude H I in the Low Surface Brightness Galaxy UGC 7321. *L. D. Matthews & Kenneth Wood.* 593, 721 (2003)

Two-dimensional Radiative Transfer in Protostellar Envelopes. II. An Evolutionary Sequence. *Barbara A. Whitney, Kenneth Wood, J. E. Bjorkman, & Martin Cohen.* 598, 1079 (2003)

WOOD, M. A. See MUKADEM, ANJUM S., et al. Constraining the Evolution of ZZ Ceti.

WOOD, P. R. On the Origin of Long Secondary Periods in Semiregular Variables. *E. A. Olivier & P. R. Wood.* 584, 1035 (2003)

WOODGATE, BRUCE E. Emission-Line Galaxies in the Space Telescope Imaging Spectrograph Parallel Survey. I. Observations and Data Analysis. *Harry I. Teplitz, Nicholas R. Collins, Jonathan P. Gardner, Robert S. Hill, Sara R. Heap, Don J. Lindler, Jason Rhodes, & Bruce E. Woodgate.* 146, 209 (2003)

WOODS, P. See FEROCI, M., et al. The 2001 April Burst Activation of SGR 1900+14: X-Ray Afterglow Emission.

WOODS, P. M. A Major Soft Gamma Repeater–like Outburst and Rotation Glitch in the No-longer-so-anomalous X-Ray Pulsar 1E 2259+586. *V. M. Kaspi, F. P. Gavriil, P. M. Woods, J. B. Jensen, M. S. E. Roberts, & D. Chakrabarty.* 588, L93 (2003)

The 2001 April Burst Activation of SGR 1900+14: Pulse Properties and Torque. *P. M. Woods, C. Kouveliotou, E. Göğüş, M. H. Finger, M. Feroci,*

S. Mereghetti, J. H. Swank, K. Hurley, J. Heise, D. Smith, F. Frontera, C. Guidorzi, & C. Thompson. 596, 464 (2003)

See KOUVELIOTOU, C., et al. Unraveling the Cooling Trend of the Soft Gamma Repeater SGR 1627−41.

WOODS, PETER M. See PATEL, SANDEEP K., et al. *Chandra* Observations of the Anomalous X-Ray Pulsar 4U 0142+61.

See LENTERS, GEOFFREY T., et al. An Extended Burst Tail from SGR 1900+14 with a Thermal X-Ray Spectrum.

WOOD-VASEY, A. L. See KNOP, R. A., et al. New Constraints on Ω_M, Ω_Λ, and w from an Independent Set of 11 High-Redshift Supernovae Observed with the *Hubble Space Telescope*.

WOODWARD, C. E. See NESS, J.-U., et al. A *Chandra* Low Energy Transmission Grating Spectrometer Observation of V4743 Sagittarii: A Supersoft X-Ray Source and a Violently Variable Light Curve.

WOODWARD, CHARLES E. See DRAKE, JEREMY J., et al. The Extraordinary X-Ray Light Curve of the Classical Nova V1494 Aquilae (1999 No. 2) in Outburst: The Discovery of Pulsations and a "Burst."

WOOLSEY, D. See RUNYAN, M. C., et al. ACBAR: The Arcminute Cosmology Bolometer Array Receiver.

WOOSLEY, S. E. Relativistic Jets in Collapsars. *Weiqun Zhang, S. E. Woosley, & A. I. MacFadyen.* 586, 356 (2003)

Nucleosynthesis in Gamma-Ray Burst Accretion Disks. *Jason Pruet, S. E. Woosley, & R. D. Hoffman.* 586, 1254 (2003)

How Massive Single Stars End Their Life. *A. Heger, C. L. Fryer, S. E. Woosley, N. Langer, & D. H. Hartmann.* 591, 288 (2003)

See CREW, G. B., et al. *HETE-2* Localization and Observation of the Bright, X-Ray–rich Gamma-Ray Burst GRB 021211.

WOOTEN, ALWYN. Water Maser Survey toward Low-Mass Young Stellar Objects in the Northern Sky with the Nobeyama 45 Meter Telescope and the Very Large Array. *Ray S. Furuya, Yoshimi Kitamura, Alwyn Wooten, Mark J. Claussen, & Ryohei Kawabe.* 144, 71 (2003)

WORRALL, D. M. X-Ray Emission from the Hot Interstellar Medium and Southwest Radio Lobe of the Nearby Radio Galaxy Centaurus A. *R. P. Kraft, S. E. Vázquez, W. R. Forman, C. Jones, S. S. Murray, M. J. Hardcastle, D. M. Worrall, & E. Churazov.* 592, 129 (2003)

Radio and X-Ray Observations of the Jet in Centaurus A. *M. J. Hardcastle, D. M. Worrall, R. P. Kraft, W. R. Forman, C. Jones, & S. S. Murray.* 593, 169 (2003)

WORTHEY, GUY. The Magnesium–Velocity Dispersion Relation and the Genesis of Early-Type Galaxies. *Guy Worthey & Maela Collobert.* 586, 17 (2003)

WOSCHNAGG, K. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

WOŹNIAK, P. See SCHECHTER, PAUL L., et al. Microlensing of Relativistic Knots in the Quasar HE 1104−1805 AB.

WOŹNIAK, PRZEMYSŁAW. A Brown Dwarf Microlens Candidate from the Second Phase of the Optical Gravitational Lensing Experiment. *Martin C. Smith, Shude Mao, & Przemysław Woźniak.* 585, L65 (2003)

WREN, J. See SMITH, D. A., et al. ROTSE-III Observations of the Early Afterglow from GRB 030329.

WRIGHT, C. M. Disks around the Young Stars with TW Hydrae and HD 100546 Imaged at 3.4 Millimeters with the Australia Telescope Compact Array. *D. J. Wilner, T. L. Bourke, C. M. Wright, J. K. Jørgensen, E. F. van Dishoeck, & T. Wong.* 596, 597 (2003)

WRIGHT, E. L. See BENNETT, C. L., et al. The *Microwave Anisotropy Probe* Mission.

See PAGE, L., et al. The Optical Design and Characterization of the *Microwave Anisotropy Probe*.

See JAROSIK, N., et al. Design, Implementation, and Testing of the *Microwave Anisotropy Probe* Radiometers.

See BENNETT, C. L., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Preliminary Maps and Basic Results.

See JAROSIK, N., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: On-Orbit Radiometer Characterization.

See PAGE, L., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Beam Profiles and Window Functions.

See BARNES, C., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Galactic Signal Contamination from Sidelobe Pickup.

See HINSHAW, G., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Data Processing Methods and Systematic Errors Limits.

See BENNETT, C. L., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Foreground Emission.

See KOMATSU, E., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Tests of Gaussianity.

See HINSHAW, G., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: The Angular Power Spectrum.

See KOGUT, A., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Temperature-Polarization Correlation.

See SPERGEL, D. N., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Determination of Cosmological Parameters.

See VERDE, L., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Parameter Estimation Methodology.

See PEIRIS, H. V., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Implications for Inflation.

See PAGE, L., et al. First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Interpretation of the TT and TE Angular Power Spectrum Peaks.

WRIGHT, JASON T. Seven New Keck Planets Orbiting G and K Dwarfs. *R. Paul Butler, Geoffrey W. Marcy, Steven S. Vogt, Debra A. Fischer, Gregory W. Henry, Gregory Laughlin, & Jason T. Wright.* 582, 455 (2003)

See FISCHER, DEBRA A., et al. A Planetary Companion to HD 40979 and Additional Planets Orbiting HD 12661 and HD 38529.

WRIGHT, M. C. H. Magnetic Field Morphology of Orion IRc2 from 86 GHz SiO Maser Polarization Images. *R. L. Plambeck, M. C. H. Wright, & R. Rao.* 594, 911 (2003)

WRIGHT, MELVYN. NGC 7538S—a High-Mass Protostar with a Massive Rotating Disk. *Göran Sandell, Melvyn Wright, & James R. Forster.* 590, L45 (2003)

WRIGHT, MELVYN C. H. Interferometric Detection of Linear Polarization from Sagittarius A* at 230 GHz. *Geoffrey C. Bower, Melvyn C. H. Wright, Heino Falcke, & Donald C. Backer.* 588, 331 (2003)

WROBEL, J. M. The Nuclear Regions of the Seyfert Galaxy NGC 4151: Parsec-Scale H I Absorption and a Remarkable Radio Jet. *C. G. Mundell, J. M. Wrobel, A. Pedlar, & J. F. Gallimore.* 583, 192 (2003)

Interferometric Phase Calibration Sources in the Declination Range 0° to −30°. *Joshua N. Winn, Alok R. Patnaik, & J. M. Wrobel.* 145, 83 (2003)

WU, D. J. Coronal Plume Heating and Kinetic Dissipation of Kinetic Alfvén Waves. *D. J. Wu & C. Fang.* 596, 656 (2003)

WU, JINGWEN. Indications of Inflow Motions in Regions Forming Massive Stars. *Neal J. Evans II & Jingwen Wu.* 592, L79 (2003)

WU, KINWAH. *Chandra* X-Ray Observations of the Spiral Galaxy M81. *Douglas A. Swartz, Kajal K. Ghosh, Michael L. McCollough, Thomas G. Pannuti, Allyn F. Tennant, & Kinwah Wu.* 144, 213 (2003)

WU, S. T. Direct Detection of a Coronal Mass Ejection–Associated Shock in Large Angle and Spectrometric Coronagraph Experiment White-Light Images. *A. Vourlidas, S. T. Wu, A. H. Wang, P. Subramanian, & R. A. Howard.* 598, 1392 (2003)

WU, W. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

WU, X. F. GRB 030226 in a Density-Jump Medium. *Z. G. Dai & X. F. Wu.* 591, L21 (2003)

Gamma-Ray Bursts from Neutron Star Kicks. *Y. F. Huang, Z. G. Dai, T. Lu, K. S. Cheng, & X. F. Wu.* 594, 919 (2003)

WU, XIANG-PING. The Effect of Radiative Cooling on the Sunyaev-Zeldovich Cluster Counts and Angular Power Spectra: Analytic Treatment. *Yu-Ying Zhang & Xiang-Ping Wu.* 583, 529 (2003)

Can Radiative Cooling and Nongravitational Heating Explain Simultaneously the Global X-Ray Properties of Clusters and the Unresolved Cosmic X-Ray Background? *Yan-Jie Xue & Xiang-Ping Wu.* 584, 34 (2003)

Autocorrelation Function of the Soft X-Ray Background Produced by Warm-Hot Gas in Dark Halos. *Xiang-Ping Wu & Yan-Jie Xue.* 590, 8 (2003)

WU, Y. Planet Migration and Binary Companions: The Case of HD 80606b. *Y. Wu & N. Murray.* 589, 605 (2003)

WU, YANLING. The Effects of Relativistic Corrections on Cosmological Parameter Estimations from Sunyaev-Zel'dovich Effect Cluster Surveys. *Zuhui Fan & Yanling Wu.* 598, 713 (2003)

WUILLEUMIER, F. J. Measurements and Calculations of Photoionization Cross Sections of Multiply Charged Ions in Ground and Metastable States along the Isonuclear Series of Oxygen: O^{2+} to O^{4+}. *J.-P. Champeaux, J.-M. Bizau, D. Cubaynes, C. Blancard, S. Nahar, D. Hitz, J. Bruneau, & F. J. Wuilleumier.* 148, 583 (2003)

WURM, GERHARD. Experimental Study of Light Scattering by Large Dust Aggregates Consisting of Micron-Sized SiO_2 Monospheres. *Gerhard Wurm, Helena Relke, & Johann Dorschner.* 595, 891 (2003)

WURZ, P. Calcium Abundance in the Solar Wind. *P. Wurz, P. Bochsler, J. A. Paquette, & F. M. Ipavich.* 583, 489 (2003)

Elemental Abundances for the 1996 Streamer Belt. *M. Uzzo, Y.-K. Ko, J. C. Raymond, P. Wurz, & F. M. Ipavich.* 585, 1062 (2003)

WYATT, M. C. See HOLLAND, W. S., et al. Submillimeter Observations of an Asymmetric Dust Disk around Fomalhaut.

Resonant Trapping of Planetesimals by Planet Migration: Debris Disk Clumps and Vega's Similarity to the Solar System. *M. C. Wyatt.* 598, 1321 (2003)

WYITHE, J. STUART B. The Multiband Magnification Bias for Gravitational Lenses. *J. Stuart B. Wyithe, Joshua N. Winn, & David Rusin.* 583, 58 (2003)

Reionization of Hydrogen and Helium by Early Stars and Quasars. *J. Stuart B. Wyithe & Abraham Loeb.* 586, 693 (2003)

Was the Universe Reionized by Massive Metal-free Stars? *J. Stuart B. Wyithe & Abraham Loeb.* 588, L69 (2003)

Low-Frequency Gravitational Waves from Massive Black Hole Binaries: Predictions for *LISA* and Pulsar Timing Arrays. *J. Stuart B. Wyithe & Abraham Loeb.* 590, 691 (2003)

Self-regulated Growth of Supermassive Black Holes in Galaxies as the Origin of the Optical and X-Ray Luminosity Functions of Quasars. *J. Stuart B. Wyithe & Abraham Loeb.* 595, 614 (2003)

WYLD, H. W. Apparent Sizes and Spectral Line Profiles for Spherical and Disk Masers: Solutions to the Full Equations. *W. D. Watson & H. W. Wyld.* 598, 357 (2003)

WYROWSKI, F. Detection of HCN Direct *l*-Type Transitions Probing Hot Molecular Gas in the Proto–Planetary Nebula CRL 618. *S. Thorwirth, F. Wyrowski, P. Schilke, K. M. Menten, S. Brünken, H. S. P. Müller, & G. Winnewisser.* 586, 338 (2003)

Physical Conditions in the Proto–Planetary Nebula CRL 618 Derived from Observations of Vibrationally Excited HC_3N. *F. Wyrowski, P. Schilke, S. Thorwirth, K. M. Menten, & G. Winnewisser.* 586, 344 (2003)

Interactions between a Bright Young Stellar Object and the *Micourse Space Experiment* Infrared-Dark Cloud G79.3+0.3: An Early Stage of Triggered Star Formation? *R. O. Redman, P. A. Feldman, F. Wyrowski, S. Côté, S. J. Carey, & M. P. Egan.* 586, 1127 (2003)

WYRZYKOWSKI, L. See GARNAVICH, P. M., et al. Discovery of the Low-Redshift Optical Afterglow of GRB 011121 and Its Progenitor Supernova SN 2001ke.

See SCHECHTER, PAUL L., et al. Microlensing of Relativistic Knots in the Quasar HE 1104−1805 AB.

WYSE, ROSEMARY F. G. Galaxy Populations and Evolution in Clusters. IV. Deep H I Observations of Dwarf Elliptical Galaxies in the Virgo Cluster. *Christopher J. Conselice, Karen O'Neil, John S. Gallagher, & Rosemary F. G. Wyse.* 591, 167 (2003)

ω Centauri: Not a Recent Merger but Self-enriched? *Imants Platais, Rosemary F. G. Wyse, Leslie Hebb, Young-Wook Lee, & Soo-Chang Rey.* 591, L127 (2003)

XIE, BINGRONG. The Black Hole–Bulge Relationship in Quasars. *Gregory A. Shields, Karl Gebhardt, Sarah Salviander, Beverley J. Wills, Bingrong Xie, Michael S. Brotherton, Juntao Yuan, & Matthias Dietrich.* 583, 124 (2003)

The Baldwin Effect and Black Hole Accretion: A Spectral Principal Component Analysis of a Complete Quasar Sample. *Zhaohui Shang, Beverley J. Wills, Edward L. Robinson, D. Wills, Ari Laor, Bingrong Xie, & Juntao Yuan.* 586, 52 (2003)

XU, C. K. Models for Evolution of Dusty and E/S0 Galaxies Seen in Multiband Surveys. *C. K. Xu, C. J. Lonsdale, D. L. Shupe, A. Franceschini, C. Martin, & D. Schiminovich.* 587, 90 (2003)

Physical Conditions and Star Formation Activity in the Intragroup Medium of Stephan's Quintet. *C. K. Xu, N. Lu, J. J. Condon, M. Dopita, & R. J. Tuffs.* 595, 665 (2003)

XU, D. W. An Active Galactic Nucleus Sample with High X-Ray–to–Optical Flux Ratio from RASS. II. Optical Emission Line Properties of Seyfert 1 Type Active Galactic Nuclei. *D. W. Xu, Stefanie Komossa, J. Y. Wei, Y. Qian, & X. Z. Zheng.* 590, 73 (2003)

See MUKADEM, ANJUM S., et al. Constraining the Evolution of ZZ Ceti.

XU, R. X. Can the Age Discrepancies of Neutron Stars Be Circumvented by an Accretion-assisted Torque? *Y. Shi & R. X. Xu.* 596, L75 (2003)

XU, RENXIN. Solid Quark Stars? *Renxin Xu.* 596, L59 (2003)

XU, X. See ATKINS, R., et al. Observation of TeV Gamma Rays from the Crab Nebula with Milagro Using a New Background Rejection Technique.

XU, Y. High Spatial Resolution Observations of Pores and the Formation of a Rudimentary Penumbra. *G. Yang, Y. Xu, H. Wang, & C. Denker.* 597, 1190 (2003)

XU, YAN. Periodic Motion along a Solar Filament Initiated by a Subflare. *Ju Jing, Jeongwoo Lee, Thomas J. Spirock, Yan Xu, Haimin Wang, & G. S. Choe.* 584, L103 (2003)

XU, Z. Hα Line Polarization in the Major Flare of 2002 July 23. I. Observations and Data Analysis. *N. M. Firstova, Z. Xu, & C. Fang.* 595, L131 (2003)

XUE, L. See AMENOMORI, M., et al. Multi-TeV Gamma-Ray Flares from Markarian 421 in 2000 and 2001 Observed with the Tibet Air Shower Array.

XUE, YAN-JIE. Can Radiative Cooling and Nongravitational Heating Explain Simultaneously the Global X-Ray Properties of Clusters and the Unresolved Cosmic X-Ray Background? *Yan-Jie Xue & Xiang-Ping Wu.* 584, 34 (2003)

Autocorrelation Function of the Soft X-Ray Background Produced by Warm-Hot Gas in Dark Halos. *Xiang-Ping Wu & Yan-Jie Xue.* 590, 8 (2003)

YADAV, J. S. On the Origin of the Various Types of Radio Emission in GRS 1915+105. *S. V. Vadawale, A. R. Rao, S. Naik, J. S. Yadav, C. H. Ishwara-Chandra, A. Pramesh Rao, & G. G. Pooley.* 597, 1023 (2003)

YAGI, M. See SHIMASAKU, K., et al. Subaru Deep Survey. IV. Discovery of a Large-Scale Structure at Redshift $\simeq$5.

See MOBASHER, BAHRAM, et al. A Photometric and Spectroscopic Study of Dwarf and Giant Galaxies in the Coma Cluster. IV. The Luminosity Function.

YAGI, MASAFUMI. See OUCHI, MASAMI, et al. Subaru Deep Survey. II. Luminosity Functions and Clustering Properties of Lyα Emitters at $z = 4.86$ in the Subaru Deep Field.

See FUJITA, SHINOBU S., et al. The Hα Luminosity Function and Star Formation Rate at $z \approx 0.24$ Based on Subaru Deep Imaging Data.

See KOMIYAMA, YUTAKA, et al. Discovery of Latent Star Formation in the Extended H I Gas around the Local Group Dwarf Irregular Galaxy NGC 6822.

See HAMANA, TAKASHI, et al. Cosmic Shear Statistics in the Suprime-Cam 2.1 Square Degree Field: Constraints on Ω_m and Σ_8.

YAKOVLEV, DMITRY G. Thermal Structure and Cooling of Superfluid Neutron Stars with Accreted Magnetized Envelopes. *Alexander Y. Potekhin, Dmitry G. Yakovlev, Gilles Chabrier, & Oleg Y. Gnedin.* 594, 404 (2003)

YAMADA, S. Explosive Nucleosynthesis Associated with Formation of Jet-induced Gamma-Ray Bursts in Massive Stars. *S. Nagataki, A. Mizuta, S. Yamada, H. Takabe, & K. Sato.* 596, 401 (2003)

YAMADA, SANAE. See FUJITA, SHINOBU S., et al. The Hα Luminosity Function and Star Formation Rate at $z \approx 0.24$ Based on Subaru Deep Imaging Data.

YAMADA, SHOICHI. Anisotropic Neutrino Radiation in Rotational Core Collapse. *Kei Kotake, Shoichi Yamada, & Katsuhiko Sato.* 595, 304 (2003)

YAMADA, T. See SHIMASAKU, K., et al. Subaru Deep Survey. IV. Discovery of a Large-Scale Structure at Redshift $\simeq$5.

Cosmic Star Formation History Associated with Quasar Activity: An Approach Using the Black Hole–to–Bulge Mass Correlation. *Y. P. Wang, T. Yamada, & Y. Taniguchi.* 588, 113 (2003)

See KAWABATA, K. S., et al. On the Spectrum and Spectropolarimetry of Type Ic Hypernova SN 2003dh/GRB 030329.

YAMADA, TORU. The Topology of a Weak Lensing Field in the Neighborhood of MS 1054−03. *Jun'ichi Sato, Keiichi Umetsu, Toshifumi Futamase, & Toru Yamada.* 582, L67 (2003)

Optical Identification of the *ASCA* Medium Sensitivity Survey in the Northern Sky: Nature of Hard X-Ray–Selected Luminous Active Galactic Nuclei. *Masayuki Akiyama, Yoshihiro Ueda, Kouji Ohta, Tadayuki Takahashi, & Toru Yamada.* 148, 275 (2003)

See OHTA, KOUJI, et al. Optical Identification of the *ASCA* Lynx Deep Survey: An Association of Quasi-Stellar Objects and a Supercluster at $z = 1.3$?

YAMAMOTO, H. High-Latitude Molecular Clouds in an H I Filament toward the MBM 53, 54, and 55 Complex: Existence of an H_2 Cloud with Low

CO Intensity. *H. Yamamoto, T. Onishi, A. Mizuno, & Y. Fukui.* 592, 217 (2003)

YAMAMOTO, KAZUHIRO. Optimal Weighting Scheme in Redshift-Space Power Spectrum Analysis and a Prospect for Measuring the Cosmic Equation of State. *Kazuhiro Yamamoto.* 595, 577 (2003)

YAMAMOTO, SATOSHI. See KAMEGAI, KAZUHISA, et al. Distribution of the C I Emission in the ρ Ophiuchi Dark Cloud.

Mapping Observations of DNC and $HN^{13}C$ in Dark Cloud Cores. *Tomoya Hirota, Masafumi Ikeda, & Satoshi Yamamoto.* 594, 859 (2003)

YAMAMOTO, TETSUO. Are TiC Grains a Carrier of the 21 Micron Emission Band Observed around Post–Asymptotic Giant Branch Objects? *Takeshi Chigai, Tetsuo Yamamoto, Chihiro Kaito, & Yuki Kimura.* 587, 771 (2003)

YAMAMOTO, TETSUYA T. Analysis of the Temperature and Emission Measure of Solar Coronal Arcades and Test of a Scaling Law of Flare/Arcade Loop Length: Erratum (ApJ, 579, L45 [2002]). *Tetsuya T. Yamamoto, Daikou Shiota, Takuma Sakajiri, Sachiko Akiyama, Hiroaki Isobe, & Kazunari Shibata.* 592, L107 (2003) (Orig. paper in 579, L45 (2002))

YAMAMOTO, Y. See AMENOMORI, M., et al. Multi-TeV Gamma-Ray Flares from Markarian 421 in 2000 and 2001 Observed with the Tibet Air Shower Array.

YAMAOKA, H. See HJORTH, J., et al. Very High Column Density and Small Reddening toward GRB 020124 at $z = 3.20$.

See TORII, K., et al. The Earliest Optical Observations of GRB 30329.

Earliest Detection of the Optical Afterglow of GRB 030329 and Its Variability. *R. Sato, N. Kawai, M. Suzuki, Y. Yatsu, J. Kataoka, R. Takagi, K. Yanagisawa, & H. Yamaoka.* 599, L9 (2003)

YAMASAKI, N. Y. *Chandra* Observation of the Core of the Galaxy Cluster AWM 7. *T. Furusho, N. Y. Yamasaki, & T. Ohashi.* 596, 181 (2003)

YAMASHITA, K. Spatial Distributions of A3558 in the Core Region of the Shapley Supercluster. *F. Akimoto, K. Kondou, A. Furuzawa, Y. Tawara, & K. Yamashita.* 596, 170 (2003)

YAMASHITA, TAKUYA. K3-50A: An Ultracompact H II Region Ionized by a Massive Stellar Cluster. *Yoshiko K. Okamoto, Hirokazu Kataza, Takuya Yamashita, Takashi Miyata, Shigeyuki Sako, Shinya Takubo, Mitsuhiko Honda, & Takashi Onaka.* 584, 368 (2003)

Detection of Crystalline Silicates around the T Tauri Star Hen 3-600A. *Mitsuhiko Honda, Hirokazu Kataza, Yoshiko K. Okamoto, Takashi Miyata, Takuya Yamashita, Shigeyuki Sako, Shinya Takubo, & Takashi Onaka.* 585, L59 (2003)

See PYO, TAE-SOO, et al. Adaptive Optics Spectroscopy of the [Fe II] Outflow from DG Tauri.

YAMAUCHI, M. See CREW, G. B., et al. *HETE-2* Localization and Observation of the Bright, X-Ray–rich Gamma-Ray Burst GRB 021211.

YAMAUCHI, SHIGEO. Diffuse Hard X-Ray Sources Discovered with the *ASCA* Galactic Plane Survey. *Aya Bamba, Masaru Ueno, Katsuji Koyama, & Shigeo Yamauchi.* 589, 253 (2003)

YAMAZAKI, RYO. Small-Scale Structure of the SN 1006 Shock with *Chandra* Observations. *Aya Bamba, Ryo Yamazaki, Masaru Ueno, & Katsuji Koyama.* 589, 827 (2003)

Delayed Flashes from Counterjets of Gamma-Ray Bursts. *Ryo Yamazaki, Kunihito Ioka, & Takashi Nakamura.* 591, 283 (2003)

Cosmological X-Ray Flashes in the Off-Axis Jet Model. *Ryo Yamazaki, Kunihito Ioka, & Takashi Nakamura.* 593, 941 (2003)

An Off-Axis Jet Model for GRB 980425 and Low-Energy Gamma-Ray Bursts. *Ryo Yamazaki, Daisuke Yonetoku, & Takashi Nakamura.* 594, L79 (2003)

YAN, H. *Hubble Space Telescope* Images of Submillimeter Sources: Large Irregular Galaxies at High Redshift. *S. C. Chapman, R. Windhorst, S. Odewahn, H. Yan, & C. Conselice.* 599, 92 (2003)

YAN, HAOJING. The Infrared Counterparts of the Optically Unidentified Chandra Deep Field–South 1 Ms Sources. *Haojing Yan, Rogier A. Windhorst, Huub J. A. Röttgering, Seth H. Cohen, Stephen C. Odewahn, Scott C. Chapman, & William C. Keel.* 585, 67 (2003)

Searching for $z \simeq 6$ Objects with the *Hubble Space Telescope* Advanced Camera for Surveys: Preliminary Analysis of a Deep Parallel Field. *Haojing Yan, Rogier A. Windhorst, & Seth H. Cohen.* 585, L93 (2003)

YAN, HUIRONG. Grain Acceleration by Magnetohydrodynamic Turbulence: Gyroresonance Mechanism. *Huirong Yan & A. Lazarian.* 592, L33 (2003)

YAN, LIN. *Hubble Space Telescope* WFPC2 Morphologies of *K*-selected Extremely Red Galaxies. *Lin Yan & David Thompson.* 586, 765 (2003)

YAN, R. See MADGWICK, DARREN S., et al. The DEEP2 Galaxy Redshift Survey: Spectral Classification of Galaxies at $z \sim 1$.

YAN, RENBIN. Constraining Evolution in the Halo Model Using Galaxy Redshift Surveys. *Renbin Yan, Darren S. Madgwick, & Martin White.* 598, 848 (2003)

YANAGISAWA, K. Earliest Detection of the Optical Afterglow of GRB 030329 and Its Variability. *R. Sato, N. Kawai, M. Suzuki, Y. Yatsu, J. Kataoka, R. Takagi, K. Yanagisawa, & H. Yamaoka.* 599, L9 (2003)

YANAGISAWA, KENSHI. See SATO, BUN'EI, et al. A Planetary Companion to the G-Type Giant Star HD 104985.

YANAGISAWA, T. See SUMI, T., et al. Microlensing Optical Depth toward the Galactic Bulge from Microlensing Observations during 2000 with Difference Image Analysis.

YANAGITA, S. Galactic Gamma-Ray Halo of the Nearby Starbust Galaxy NGC 253. *C. Itoh, R. Enomoto, S. Yanagita, T. Yoshida, & T. G. Tsuru.* 584, L65 (2003)

See ENOMOTO, R., et al. Search for TeV Gamma Rays from SN 1987A in 2001.

Constraints on Cold Dark Matter in the Gamma-Ray Halo of NGC 253. *R. Enomoto, T. Yoshida, S. Yanagita, & C. Itoh.* 596, 216 (2003)

YANG, G. High Spatial Resolution Observations of Pores and the Formation of a Rudimentary Penumbra. *G. Yang, Y. Xu, H. Wang, & C. Denker.* 597, 1190 (2003)

YANG, JI. See JIANG, ZHIBO, et al. A Near-Infrared Study of the Star-Forming Region S269.

YANG, SHUHUA. The Critical Rotation of Strange Stars and Rapidly Rotating Pulsars. *Xiaoping Zheng, Shuhua Yang, & Jiarong Li.* 585, L135 (2003)

YANG, STEPHENSON. A Planetary Companion to γ Cephei A. *Artie P. Hatzes, William D. Cochran, Michael Endl, Barbara McArthur, Diane B. Paulson, Gordon A. H. Walker, Bruce Campbell, & Stephenson Yang.* 599, 1383 (2003)

YANG, T. See ATKINS, R., et al. The High-Energy Gamma-Ray Fluence and Energy Spectrum of GRB 970417A from Observations with Milagrito.

See FALCONE, A., et al. Observation of GeV Solar Energetic Particles from the 1997 November 6 Event Using Milagrito.

YANG, X. C. See AMENOMORI, M., et al. Multi-TeV Gamma-Ray Flares from Markarian 421 in 2000 and 2001 Observed with the Tibet Air Shower Array.

YANG, Y. The Changing Active Galactic Nucleus Population. *A. T. Steffen, A. J. Barger, L. L. Cowie, R. F. Mushotzky, & Y. Yang.* 596, L23 (2003)

YANG, YUXUAN. Imaging Large-Scale Structure in the X-Ray Sky. *Yuxuan Yang, R. F. Mushotzky, A. J. Barger, L. L. Cowie, D. B. Sanders, & A. T. Steffen.* 585, L85 (2003)

YANNY, BRIAN. Sloan Digital Sky Survey Catalog of Stars in the Draco Dwarf Spheroidal Galaxy. *Heather A. Rave, Chongshan Zhao, Heidi Jo Newberg, Brian Yanny, Donald P. Schneider, J. Brinkman, & Don Q. Lamb.* 145, 245 (2003)

See SZALAY, ALEXANDER S., et al. Karhunen-Loève Estimation of the Power Spectrum Parameters from the Angular Distribution of Galaxies in Early Sloan Digital Sky Survey Data.

See BUDAVÁRI, TAMÁS, et al. Angular Clustering with Photometric Redshifts in the Sloan Digital Sky Survey: Bimodality in the Clustering Properties of Galaxies.

See NEWBERG, HEIDI JO, et al. Sagittarius Tidal Debris 90 kiloparsecs from the Galactic Center.

YANO, H. Discovery of Dust Trail of *STARDUST* Comet Sample Return Mission Target: 81P/Wild 2. *M. Ishiguro, S. M. Kwon, Y. Sarugaku, S. Hasegawa, F. Usui, S. Nishiura, Y. Nakada, & H. Yano.* 589, L101 (2003)

YAO, GUO-ZHENG. Magnetic Coupling of a Rotating Black Hole with Its Surrounding Accretion Disk. *Ding-Xiong Wang, Ren-Yi Ma, Wei-Hua Lei, & Guo-Zheng Yao.* 595, 109 (2003)

YAO, LIHONG. CO Molecular Gas in Infrared-luminous Galaxies. *Lihong Yao, E. R. Seaquist, Nario Kuno, & Loretta Dunne.* 588, 771 (2003)

CO Molecular Gas in Infrared Luminous Galaxies: Erratum (ApJ, 588, 771 [2003]). *Lihong Yao, E. R. Seaquist, Nario Kuno, & Loretta Dunne.* 597, 1271 (2003) (Orig. paper in 588, 771 (2003))

YAO, YANGSEN. A New Method to Resolve X-Ray Halos around Point Sources with *Chandra* Data and Its Application to Cygnus X-1. *Yangsen Yao, Shuang Nan Zhang, Xiaoling Zhang, & Yuxin Feng.* 594, L43 (2003)

YAO, YONGQUIANG. See JIANG, ZHIBO, et al. A Near-Infrared Study of the Star-Forming Region S269.

YAQOOB, T. The Kinematics and Physical Conditions of the Ionized Gas in Markarian 509. II. STIS Echelle Observations. *S. B. Kraemer, D. M.*

Crenshaw, T. Yaqoob, B. McKernan, J. R. Gabel, I. M. George, T. J. Turner, & J. P. Dunn. 582, 125 (2003)

See WANG, J., et al. A Puzzling X-Ray Source Found in the *Chandra* Deep Field–South.

See CRENSHAW, D. M., et al. Simultaneous Ultraviolet and X-Ray Spectroscopy of the Seyfert 1 Galaxy NGC 5548. I. Physical Conditions in the Ultraviolet Absorbers.

YAQOOB, TAHIR. The Kinematics and Physical Conditions of the Ionized Gas in Markarian 509. I. *Chandra* High Energy Grating Spectroscopy. *Tahir Yaqoob, Barry McKernan, Steven B. Kraemer, D. Michael Crenshaw, Jack R. Gabel, Ian M. George, & T. Jane Turner.* 582, 105 (2003)

The Kinematics and Physical Conditions of the Ionized Gas in NGC 4593 from *Chandra* High-Energy Grating Spectroscopy. *Barry McKernan, Tahir Yaqoob, Ian M. George, & T. J. Turner.* 593, 142 (2003)

Fe XXV and Fe XXVI Diagnostics of the Black Hole and Accretion Disk in Active Galaxies: *Chandra* Time-resolved Grating Spectroscopy of NGC 7314. *Tahir Yaqoob, Ian M. George, Timothy R. Kallman, Urmila Padmanabhan, Kimberly A. Weaver, & T. Jane Turner.* 596, 85 (2003)

A Warm/Hot Intergalactic Medium toward 3C 120? *Barry McKernan, Tahir Yaqoob, Richard Mushotzky, Ian M. George, & T. Jane Turner.* 598, L83 (2003)

YASHIRO, S. A New Method for Estimating Widths, Velocities, and Source Location of Halo Coronal Mass Ejections. *G. Michalek, N. Gopalswamy, & S. Yashiro.* 584, 472 (2003)

Prominence Eruptions and Coronal Mass Ejection: A Statistical Study using Microwave Observations. *N. Gopalswamy, M. Shimojo, W. Lu, S. Yashiro, K. Shibasaki, & R. A. Howard.* 586, 562 (2003)

Coronal Mass Ejections and Solar Polarity Reversal. *N. Gopalswamy, A. Lara, S. Yashiro, & R. A. Howard.* 598, L63 (2003)

YASUDA, N. See SHIMASAKU, K., et al. Subaru Deep Survey. IV. Discovery of a Large-Scale Structure at Redshift $\simeq$5.

See KNOP, R. A., et al. New Constraints on Ω_M, Ω_Λ, and w from an Independent Set of 11 High-Redshift Supernovae Observed with the *Hubble Space Telescope*.

YASUDA, NAOKI. See OUCHI, MASAMI, et al. Subaru Deep Survey. II. Luminosity Functions and Clustering Properties of Lyα Emitters at $z = 4.86$ in the Subaru Deep Field.

See KOMIYAMA, YUTAKA, et al. Discovery of Latent Star Formation in the Extended H I Gas around the Local Group Dwarf Irregular Galaxy NGC 6822.

See HAMANA, TAKASHI, et al. Cosmic Shear Statistics in the Suprime-Cam 2.1 Square Degree Field: Constraints on Ω_m and Σ_8.

YATSU, Y. Earliest Detection of the Optical Afterglow of GRB 030329 and Its Variability. *R. Sato, N. Kawai, M. Suzuki, Y. Yatsu, J. Kataoka, R. Takagi, K. Yanagisawa, & H. Yamaoka.* 599, L9 (2003)

YAUN, QIRONG. Multicolor Photometry of the Galaxies in A2255 by the Beijing-Arizona-Taiwan-Connecticut Survey and Sloan Digital Sky Survey. *Qirong Yaun, Xu Zhou, & Zhaoji Jiang.* 149, 53 (2003)

YE, Z. H. See AMENOMORI, M., et al. Multi-TeV Gamma-Ray Flares from Markarian 421 in 2000 and 2001 Observed with the Tibet Air Shower Array.

YEE, H. K. C. The EXPLORE Project. I. A Deep Search for Transiting Extrasolar Planets. *G. Mallén-Ornelas, S. Seager, H. K. C. Yee, D. Minniti, Michael D. Gladders, G. M. Mallén-Fullerton, & T. M. Brown.* 582, 1123 (2003)

Correlations of Richness and Global Properties in Galaxy Clusters. *H. K. C. Yee & E. Ellingson.* 585, 215 (2003)

The Incidence of Strong-Lensing Clusters in the Red-Sequence Cluster Survey. *Michael D. Gladders, Henk Hoekstra, H. K. C. Yee, Patrick B. Hall, & L. Felipe Barrientos.* 593, 48 (2003)

YEH, LI-CHEN. On the Fate of Close-in Extrasolar Planets. *Ing-Guey Jiang, Wing-Huen Ip, & Li-Chen Yeh.* 582, 449 (2003)

YENTIS, D. The *ROSAT* All-Sky Survey: A Catalog of Clusters of Galaxies in a Region of 1 Steradian around the South Galactic Pole: Erratum (ApJS, 140, 239 [2002]). *R. Cruddace, W. Voges, H. Böhringer, C. Collins, D. Yentis, & H. MacGillivray.* 144, 299 (2003) (Orig. paper in 140, 239 (2002))

YI, ENYI. See MEDVEDEV, IVAN, et al. The Millimeter- and Submillimeter-Wave Spectrum of the Trans-Trans Conformer of Diethyl Ether ($C_2H_5OC_2H_5$).

YI, SUKYOUNG K. Uncertainties of Synthetic Integrated Colors as Age Indicators. *Sukyoung K. Yi.* 582, 202 (2003)

The Y^2 Stellar Evolutionary Tracks. *Sukyoung K. Yi, Yong-Cheol Kim, & Pierre Demarque.* 144, 259 (2003)

YIN, Q. F. Radio Constraints on the Starburst Ages of Two Wolf-Rayet Galaxies. *Q. F. Yin, J. H. Huang, & W. Zheng.* 597, 274 (2003)

YOCK, P. C. M. See SUMI, T., et al. Microlensing Optical Depth toward the Galactic Bulge from Microlensing Observations during 2000 with Difference Image Analysis.

YODH, G. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

YODH, G. B. See ATKINS, R., et al. The High-Energy Gamma-Ray Fluence and Energy Spectrum of GRB 970417A from Observations with Milagrito.

See FALCONE, A., et al. Observation of GeV Solar Energetic Particles from the 1997 November 6 Event Using Milagrito.

See ATKINS, R., et al. Observation of TeV Gamma Rays from the Crab Nebula with Milagro Using a New Background Rejection Technique.

YOKOGAWA, SOZO. High Angular Resolution, Sensitive CS $J = 2$–1 and $J = 3$–2 Imaging of the Protostar L1551 NE: Evidence for Outflow-Triggered Star Formation? *Sozo Yokogawa, Yoshimi Kitamura, Munetake Momose, & Ryohei Kawabe.* 595, 266 (2003)

YOKOYAMA, T. Radio and Hard X-Ray Images of High-Energy Electrons in an X-Class Solar Flare. *S. M. White, S. Krucker, K. Shibasaki, T. Yokoyama, M. Shimojo, & M. R. Kundu.* 595, L111 (2003)

YOKOYAMA, TAKAAKI. Magnetic Reconnection Triggered by the Parker Instability in the Galaxy: Two-Dimensional Numerical Magnetohydrodynamic Simulations and Application to the Origin of X-Ray Gas in the Galactic Halo. *Syuniti Tanuma, Takaaki Yokoyama, Takahiro Kudoh, & Kazunari Shibata.* 582, 215 (2003)

Evolution of Conjugate Footpoints inside Flare Ribbons during a Great Two-Ribbon Flare on 2001 April 10. *Ayumi Asai, Takako T. Ishii, Hiroki Kurokawa, Takaaki Yokoyama, & Masumi Shimojo.* 586, 624 (2003)

Magnetohydrodynamic Numerical Simulations of Solar X-Ray Jets Based on the Magnetic Reconnection Model That Includes Chromospheric Evaporation. *Takehiro Miyagoshi & Takaaki Yokoyama.* 593, L133 (2003)

YONEHARA, ATSUNORI. A New Method to Map Flares in Quasars. *Atsunori Yonehara, Shin Mineshige, Yoh Takei, George Chartas, & Edwin L. Turner.* 594, 107 (2003)

YONETOKU, D. The Quiescent Counterpart of the Soft Gamma-Ray Repeater SGR 0526−66. *S. R. Kulkarni, D. L. Kaplan, H. L. Marshall, D. A. Frail, T. Murakami, & D. Yonetoku.* 585, 948 (2003)

YONETOKU, DAISUKE. An Off-Axis Jet Model for GRB 980425 and Low-Energy Gamma-Ray Bursts. *Ryo Yamazaki, Daisuke Yonetoku, & Takashi Nakamura.* 594, L79 (2003)

YONG, DAVID. Magnesium Isotopic Abundance Ratios in Cool Stars. *David Yong, David L. Lambert, & Inese I. Ivans.* 599, 1357 (2003)

YOON, P. H. A Model of Zebra Emission in Solar Type IV Radio Bursts. *J. LaBelle, R. A. Treumann, P. H. Yoon, & M. Karlicky.* 593, 1195 (2003)

YORK, D. G. See THORBURN, J. A., et al. Some Diffuse Interstellar Bands Related to Interstellar C_2 Molecules.

See WAKKER, B. P., et al. The *Far Ultraviolet Spectroscopic Explorer* Survey of O VI Absorption in and near the Galaxy.

YORK, DON G. See EISENSTEIN, DANIEL J., et al. Average Spectra of Massive Galaxies in the Sloan Digital Sky Survey.

YORK, DONALD G. Observations of C_3 In Translucent Sight Lines. *Takeshi Oka, Julie A. Thorburn, Benjamin J. McCall, Scott D. Friedman, Lewis M. Hobbs, Paule Sonnentrucker, Daniel E. Welty, & Donald G. York.* 582, 823 (2003)

See GOMEZ, PERCY L., et al. Galaxy Star Formation as a Function of Environment in the Early Data Release of the Sloan Digital Sky Survey.

See BAHCALL, NETA A., et al. The Cluster Mass Function from Early Sloan Digital Sky Survey Data: Cosmological Implications.

See HOGG, DAVID W., et al. The Overdensities of Galaxy Environments as a Function of Luminosity and Color.

See GLAZEBROOK, KARL, et al. The Sloan Digital Sky Survey: The Cosmic Spectrum and Star Formation History.

See SZALAY, ALEXANDER S., et al. Karhunen-Loève Estimation of the Power Spectrum Parameters from the Angular Distribution of Galaxies in Early Sloan Digital Sky Survey Data.

VLT+UVES Spectroscopy of the Ca II Low-Ionization Broad Absorption Line Quasar SDSS J030000.56+004828.0. *Patrick B. Hall, Damien Hutsmékers, Scott F. Anderson, J. Brinkmann, Xiaohui Fan, Donald P. Schneider, & Donald G. York.* 593, 189 (2003)

See BUDAVÁRI, TAMÁS, et al. Angular Clustering with Photometric Redshifts in the Sloan Digital Sky Survey: Bimodality in the Clustering Properties of Galaxies.

Abundances and Physical Conditions in the Interstellar Gas toward HD 185418. *Paule Sonnentrucker, Scott D. Friedman, Daniel E. Welty, Donald G. York, & Theodore P. Snow.* 596, 350 (2003)

See NEWBERG, HEIDI JO, et al. Sagittarius Tidal Debris 90 kiloparsecs from the Galactic Center.

YORKE, HAROLD W. Massive Stars and the Energy Balance of the Interstellar Medium. I. The Impact of an Isolated 60 $M_\odot$ Star. *Tim Freyer, Gerhard Hensler, & Harold W. Yorke.* 594, 888 (2003)

YOSHIDA, A. See KAWABATA, K. S., et al. On the Spectrum and Spectropolarimetry of Type Ic Hypernova SN 2003dh/GRB 030329.

See URATA, Y., et al. Multiband Optical Follow-up Observations of GRB 020813 at the Kiso and Bisei Observatories.

See HJORTH, J., et al. Very High Column Density and Small Reddening toward GRB 020124 at $z = 3.20$.

See CREW, G. B., et al. *HETE-2* Localization and Observation of the Bright, X-Ray–rich Gamma-Ray Burst GRB 021211.

YOSHIDA, MICHITOSHI. See OHYAMA, YOUICHI, et al. On the Origin of Lyα Blobs at High Redshift: Kinematic Evidence of a Hyperwind Galaxy at $z = 3.1$.

See SATO, BUN'EI, et al. A Planetary Companion to the G-Type Giant Star HD 104985.

YOSHIDA, NAOKI. Early Structure Formation and Reionization in a Warm Dark Matter Cosmology. *Naoki Yoshida, Aaron Sokasian, Lars Hernquist, & Volker Springel.* 591, L1 (2003)

Simulations of Early Structure Formation: Primordial Gas Clouds. *Naoki Yoshida, Tom Abel, Lars Hernquist, & Naoshi Sugiyama.* 592, 645 (2003)

The First Supernova Explosions in the Universe. *Volker Bromm, Naoki Yoshida, & Lars Hernquist.* 596, L135 (2003)

Early Structure Formation and Reionization in a Cosmological Model with a Running Primordial Power Spectrum. *Naoki Yoshida, Aaron Sokasian, Lars Hernquist, & Volker Springel.* 598, 73 (2003)

YOSHIDA, S. See TORII, K., et al. The Earliest Optical Observations of GRB 30329.

YOSHIDA, SHIJUN. r-Modes of Neutron Stars with Superfluid Cores. *Umin Lee & Shijun Yoshida.* 586, 403 (2003)

YOSHIDA, T. Galactic Gamma-Ray Halo of the Nearby Starbust Galaxy NGC 253. *C. Itoh, R. Enomoto, S. Yanagita, T. Yoshida, & T. G. Tsuru.* 584, L65 (2003)

See ENOMOTO, R., et al. Search for TeV Gamma Rays from SN 1987A in 2001.

Constraints on Cold Dark Matter in the Gamma-Ray Halo of NGC 253. *R. Enomoto, T. Yoshida, S. Yanagita, & C. Itoh.* 596, 216 (2003)

YOSHIDA, TSUYOSHI. See NAGATA, SHIN'ICHI, et al. Spatial and Temporal Properties of Hot and Cool Coronal Loops.

YOSHIGUCHI, HIROYUKI. Small-Scale Clustering in Isotropic Arrival Distribution of Ultra–High-Energy Cosmic Rays and Implications for Their Source Candidates. *Hiroyuki Yoshiguchi, Shigehiro Nagataki, Sin-ya Tsubaki, & Katsuhiko Sato.* 586, 1211 (2003)

Arrival Distribution of Ultra–High-Energy Cosmic Rays: Prospects for the Future. *Hiroyuki Yoshiguchi, Shigehiro Nagataki, & Katsuhiko Sato.* 592, 311 (2003)

A New Method for Calculating Arrival Distribution of Ultra–High-Energy Cosmic Rays above 10^{19} eV with Modifications by the Galactic Magnetic Field. *Hiroyuki Yoshiguchi, Shigehiro Nagataki, & Katsuhiko Sato.* 596, 1044 (2003)

YOSHII, YUZURU. Excavation of the First Stars. *Toshikazu Shigeyama, Takuji Tsujimoto, & Yuzuru Yoshii.* 586, L57 (2003)

The Optical/Near-Infrared Light Curves of SN 2002ap for the First 140 Days after Discovery. *Yuzuru Yoshii, Hiroyuki Tomita, Yukiyasu Kobayashi, Jinsong Deng, Keiichi Maeda, Ken'ichi Nomoto, Paolo A. Mazzali, Hideyuki Umeda, Tsutomu Aoki, Mamoru Doi, Keigo Enya, Takeo Minezaki, Masahiro Suganuma, & Bruce A. Peterson.* 592, 467 (2003)

A Two-Component Model for the Light Curves of Hypernovae. *Keiichi Maeda, Paolo A. Mazzali, Jingsong Deng, Ken'ichi Nomoto, Yuzuru Yoshii, Hiroyuki Tomita, & Yukiyasu Kobayashi.* 593, 931 (2003)

The Mass Spectrum of Metal-free Stars Resulting from Photodissociation Feedback: A Scenario for the Formation of Low-Mass Population III Stars. *Kazuyuki Omukai & Yuzuru Yoshii.* 599, 746 (2003)

YOSHIKAWA, KOHJI. The Luminosity Function of *IRAS* Point Source Catalog Redshift Survey Galaxies. *Tsutomu T. Takeuchi, Kohji Yoshikawa, & Takako T. Ishii.* 587, L89 (2003)

Cluster Morphology as a Test of Different Cosmological Models. *Tamon Suwa, Asao Habe, Kohji Yoshikawa, & Takashi Okamoto.* 588, 7 (2003)

Spatial and Dynamical Biases in Velocity Statistics of Galaxies. *Kohji Yoshikawa, Y. P. Jing, & Gerhard Börner.* 590, 654 (2003)

Angular Momentum Distribution of Hot Gas and Implications for Disk Galaxy Formation. *D. N. Chen, Y. P. Jing, & Kohji Yoshikawa.* 597, 35 (2003)

YOSHIKOSHI, T. See ENOMOTO, R., et al. Search for TeV Gamma Rays from SN 1987A in 2001.

YOSHIMORI, M. See WATANABE, K., et al. Solar Neutron Event in Association with a Large Solar Flare on 2000 November 24.

YOST, S. A. See PRICE, P. A., et al. GRB 010921: Strong Limits on an Underlying Supernova from the *Hubble Space Telescope*.

See FOX, D. W., et al. Discovery of Early Optical Emission from GRB 021211.

See GALAMA, T. J., et al. *Hubble Space Telescope* and Ground-based Optical and Ultraviolet Observations of GRB 010222.

See PRICE, P. A., et al. Discovery of GRB 020405 and Its Late Red Bump.

See FRAIL, D. A., et al. The Broadband Afterglow of GRB 980703.

A Study of the Afterglows of Four Gamma-Ray Bursts: Constraining the Explosion and Fireball Model. *S. A. Yost, F. A. Harrison, R. Sari, & D. A. Frail.* 597, 459 (2003)

YOU, J. H. Does the Iron Kα Line of Active Galactic Nuclei Arise from the Cerenkov Line-like Radiation? *J. H. You, D. B. Liu, W. P. Chen, L. Chen, & S. N. Zhang.* 599, 164 (2003)

YOUNG, ANDREW J. Accretion onto the Supermassive Black Hole in M87. *Tiziana Di Matteo, Steven W. Allen, Andrew C. Fabian, Andrew S. Wilson, & Andrew J. Young.* 582, 133 (2003)

YOUNG, CHADWICK H. Tracing the Mass during Low-Mass Star Formation. IV. Observations and Modeling of the Submillimeter Continuum Emission from Class I Protostars. *Chadwick H. Young, Yancy L. Shirley, Neal J. Evans II, & Jonathan M. C. Rawlings.* 145, 111 (2003)

YOUNG, J. S. CO Luminosity Functions for Far-Infrared– and B-Band–selected Galaxies and the First Estimate for $\Omega_{\rm H\,I+H_2}$. *Dusan Keres, Min S. Yun, & J. S. Young.* 582, 659 (2003)

YOUNG, K. H. Variability of Sagittarius A*: Flares at 1 Millimeter. *Jun-Hui Zhao, K. H. Young, R. M. Herrnstein, P. T. P. Ho, T. Tsutsumi, K. Y. Lo, W. M. Goss, & G. C. Bower.* 586, L29 (2003)

YOUNG, KAISA E. A CS $J = 5 \rightarrow 4$ Mapping Survey Toward High-Mass Star-Forming Cores Associated with Water Masers. *Yancy L. Shirley, Neal J. Evans II, Kaisa E. Young, Claudia Knez, & Daniel T. Jaffe.* 149, 375 (2003)

YOUNG, L. M. Star Formation and the Interstellar Medium in Four Dwarf Irregular Galaxies. *L. M. Young, L. van Zee, K. Y. Lo, R. C. Dohm-Palmer, & Michelle E. Beierle.* 592, 111 (2003)

YOUNG, P. A. The Salty Scrambled Egg: Detection of NaCl toward CRL 2688. *J. L. Highberger, K. J. Thomson, P. A. Young, D. Arnett, & L. M. Ziurys.* 593, 393 (2003)

YOUNG, P. R. CHIANTI—An Atomic Database for Emission Lines. IV. Proton Rates and Other Improvements. *P. R. Young, G. del Zanna, E. Landi, K. P. Dere, H. E. Mason, & M. Landini.* 144, 135 (2003)

YOUNG, PATRICK A. Stellar Hydrodynamics in Radiative Regions. *Patrick A. Young, Karen A. Knierman, Jane R. Rigby, & David Arnett.* 595, 1114 (2003)

A Model for the Formation of High-Density Clumps in Proto–Planetary Nebulae. *Patrick A. Young, J. L. Highberger, David Arnett, & L. M. Ziurys.* 597, L53 (2003)

YOUNG, PETER R. A *Far Ultraviolet Spectroscopic Explorer* Survey of Coronal Forbidden Lines in Late-Type Stars. *Seth Redfield, Thomas R. Ayres, Jeffrey L. Linsky, Thomas B. Ake, A. K. Dupree, Richard D. Robinson, & Peter R. Young.* 585, 993 (2003)

YOUNG, S. See AHRENS, J., et al. Search for Point Sources of High-Energy Neutrinos with AMANDA.

YU, G. C. See AMENOMORI, M., et al. Multi-TeV Gamma-Ray Flares from Markarian 421 in 2000 and 2001 Observed with the Tibet Air Shower Array.

YU, QINGJUAN. Ejection of Hypervelocity Stars by the (Binary) Black Hole in the Galactic Center. *Qingjuan Yu & Scott Tremaine.* 599, 1129 (2003)

YU, WENFEI. Hard X-Ray Flares Preceding Soft X-Ray Outbursts in Aquila X-1: A Link between Neutron Star and Black Hole Transitions. *Wenfei Yu, Marc Klein-Wolt, Rob Fender, & Michiel van der Klis.* 589, L33 (2003)

YUAN, A. F. See AMENOMORI, M., et al. Multi-TeV Gamma-Ray Flares from Markarian 421 in 2000 and 2001 Observed with the Tibet Air Shower Array.

YUAN, FENG. Luminous Hot Accretion Flows: Thermal Equilibrium Curve and Thermal Stability. *Feng Yuan.* 594, L99 (2003)

Nonthermal Electrons in Radiatively Inefficient Accretion Flow Models of Sagittarius A*. *Feng Yuan, Eliot Quataert, & Ramesh Narayan.* 598, 301 (2003)

YUAN, JUNTAO. The Black Hole–Bulge Relationship in Quasars. *Gregory A. Shields, Karl Gebhardt, Sarah Salviander, Beverley J. Wills, Bingrong Xie, Michael S. Brotherton, Juntao Yuan, & Matthias Dietrich.* 583, 124 (2003)

The Baldwin Effect and Black Hole Accretion: A Spectral Principal Component Analysis of a Complete Quasar Sample. *Zhaohui Shang, Beverley J. Wills, Edward L. Robinson, D. Wills, Ari Laor, Bingrong Xie, & Juntao Yuan.* 586, 52 (2003)

YUAN, MICHAEL JUNTAO. Eddington Accretion and QSO Emission Lines at $z \sim 2$. *Michael Juntao Yuan & Beverley J. Wills.* 593, L11 (2003)

YUDA, T. See AMENOMORI, M., et al. Multi-TeV Gamma-Ray Flares from Markarian 421 in 2000 and 2001 Observed with the Tibet Air Shower Array.

YUN, HONG SIK. Hα, Extreme-Ultraviolet, and Microwave Observations of the 2000 March 22 Solar Flare and Spontaneous Magnetic Reconnection. *Jeongwoo Lee, Peter T. Gallagher, Dale E. Gary, Gelu M. Nita, G. S. Choe, Su-Chan Bong, & Hong Sik Yun.* 585, 524 (2003)

YUN, M. See CHAPMAN, S. C., et al. The Properties of Microjansky Radio Sources in the Hubble Deep Field–North, SSA 13, and SSA 22 Fields.

See WEBB, T. M., et al. The Canada-UK Deep Submillimeter Survey. VI. The 3 Hour Field.

The Canada-UK Deep Submillimeter Survey. VII. Optical and Near-Infrared Identifications for the 14 Hour Field. *T. M. A. Webb, S. J. Lilly, D. L. Clements, S. Eales, M. Yun, M. Brodwin, L. Dunne, & W. K. Gear.* 597, 680 (2003)

YUN, MIN S. CO Luminosity Functions for Far-Infrared– and *B*-Band–selected Galaxies and the First Estimate for $\Omega_{\rm H\ I+H_2}$. *Dusan Keres, Min S. Yun, & J. S. Young.* 582, 659 (2003)

YUNG, YUK L. Source of Atomic Hydrogen in the Atmosphere of HD 209458b. *Mao-Chang Liang, Christopher D. Parkinson, Anthony Y. T. Lee, Yuk L. Yung, & Sara Seager.* 596, L247 (2003)

YURCHYSHYN, V. B. Signature of Avalanche in Solar Flares as Measured by Photospheric Magnetic Fields. *V. I. Abramenko, V. B. Yurchyshyn, H. Wang, T. J. Spirock, & P. R. Goode.* 597, 1135 (2003)

YUSEF-ZADEH, F. Thermal OH (1667/1665 MHz) Absorption and Nonthermal OH (1720 MHz) Emission toward the W28 Supernova Remnant. *F. Yusef-Zadeh, M. Wardle, & D. A. Roberts.* 583, 267 (2003)

OH (1720 MHz) Masers and Mixed-Morphology Supernova Remnants. *F. Yusef-Zadeh, M. Wardle, J. Rho, & M. Sakano.* 585, 319 (2003)

Nonthermal Emission from the Arches Cluster (G0.121+0.017) and the Origin of γ-Ray Emission from 3EG J1746−2851. *F. Yusef-Zadeh, M. Nord, M. Wardle, C. Law, C. Lang, & T. J. W. Lazio.* 590, L103 (2003)

Hubble Space Telescope Paα and 1.9 Micron Imaging of Sagittarius A West. *N. Z. Scoville, S. R. Stolovy, M. Rieke, M. Christopher, & F. Yusef-Zadeh.* 594, 294 (2003)

The Origin of the Galactic Center Nonthermal Radio Filaments: Young Stellar Clusters. *F. Yusef-Zadeh.* 598, 325 (2003)

ZABEL, S. A. Extended Source Diffraction Effects near Gravitational Lens Fold Caustics. *S. A. Zabel & J. B. Peterson.* 594, 456 (2003)

ZABLUDOFF, ANN I. See GOMEZ, PERCY L., et al. Galaxy Star Formation as a Function of Environment in the Early Data Release of the Sloan Digital Sky Survey.

Galaxy Luminosity Functions from Deep Spectroscopic Samples of Rich Clusters. *Daniel Christlein & Ann I. Zabludoff.* 591, 764 (2003)

ZAGGIA, S. Search for the Optical Counterpart of the Vela Pulsar X-Ray Nebula. *R. P. Mignani, A. De Luca, O. Kargaltsev, G. G. Pavlov, S. Zaggia, P. A. Caraveo, & W. Becker.* 594, 419 (2003)

ZAHN, C. X-Ray Pulses from Accretion Columns: Contributions to the Energy Dependence of the Pulse Shape. *U. Kraus, C. Zahn, C. Weth, & H. Ruder.* 590, 424 (2003)

ZAKAMSKA, NADIA L. Models of Galaxy Clusters with Thermal Conduction. *Nadia L. Zakamska & Ramesh Narayan.* 582, 162 (2003)

ZALDARRIAGA, MATIAS. Higher Order Moments of the Cosmic Shear and Other Spin-2 Fields. *Matias Zaldarriaga & Román Scoccimarro.* 584, 559 (2003)

Inferring the Linear Power Spectrum from the Lyα Forest. *Matias Zaldarriaga, Román Scoccimarro, & Lam Hui.* 590, 1 (2003)

The Far-Infrared Background Correlation with Cosmic Microwave Background Lensing. *Yong-Seon Song, Asantha Cooray, Lloyd Knox, & Matias Zaldarriaga.* 590, 664 (2003)

ZAMANOV, R. An Optical Spectroscopic Atlas of Low-Redshift Active Galactic Nuclei. *P. Marziani, J. W. Sulentic, R. Zamanov, M. Calvini, D. Dultzin-Hacyan, R. Bachev, & T. Zwitter.* 145, 199 (2003)

ZAMFIR, S. Radio-loud Active Galactic Nuclei in the Context of the Eigenvector 1 Parameter Space. *J. W. Sulentic, S. Zamfir, P. Marziani, R. Bachev, M. Calvani, & D. Dultzin-Hacyan.* 597, L17 (2003)

ZAMORANI, G. See GILLI, R., et al. Tracing the Large-Scale Structure in the *Chandra* Deep Field South.

See POLI, F., et al. The Evolution of the Galaxy Luminosity Function in the Rest-Frame Blue Band up to $z = 3.5$.

ZAMORANO, JAIME. Luminosity and Stellar Mass Functions of Local Star-forming Galaxies. *Pablo G. Pérez-González, Jesús Gallegeo, Jaime Zamorano, Almudena Alonso-Herrero, Armando Gil de Paz, & Alfonso Aragón-Salamanca.* 587, L27 (2003)

Spatial Analysis of the Hα Emission in the Local Star-forming UCM Galaxies. *Pablo G. Pérez-González, Jaime Zamorano, Jesús Gallego, Alfonso Aragón-Salamanca, & Armando Gil de Paz.* 591, 827 (2003)

ZAMPIERI, L. Radiative Acceleration and Transient, Radiation-induced Electric Fields. *L. Zampieri, R. Turolla, L. Foschini, & A. Treves.* 592, 368 (2003)

ZANE, S. Detection of Pulsed X-Ray Emission from *XMM-Newton* Observations of PSR J0538+2817. *K. E. McGowan, J. A. Kennea, S. Zane, F. A. Córdova, M. Cropper, C. Ho, T. Sasseen, & W. T. Vestrand.* 591, 380 (2003)

ZANICHELLI, A. See COHEN, A. S., et al. The Low-Frequency Radio Counterpart of the *XMM* Large-Scale Structure Survey.

ZANK, G. P. Nonlinear Collisionless Perpendicular Diffusion of Charged Particles. *W. H. Matthaeus, G. Qin, J. W. Bieber, & G. P. Zank.* 590, L53 (2003)

Diffusive-Compression Acceleration and Turbulent Diffusion of Cosmic Rays in Quasi-periodic and Turbulent Flows. *G. M. Webb, C. M. Ko, G. P. Zank, & J. R. Jokipii.* 595, 195 (2003)

Anisotropic Turbulence in Two-dimensional Electrom Magnetohydrodynamics. *S. Dastgeer & G. P. Zank.* 599, 715 (2003)

ZANK, GARY P. A Search for Lyα Emission from the Astrosphere of 40 Eridani A. *Brian E. Wood, Jeffrey L. Linsky, Hans-Reinhard Mueller, & Gary P. Zank.* 591, 1210 (2003)

ZAPATERO OSORIO, M. R. Spectroscopic Estimate of Surface Gravity for a Planetary Member in the σ Orionis Cluster. *E. L. Martín & M. R. Zapatero Osorio.* 593, L113 (2003)

ZAQARASHVILI, T. On a Mechanism for Enhancing Magnetic Activity in Tidally Interacting Binaries: Erratum (ApJ, 579, 810 [2002]). *T. Zaqarashvili, G. Javakhishvili, & G. Belvedere.* 591, 498 (2003) (Orig. paper in 579, 810 (2002))

ZARE, RICHARD N. Side Group Addition to the Polycyclic Aromatic Hydrocarbon Coronene by Proton Irradiation in Cosmic Ice Analogs. *Max P. Bernstein, Marla H. Moore, Jamie E. Elsila, Scott A. Sandford, Louis J. Allamandola, & Richard N. Zare.* 582, L25 (2003)

ZARITSKY, D. See MATHESON, T., et al. Photometry and Spectroscopy of GRB 03029 and Its Associated Supernova 2003dh: The First Two Months.

ZARITSKY, DENNIS. On the Incidence of Strong Gravitational Lensing by Clusters in the Las Campanas Distant Cluster Survey. *Dennis Zaritsky & Anthony H. Gonzalez.* 584, 691 (2003)

ZASTENKER, G. N. Measurement of ^{3}He/^{4}He in the Local Interstellar Medium: The Collisa Experiment on *Mir*. *E. Salerno, F. Bühler, P. Bochsler, H. Busemann, M. L. Bassi, G. N. Zastenker, Yu. N. Agafonov, & N. A. Eismont.* 585, 840 (2003)

ZATSARINNY, O. Assessment of the Fluorescence and Auger Database used in Plasma Modeling. *T. W. Gorczyca, C. N. Kodituwakku, K. T. Korista, O. Zatsarinny, N. R. Badnell, E. Behar, M. H. Chen, & D. W. Savin.* 592, 636 (2003)

See SAVIN, D. W., et al. Dielectronic Recombination of the Fe XXI and Fe XXII via $N = 2 \rightarrow N' = 2$ Core Excitations.

Electron Collision Excitation Rates for O I Using the *B*-Spline *R*-Matrix Approach. *O. Zatsarinny & S. S. Tayal.* 148, 575 (2003)

ZAVALA, R. T. A View through Faraday's Fog: Parsec-Scale Rotation Measures in Active Galactic Nuclei. *R. T. Zavala & G. B. Taylor.* 589, 126 (2003)

VLBI Polarimetry of 177 Sources from the Caltech–Jodrell Bank Flat-Spectrum Survey. *L. K. Pollack, G. B. Taylor, & R. T. Zavala.* 589, 733 (2003)

ZAVODSZKY, P. A. See SAVIN, D. W., et al. Dielectronic Recombination of the Fe XXI and Fe XXII via $N = 2 \rightarrow N' = 2$ Core Excitations.

ZDZIARSKI, A. A. Spectral and Temporal Behavior of the Black Hole Candidate XTE J1118+480 as Observed with *BeppoSAX*. *F. Frontera, L. Amati, A. A. Zdziarski, T. Belloni, S. Del Sordo, N. Masetti, M. Orlandini, & E. Palazzi.* 592, 1110 (2003)

ZEBRUN, K. See SCHECHTER, PAUL L., et al. Microlensing of Relativistic Knots in the Quasar HE 1104–1805 AB.

ZEH, A. See KLOSE, S., et al. The Very Faint *K*-Band Afterglow of GRB 020819 and the Dust Extinction Hypothesis of the Dark Bursts.

See GREINER, J., et al. GRB 011121: A Collimated Outflow into Wind-blown Surroundings.

ZEHAVI, IDIT. See HOGG, DAVID W., et al. The Overdensities of Galaxy Environments as a Function of Luminosity and Color.

See SZALAY, ALEXANDER S., et al. Karhunen-Loève Estimation of the Power Spectrum Parameters from the Angular Distribution of Galaxies in Early Sloan Digital Sky Survey Data.

See BUDAVÁRI, TAMÁS, et al. Angular Clustering with Photometric Redshifts in the Sloan Digital Sky Survey: Bimodality in the Clustering Properties of Galaxies.

ZEILINGER, W. W. The Puzzlingly Large Ca II Triplet Absorption in Dwarf Elliptical Galaxies. *D. Michielsen, S. De Rijcke, H. Dejonghe, W. W. Zeilinger, & G. K. T. Hau.* 597, L21 (2003)

ZENSUS, J. A. 4C +12.50: A Superluminal Precessing Jet in the Recent Merger System IRAS 13451+1232. *M. L. Lister, K. I. Kellermann, R. C. Vermeulen, M. H. Cohen, J. A. Zensus, & E. Ros.* 584, 135 (2003)

Jet Collimation in Action: Realignment on Kiloparsec Scales in 3C 279. *D. C. Homan, M. L. Lister, K. I. Kellermann, M. H. Cohen, E. Ros, J. A. Zensus, M. Kadler, & R. C. Vermeulen.* 589, L9 (2003)

ZENTNER, ANDREW R. Halo Substructure and the Power Spectrum. *Andrew R. Zentner & James S. Bullock.* 598, 49 (2003)

ZEPF, S. E. Effects of the Dissolution of Low-Concentration Globular Clusters on the Evolution of Globular Cluster Systems. *E. Vesperini & S. E. Zepf.* 587, L97 (2003)

Modeling the Dynamical Evolution of the M87 Globular Cluster System. *E. Vesperini, S. E. Zepf, A. Kundu, & K. M. Ashman.* 593, 760 (2003)

ZEPF, STEPHEN E. The Low Mass X-Ray Binary–Globular Cluster Connection. II. NGC 4472 X-Ray Source Properties and Source Catalogs. *Thomas J. Maccarone, Arunav Kundu, & Stephen E. Zepf.* 586, 814 (2003)

Some Constraints on the Effects of Age and Metallicity on the Low-Mass X-Ray Binary Formation Rate. *Arunav Kundu, Thomas J. Maccarone, Stephen E. Zepf, & Thomas H. Puzia.* 589, L81 (2003)

ZEZAS, A. See CORBETT, E. A., et al. COLA. II. Radio and Spectroscopic Diagnostics of Nuclear Activity in Galaxies.

X-Ray Luminous Galaxies. I. *Chandra* Observations of IRAS 00317–2142. *I. Georgantopoulos, A. Zezas, & M. J. Ward.* 584, 129 (2003)

The Time-variable Ultraluminous X-Ray Sources of "The Antennae." *G. Fabbiano, A. Zezas, A. R. King, T. J. Ponman, A. Rots, & Francois Schweizer.* 584, L5 (2003)

See FABBIANO, G., et al. The X-Ray–faint Emission of the Supermassive Nuclear Black Hole of IC 1459.

A Variable Ultraluminous Supersoft X-Ray Source in "The Antennae": Stellar-Mass Black Hole or White Dwarf? *G. Fabbiano, A. R. King, A. Zezas, T. J. Ponman, A. Rots, & François Schweizer.* 591, 843 (2003)

Chandra Observations of the X-Ray–luminous Star-forming Galaxy Merger Arp 299. *A. Zezas, M. J. Ward, & S. S. Murray.* 594, L31 (2003)

Chandra Observations of NGC 4698: A Seyfert 2 Galaxy with No Absorption. *I. Georgantopoulos & A. Zezas.* 594, 704 (2003)

Classifying X-Ray Sources in External Galaxies from X-Ray Colors. *A. H. Prestwich, J. A. Irwin, R. E. Kilgard, M. I. Krauss, A. Zezas, F. Primini, P. Kaaret, & B. Boroson.* 595, 719 (2003)

The Multicolored Hot Interstellar Medium of the "Antennae" Galaxies (NGC 4038/4039). *G. Fabbiano, M. Krauss, A. Zezas, A. Rots, & S. Neff.* 598, 272 (2003)

NGC 4261 and NGC 4697: Rejuvenated Elliptical Galaxies. *A. Zezas, L. Hernquist, G. Fabbiano, & J. Miller.* 599, L73 (2003)

ZHAN, HU. One-Point Statistics of the Cosmic Density Field in Real and Redshift Spaces with a Multiresolutional Decomposition. *Hu Zhan & Li-Zhi Fang.* 585, 12 (2003)

The Multiphase Intracluster Medium in Galaxy Groups Probed by the Lyα Forest. *Hu Zhan, Li-Zhi Fang, & David Burstein.* 592, L1 (2003)

ZHANG, B. See SCHAEFER, BRADLEY E., et al. GRB 021004: A Massive Progenitor Star Surrounded by Shells.

ZHANG, BING. GRB 021004: Reverse Shock Emission. *Shiho Kobayashi & Bing Zhang.* 582, L75 (2003)

High-Energy Neutrinos from Magnetars. *Bing Zhang, Z. G. Dai, P. Mészáros, E. Waxman, & A. K. Harding.* 595, 346 (2003)

Gamma-Ray Burst Early Optical Afterglows: Implications for the Initial Lorentz Factor and the Central Engine. *Bing Zhang, Shiho Kobayashi, & Peter Mészáros.* 595, 950 (2003)

Electromagnetic Signals from Planetary Collisions. *Bing Zhang & Steinn Sigurdsson.* 596, L95 (2003)

Early Optical Afterglows from Wind-Type Gamma-Ray Bursts. *Shiho Kobayashi & Bing Zhang.* 597, 455 (2003)

ZHANG, FAN. Supernova Remnant Crossing a Density Jump: A Thin-Shell Model. *Yang Chen, Fan Zhang, Rosa M. Williams, & Q. Daniel Wang.* 595, 227 (2003)

ZHANG, H. The Magnetic Helicity Budget of Solar Active Regions and Coronal Mass Ejections. *A. Nindos, J. Zhang, & H. Zhang.* 594, 1033 (2003)

ZHANG, H. M. See AMENOMORI, M., et al. Multi-TeV Gamma-Ray Flares from Markarian 421 in 2000 and 2001 Observed with the Tibet Air Shower Array.

ZHANG, HONGQI. Study of Ribbon Separation of a Flare Associated with a Quiescent Filament Eruption. *Haimin Wang, Jiong Qui, Ju Jing, & Hongqi Zhang.* 593, 564 (2003)

Observational Evidence of a Magnetic Flux Rope Eruption Associated with the X3 Flare on 2002 July 15. *Yu Liu, Yunchun Jiang, Haishen Ji, Hongqi Zhang, & Haimin Wang.* 593, L137 (2003)

ZHANG, J. Identification of Solar Sources of Major Geomagnetic Storms between 1996 and 2000. *J. Zhang, K. P. Dere, R. A. Howard, & V. Bothmer.* 582, 520 (2003)

The Magnetic Helicity Budget of Solar Active Regions and Coronal Mass Ejections. *A. Nindos, J. Zhang, & H. Zhang.* 594, 1033 (2003)

ZHANG, J. L. See AMENOMORI, M., et al. Multi-TeV Gamma-Ray Flares from Markarian 421 in 2000 and 2001 Observed with the Tibet Air Shower Array.

ZHANG, JIAN. The Effect of the Compton Backscattering Component on the Photon Spectra of Three *Yohkoh*/Hard X-Ray Telescope Flares. *Jian Zhang & Guang Li Huang.* 592, L49 (2003)

ZHANG, K. A Three-dimensional Spherical Nonlinear Interface Dynamo. *K. Zhang, K. H. Chan, J. Zou, X. Liao, & G. Schubert.* 596, 663 (2003)

ZHANG, KEKE. Nonaxisymmetric Instabilities of a Toroidal Magnetic Field in a Rotating Sphere. *Keke Zhang, Xinhao Liao, & Gerald Schubert.* 585, 1124 (2003)

ZHANG, M. Magnetic Flux Emergence into the Solar Corona. III. The Role of Magnetic Helicity Conservation. *M. Zhang & B. C. Low.* 584, 479 (2003)

ZHANG, MEI. The Dynamical Morphologies of Flares Associated with the Two Types of Solar Coronal Mass Ejections. *Mei Zhang & Leon Golub.* 595, 1251 (2003)

ZHANG, MING. Perpendicular Transport of Solar Energetic Particles in Heliospheric Magnetic Fields. *Ming Zhang, J. R. Jokipii, & R. B. McKibben.* 595, 493 (2003)

ZHANG, N. J. See AMENOMORI, M., et al. Multi-TeV Gamma-Ray Flares from Markarian 421 in 2000 and 2001 Observed with the Tibet Air Shower Array.

ZHANG, PENGJI. Optimal Weak-Lensing Skewness Measurements. *Tong-Jie Zhang, Ue-Li Pen, Pengji Zhang, & John Dubinski.* 598, 818 (2003)

ZHANG, PENGJIE. Measuring Feedback Using the Intergalactic Medium State and Evolution Inferred from the Soft X-Ray Background. *Pengjie Zhang & Ue-Li Pen.* 588, 704 (2003)

Detection of Dark Matter Skewness in the VIRMOS-DESCART Survey: Implications for Ω_0. *Ue-Li Pen, Tongjie Zhang, Ludovic van Waerbeke, Yannick Mellier, Pengjie Zhang, & John Dubinski.* 592, 664 (2003)

ZHANG, S. N. An Accretion Model for the Growth of the Central Black Hole Associated with Ionization Instability in Quasars. *Y. Lu, K. S. Cheng, & S. N. Zhang.* 590, 52 (2003)

Probing with the Inflow/Outflow and Accretion Disk of Cygnus X-1 in High State with the *Chandra* High Energy Transmission Grating. *Y. X. Feng, A. F. Tennant, & S. N. Zhang.* 597, 1017 (2003)

Does the Iron Kα Line of Active Galactic Nuclei Arise from the Cerenkov Line-like Radiation? *J. H. You, D. B. Liu, W. P. Chen, L. Chen, & S. N. Zhang.* 599, 164 (2003)

ZHANG, SHUANG NAN. Low-Frequency Coherence Break in the Soft X-Ray State of GRS 1915+105. *Jian Feng Ji, Shuang Nan Zhang, Jin Lu Qu, & Ti Pei Li.* 584, L23 (2003)

A New Method to Resolve X-Ray Halos around Point Sources with *Chandra* Data and Its Application to Cygnus X-1. *Yangsen Yao, Shuang Nan Zhang, Xiaoling Zhang, & Yuxin Feng.* 594, L43 (2003)

ZHANG, T. X. An Explanation for Large Enhancements of Nitrogen Relative to Carbon and Oxygen in Solar ^{3}He-rich Events. *T. X. Zhang & J. X. Wang.* 588, L57 (2003)

Preferential Heating of Particles by H-Cyclotron Waves Generated by a Global Magnetohydrodynamic Mode in Solar Coronal Holes. *T. X. Zhang.* 597, L69 (2003)

ZHANG, TONGJIE. Detection of Dark Matter Skewness in the VIRMOS-DESCART Survey: Implications for Ω_0. *Ue-Li Pen, Tongjie Zhang, Ludovic van Waerbeke, Yannick Mellier, Pengjie Zhang, & John Dubinski.* 592, 664 (2003)

ZHANG, TONG-JIE. Optimal Weak-Lensing Skewness Measurements. *Tong-Jie Zhang, Ue-Li Pen, Pengji Zhang, & John Dubinski.* 598, 818 (2003)

ZHANG, WEIQUN. Relativistic Jets in Collapsars. *Weiqun Zhang, S. E. Woosley, & A. I. MacFadyen.* 586, 356 (2003)

ZHANG, X. Y. See AMENOMORI, M., et al. Multi-TeV Gamma-Ray Flares from Markarian 421 in 2000 and 2001 Observed with the Tibet Air Shower Array.

ZHANG, XIAOLING. A New Method to Resolve X-Ray Halos around Point Sources with *Chandra* Data and Its Application to Cygnus X-1. *Yangsen Yao, Shuang Nan Zhang, Xiaoling Zhang, & Yuxin Feng.* 594, L43 (2003)

ZHANG, Y. See AMENOMORI, M., et al. Multi-TeV Gamma-Ray Flares from Markarian 421 in 2000 and 2001 Observed with the Tibet Air Shower Array.

ZHANG, YU-YING. The Effect of Radiative Cooling on the Sunyaev-Zeldovich Cluster Counts and Angular Power Spectra: Analytic Treatment. *Yu-Ying Zhang & Xiang-Ping Wu.* 583, 529 (2003)

ZHANG, Z. Experimental f-Value and Isotopic Structure for the Ni I Line Blended with [O I] at 6300 Å. *S. Johansson, U. Litzén, H. Lundberg, & Z. Zhang.* 584, L107 (2003)

See JAROSIK, N., et al. Design, Implementation, and Testing of the *Microwave Anisotropy Probe* Radiometers.

ZHAO, CHONGSHAN. Sloan Digital Sky Survey Catalog of Stars in the Draco Dwarf Spheroidal Galaxy. *Heather A. Rave, Chongshan Zhao, Heidi Jo Newberg, Brian Yanny, Donald P. Schneider, J. Brinkman, & Don Q. Lamb.* 145, 245 (2003)

ZHAO, D. H. Mass and Redshift Dependence of Dark Halo Structure. *D. H. Zhao, Y. P. Jing, H. J. Mo, & G. Börner.* 597, L9 (2003)

ZHAO, G. Chemical Abundances of Old Metal-rich Stars in the Solar Neighborhood. *Y. Q. Chen, G. Zhao, P. E. Nissen, G. S. Bai, & H. M. Qiu.* 591, 925 (2003)

ZHAO, HONGSHENG. Intrinsic Degeneracy of Gravitational Lens Time Delays: The Case for a Simple Quadruple System in Λ Cold Dark Matter Cosmology. *HongSheng Zhao & Bo Qin.* 582, 2 (2003)

ZHAO, JUN-HUI. Variability of Sagittarius A*: Flares at 1 Millimeter. *Jun-Hui Zhao, K. H. Young, R. M. Herrnstein, P. T. P. Ho, T. Tsutsumi, K. Y. Lo, W. M. Goss, & G. C. Bower.* 586, L29 (2003)

ZHAO, JUNWEI. Helioseismic Observation of the Structure and Dynamics of a Rotating Sunspot beneath the Solar Surface. *Junwei Zhao & Alexander G. Kosovichev.* 591, 446 (2003)

ZHAO, Y. Timescales of Soft X-Ray Variability and Physical Constraints in Active Galactic Nuclei. *W. Bian & Y. Zhao.* 591, 733 (2003)

ZHAXISANGZHU. See AMENOMORI, M., et al. Multi-TeV Gamma-Ray Flares from Markarian 421 in 2000 and 2001 Observed with the Tibet Air Shower Array.

ZHELEZNYAK, ALEXANDER. See COLLEY, WESLEY N., et al. Around-the-Clock Observations of the Q9057+561A,B Gravitationally Lensed Quasar. II. Results for the Second Observing Season.

ZHENG, W. See WANG, J., et al. A Puzzling X-Ray Source Found in the *Chandra* Deep Field–South.

See GILLI, R., et al. Tracing the Large-Scale Structure in the *Chandra* Deep Field South.

See BOUWENS, R. J., et al. Star Formation at $z \sim 6$: i-Dropouts in the Advanced Camera for Surveys Guaranteed Time Observation Fields.

Radio Constraints on the Starburst Ages of Two Wolf-Rayet Galaxies. *Q. F. Yin, J. H. Huang, & W. Zheng.* 597, 274 (2003)

See MEURER, GERHARDT R., et al. The Discovery of Globular Clusters in the Protospiral Galaxy NGC 2915: Implications for Hierarchical Galaxy Evolution.

ZHENG, WEI. See GABEL, JACK R., et al. The Ionized Gas and Nuclear Environment in NGC 3783. II. Averaged *Hubble Space Telescope*/STIS and *Far Ultraviolet Spectroscopic Explorer* Spectra.

See BLAKESLEE, JOHN P., et al. Discovery of Two Distant Type Ia Supernovae in the Hubble Deep Field–North with the Advanced Camera for Surveys.

See GABEL, JACK R., et al. The Ionized Gas and Nuclear Environment in NGC 3783. III. Detection of a Decreasing Radial Velocity in an Intrinsic Ultraviolet Absorber.

ZHENG, X. Z. An Active Galactic Nucleus Sample with High X-Ray–to–Optical Flux Ratio from RASS. II. Optical Emission Line Properties of Seyfert 1 Type Active Galactic Nuclei. *D. W. Xu, Stefanie Komossa, J. Y. Wei, Y. Qian, & X. Z. Zheng.* 590, 73 (2003)

ZHENG, XIAOPING. The Critical Rotation of Strange Stars and Rapidly Rotating Pulsars. *Xiaoping Zheng, Shuhua Yang, & Jiarong Li.* 585, L135 (2003)

ZHOU, HONG-YAN. SDSS J094857.3+002225: A Very Radio Loud, Narrow-Line Quasar with Relativistic Jets? *Hong-Yan Zhou, Ting-Gui Wang, Xiao-Bo Dong, You-Yuan Zhou, & Cheng Li.* 584, 147 (2003)

ZHOU, JILIN. The Librating Companions in HD 37124, HD 12661, HD 82943, 47 Ursa Majoris, and GJ 876: Alignment or Antialignment? *Jianghui Ji, Lin Liu, Hiroshi Kinoshita, Jilin Zhou, Hiroshi Nakai, & Guangyu Li.* 591, L57 (2003)

ZHOU, JI-LIN. Occurrence and Stability of Apsidal Resonance in Multiple Planetary Systems. *Ji-Lin Zhou & Yi-Sui Sun.* 598, 1290 (2003)

ZHOU, X. X. See AMENOMORI, M., et al. Multi-TeV Gamma-Ray Flares from Markarian 421 in 2000 and 2001 Observed with the Tibet Air Shower Array.

ZHOU, XU. Multicolor Photometry of the Galaxies in A2255 by the Beijing-Arizona-Taiwan-Connecticut Survey and Sloan Digital Sky Survey. *Qirong Yaun, Xu Zhou, & Zhaoji Jiang.* 149, 53 (2003)

ZHOU, YOU-YUAN. SDSS J094857.3+002225: A Very Radio Loud, Narrow-Line Quasar with Relativistic Jets? *Hong-Yan Zhou, Ting-Gui Wang, Xiao-Bo Dong, You-Yuan Zhou, & Cheng Li.* 584, 147 (2003)

ZHU, MING. A Multitransition CO Study of the Antennae Galaxies NGC 4038/9. *Ming Zhu, E. R. Seaquist, & Nario Kuno.* 588, 243 (2003)

ZHU, Q. Kinematics of Ultracompact H II Regions Revealed: High Spatial and Spectral Resolution Mapping of the 12.8 Micron [Ne II] Line in Monoceros R2. *D. T. Jaffe, Q. Zhu, J. H. Lacy, & M. Richter.* 596, 1053 (2003)

ZHU, ZHONG-HONG. Constraints on Cardassian Expansion from Distant Type Ia Supernovae. *Zhong-Hong Zhu & Masa-Katsu Fujimoto.* 585, 52 (2003)

ZIBETTI, STEFANO. QSOs Associated with Messier 82. *E. Margaret Burbidge, Geoffrey Burbidge, Halton C. Arp, & Stefano Zibetti.* 591, 690 (2003)

ZIEGLER, B. L. Internal Kinematics of Spiral Galaxies in Distant Clusters. *B. L. Ziegler, A. Böhm, K. Jäger, J. Heidt, & C. Möllenhoff.* 598, L87 (2003)

ZIJLSTRA, A. An Icy, Bipolar Proto–Planetary Nebula with Knotty Jets: IRAS 22036+5306. *R. Sahai, A. Zijlstra, C. Sánchez Contreras, & M. Morris.* 586, L81 (2003)

ZILGES, A. See SONNABEND, K., et al. The s-Process Branching at ^{185}W.

ZINGALE, M. See DURSI, L. J., et al. The Response of Model and Astrophysical Thermonuclear Flames to Curvature and Stretch.

ZIRM, A. See WANG, J., et al. A Puzzling X-Ray Source Found in the *Chandra* Deep Field–South.

See GILLI, R., et al. Tracing the Large-Scale Structure in the *Chandra* Deep Field South.

See GROGIN, N. A., et al. *Hubble Space Telescope* Imaging in the *Chandra* Deep Field–South. III. Quantitative Morphology of the 1 Million Second *Chandra* Counterparts and Comparison with the Field Population.

ZIRM, ANDREW W. Massive Elliptical Galaxies at High Redshift: NICMOS Imaging of $z \approx 1$ Radio Galaxies. *Andrew W. Zirm, Mark Dickinson, & Arjun Dey.* 585, 90 (2003)

ZITA, E. J. See BOGDAN, T. J., et al. Waves in the Magnetized Solar Atmosphere. II. Waves from Localized Sources in Magnetic Flux Concentrations.

ZIURYS, L. M. The Salty Scrambled Egg: Detection of NaCl toward CRL 2688. *J. L. Highberger, K. J. Thomson, P. A. Young, D. Arnett, & L. M. Ziurys.* 593, 393 (2003)

Rotational Rest Frequencies for FeN ($X\ ^2\Delta_i$) and Revised Spectroscopic Constants for FeC ($X\ ^3\Delta_i$). *P. M. Sheridan, L. M. Ziurys, & T. Hirano.* 593, L141 (2003)

A Model for the Formation of High-Density Clumps in Proto–Planetary Nebulae. *Patrick A. Young, J. L. Highberger, David Arnett, & L. M. Ziurys.* 597, L53 (2003)

Detection of MgNC in CRL 618: Tracing Metal Chemistry in Asymptotic Giant Branch Evolution. *J. L. Highberger & L. M. Ziurys.* 597, 1065 (2003)

ZLOBEC, P. Polarization and Fragmentation of Solar Type II Radio Bursts. *G. Thejappa, P. Zlobec, & R. J. MacDowall.* 592, 1234 (2003)

ZMUIDZINAS, JONAS. A ^{12}CO Map of M82: The Significance of Warm Molecular Gas. *John S. Ward, Jonas Zmuidzinas, Andrew I. Harris, & Kate G. Isaak.* 587, 171 (2003)

ZOLA, S. See MUKADEM, ANJUM S., et al. Constraining the Evolution of ZZ Ceti.

ZONAK, STEPHANIE G. A Quadruple-Phase Strong Mg II Absorber at $z \sim 0.9902$ toward PG 1634+706. *Jie Ding, Jane C. Charlton, Nicholas A. Bond, Stephanie G. Zonak, & Christopher W. Churchill.* 587, 551 (2003)

High-Resolution STIS/*Hubble Space Telescope* and HIRES/Keck Spectra of Three Weak Mg II Absorbers toward PG 1643+706. *Jane C. Charlton, Jie Ding, Stephanie G. Zonak, Christopher W. Churchill, Nicholas A. Bond, & Jane R. Rigby.* 589, 111 (2003)

ZOOK, ALMA C. The Speed and Orientation of the Parsec-Scale Jet in 3C 279. *B. Glenn Piner, Stephen C. Unwin, Ann E. Wehrle, Alma C. Zook, C. Megan Urry, & Diane M. Gilmore.* 588, 716 (2003)

ZOREC, J. See MARCHENKO, S. V., et al. The Unusual 2001 Periastron Passage in the "Clockwork" Colliding-Wind Binary WR 140.

ZOU, J. A Three-dimensional Spherical Nonlinear Interface Dynamo. *K. Zhang, K. H. Chan, J. Zou, X. Liao, & G. Schubert.* 596, 663 (2003)

ZSARGÓ, J. Highly Ionized Gas in the Galactic Halo: A *FUSE* Survey of O VI Absorption toward 22 Halo Stars. *J. Zsargó, K. R. Sembach, J. C. Howk, & B. D. Savage.* 586, 1019 (2003)

Nonthermal Chemistry in Diffuse Clouds with Low Molecular Abundances. *J. Zsargó & S. R. Federman.* 589, 319 (2003)

Far Ultraviolet Spectroscopic Explorer Snapshot Survey of O VI Variability in the Winds of 66 OB-Type Stars. *N. Lehner, A. W. Fullerton, D. Massa, K. R. Sembach, & J. Zsargó.* 589, 526 (2003)

Further Evidence for Chemical Fractionation from Ultraviolet Observations of Carbon Monoxide. *S. R. Federman, David L. Lambert, Yaron Sheffer, Jason A. Cardelli, B.-G. Andersson, Ewine F. van Dishoeck, & J. Zsargó.* 591, 986 (2003)

ZUCKER, S. The Smallest Mass Ratio Young Star Spectroscopic Binaries: Erratum (ApJ, 569, 863 [2002]). *L. Prato, M. Simon, T. Mazeh, I. S. McLean, D. Norman, & S. Zucker.* 598, 1409 (2003)

The Mass Ratio Distribution in Main-Sequence Spectroscopic Binaries Measured by Infrared Spectroscopy. *T. Mazeh, M. Simon, L. Prato, B. Markus, & S. Zucker.* 599, 1344 (2003)

ZUCKER, SHAY. A Possible Correlation between Mass Ratio and Period Ration in Multiple Planetary Systems. *Tsevi Mazeh & Shay Zucker.* 590, L115 (2003)

ZUCKERMAN, B. See HOLLAND, W. S., et al. Submillimeter Observations of an Asymmetric Dust Disk around Fomalhaut.

The First Spatially Resolved Mid-Infrared Spectroscopy of β Pictoris. *A. J. Weinberger, E. E. Becklin, & B. Zuckerman.* 584, L33 (2003)

Deep Keck Adaptive Optics Searches for Extrasolar Planets in the Dust of ϵ Eridani and Vega. *Bruce A. Macintosh, E. E. Becklin, Denise Kaisler, Quinn Konopacky, & B. Zuckerman.* 594, 538 (2003)

Metal Lines in DA White Dwarfs. *B. Zuckerman, D. Koester, I. N. Reid, & M. Huensch.* 596, 477 (2003)

New Members of the TW Hydrae Association, β Pictoris Moving Group, and Tucana/Horologium Association. *Inseok Song, B. Zuckerman, & M. S. Bessell.* 599, 342 (2003)

ZURBUCHEN, T. Z. Temporal Evolution of a Streamer Complex: Coronal and in Situ Plasma Parameters. *A. Bemporad, G. Poletto, S. T. Suess, Y.-K. Ko, S. Parenti, P. Riley, M. Romoli, & T. Z. Zurbuchen.* 593, 1146 (2003)

ZUREK, DAVID R. A Far-Ultraviolet Survey of 47 Tucanae. II. The Long-Period Cataclysmic Variable AKO 9. *Christian Knigge, David R. Zurek, Michael M. Shara, Knox S. Long, & Ronald L. Gilliland.* 599, 1320 (2003)

ZURITA, C. Evidence for Optical Flares in Quiescent Soft X-Ray Transients. *C. Zurita, J. Casares, & T. Shahbaz.* 582, 369 (2003)

The Optical Light Curves of XTE J2123−058. III. The Mass of the Binary Components and the Structure of the Quiescent Accretion Disk. *T. Shahbaz, C. Zurita, J. Casares, G. Dubus, P. A. Charles, R. Mark Wagner, & E. Ryan.* 585, 443 (2003)

ZWART, SIMON PORTEGIES. On the Central Structure of M15. *Holger Baumgardt, Piet Hut, Junichiro Makino, Steve McMillan, & Simon Portegies Zwart.* 582, L21 (2003)

ZWEERINK, J. See AKERLOF, C. W., et al. A Search for Correlations of TeV Gamma Rays with Ultra–High-Energy Cosmic Rays.

ZWEIBEL, ELLEN G. Fast Reconnection in a Two-Stage Process. *Fabian Heitsch & Ellen G. Zweibel.* 583, 229 (2003)

Cosmic-Ray History and Its Implications for Galactic Magnetic Fields. *Ellen G. Zweibel.* 587, 625 (2003)

Suppression of Fast Reconnection by Magnetic Shear. *Fabian Heitsch & Ellen G. Zweibel.* 590, 291 (2003)

ZWITTER, T. An Optical Spectroscopic Atlas of Low-Redshift Active Galactic Nuclei. *P. Marziani, J. W. Sulentic, R. Zamanov, M. Calvini, D. Dultzin-Hacyan, R. Bachev, & T. Zwitter.* 145, 199 (2003)

ZYCKI, PIOTR. Accretion Disk Spectra of Ultraluminous X-Ray Sources in Nearby Spiral Galaxies and Galactic Superluminal Jet Sources. *Ken Ebisawa, Piotr Zycki, Aya Kubota, Tsunefumi Mizuno, & Ken-ya Watarai.* 597, 780 (2003)

ZYCKI, PIOTR T. Simultaneous *Chandra* and *Rossi X-Ray Timing Explorer* Observations of the Nearby Bright Seyfert 2 Galaxy NGC 4945. *Chris Done, Greg M. Madejski, Piotr T. Zycki, & Lincoln J. Greenhill.* 588, 763 (2003)

CONTENTS

Acceleration of Particles 247
Accretion, Accretion Disks 247
Astrobiology 251
Astrochemistry 251
Astrometry 251
Atlases 252
Atmospheric Effects 252
Atomic Data 252
Atomic Processes 253
Balloons 253
Black Hole Physics 253
Catalogs 255
Celestial Mechanics, Stellar Dynamics 256
Comets: General 256
Comets: Individual
By Name 256
Conduction 257
Convection 257
Cosmology: Cosmic Microwave Background 257
Cosmology: Cosmological Parameters 259
Cosmology: Dark Matter 260
Cosmology: Diffuse Radiation 261
Cosmology: Distance Scale 262
Cosmology: Early Universe 262
Cosmology: Gravitational Lensing 263
See also Gravitational Lensing
Cosmology: Large-Scale Structure of Universe 263
Cosmology: Miscellaneous 265
Cosmology: Observations 265
Cosmology: Theory 268
Dark Matter 271
Dense Matter 272
Diffusion 272
Eclipses 273
Editorials, Notices 273
Elementary Particles 273
Equation of State 273
Errata, Addenda 273
Extraterrestrial Intelligence 274
Galaxies: Abundances 274
Galaxies: Active 275
Galaxies: BL Lacertae Objects: General 279
Galaxies: BL Lacertae Objects: Individual
By Name 279
By Alphanumeric Designation 279
Galaxies: Bulges 281
Galaxies: Clusters: General 281
Galaxies: Clusters: Individual
By Name 283
By Alphanumeric Designation 284
Galaxies: Cooling Flows 285
Galaxies: Distances and Redshifts 285
Galaxies: Dwarf 286
Galaxies: Elliptical and Lenticular, cD 286
Galaxies: Evolution 287
Galaxies: Formation 291
Galaxies: Fundamental Parameters 293
Galaxies: General 294
Galaxies: Halos 295
Galaxies: High-Redshift 296
Galaxies: Individual
By Messier Number 297
By NGC Number 298
By Name 302
By Alphanumeric Designation 303
Galaxies: Interactions 305
Galaxies: Intergalactic Medium 306
Galaxies: Irregular 307
Galaxies: ISM 307
Galaxies: Jets 309
Galaxies: Kinematics and Dynamics 310
Galaxies: Local Group 311
Galaxies: Luminosity Function, Mass Function 311
Galaxies: Magellanic Clouds 312
Galaxies: Magnetic Fields 312
Galaxies: Nuclei 312
Galaxies: Peculiar 314
Galaxies: Photometry 315
Galaxies: Quasars: Absorption Lines 315
Galaxies: Quasars: Emission Lines 316
Galaxies: Quasars: General 317
Galaxies: Quasars: Individual
By Alphanumeric Designation 318
Galaxies: Seyfert 319
Galaxies: Spiral 321
Galaxies: Starburst 321
Galaxies: Star Clusters 323
Galaxies: Statistics 324
Galaxies: Stellar Content 324
Galaxies: Structure 325
Galaxy: Abundances 326
Galaxy: Bulge 326
Galaxy: Center 326
Galaxy: Disk 327
Galaxy: Evolution 327
Galaxy: Formation 327
Galaxy: Fundamental Parameters 327
Galaxy: General 327
Galaxy: Globular Clusters: General 327

Galaxy: Globular Clusters: Individual
By Messier Number . . . 328
By NGC Number . . . 328
By Name . . . 329
By Alphanumeric Designation . . . 329
Galaxy: Halo . . . 329
Galaxy: Kinematics and Dynamics . . . 330
Galaxy: Nucleus . . . 330
Galaxy: Open Clusters and Associations: General . . . 331
Galaxy: Open Clusters and Associations: Individual
By NGC Number . . . 331
By Name . . . 331
By Alphanumeric Designation . . . 332
Galaxy: Solar Neighborhood . . . 332
Galaxy: Stellar Content . . . 332
Galaxy: Structure . . . 332
Gamma Rays: Bursts . . . 333
Gamma Rays: Observations . . . 335
Gamma Rays: Theory . . . 336
Gravitation . . . 337
Gravitational Lensing . . . 337
See also Cosmology: Gravitational Lensing
Gravitational Waves . . . 339
Hydrodanamics . . . 340
Infrared: Galaxies . . . 341
Infrared: General . . . 342
Infrared: ISM . . . 342
Infrared: ISM: Lines and Bands . . . 343
Infrared: Solar System . . . 343
Infrared: Stars . . . 343
Instabilities . . . 344
Instrumentation: Adaptive Optics . . . 345
Instrumentation: Detectors . . . 345
Instrumentation: High Angular Resolution . . . 346
Instrumentation: Interferometers . . . 346
Instrumentation: Miscellaneous . . . 346
Instrumentation: Photometers . . . 346
Instrumentation: Spectrographs . . . 346
Intergalactic Medium . . . 346
See also Galaxies: ISM
Interplanetary Medium . . . 347
ISM: Abundances . . . 347
ISM: Atoms . . . 348
ISM: Bubbles . . . 349
ISM: Clouds . . . 349
ISM: Cosmic Rays . . . 351
ISM: Dust, Extinction . . . 352
ISM: Evolution . . . 353
ISM: General . . . 353
ISM: Globules . . . 354
ISM: H II Regions . . . 354
ISM: Herbig-Haro Objects . . . 355
ISM: Individual
By Messier Number . . . 355
By Name . . . 355
By NGC Number . . . 356
By Alphanumeric Designation . . . 356
ISM: Jets and Outflows . . . 359
ISM: Kinematics and Dynamics . . . 360
ISM: Lines and Bands . . . 361
ISM: Magnetic Fields . . . 361
ISM: Molecules . . . 362
ISM: Planetary Nebulae: General . . . 363
ISM: Planetary Nebulae: Individual
By Name . . . 364
By NGC Number . . . 364
By Alphanumeric Designation . . . 364
ISM: Reflection Nebulae . . . 364
ISM: Structure . . . 364
ISM: Supernova Remnants . . . 365
Kuiper Belt . . . 367
Line: Formation . . . 367
Line: Identification . . . 367
Line: Profiles . . . 368
Magnetic Fields . . . 368
See also Galaxies: Magnetic Fields,
ISM: Magnetic Fields,
Stars: Magnetic Fields
Magnetohydrodynamics: MHD . . . 369
Masers . . . 372
Meteors, Meteoroids . . . 372
Methods: Analytical . . . 372
Methods: Data Analysis . . . 373
Methods: Laboratory . . . 374
Methods: *N*-Body Simulations . . . 374
Methods: Numerical . . . 375
Methods: Statistical . . . 377
Minor Planets, Asteroids . . . 377
Molecular Data . . . 377
Molecular Processes . . . 378
Moon . . . 379
Nebulae: Individual
By Name . . . 379
Nebulae: Supernova Remnants . . . 379
See also ISM: Supernova Remnants
Neutrinos . . . 379
Nuclear Reactions . . . 579
Nuclear Reactions, Nucleosynthesis, Abundances . . . 379
Occultations . . . 380
Planets: Rings . . . 380
Planets and Satellites: Formation . . . 380
Planets and Satellites: General . . . 381
Planets and Satellites: Individual
Epsilon Ring . . . 381
HD 209458b . . . 381
Jupiter . . . 381
Mars . . . 381
Nereid . . . 381

Saturn . . . 381
Titan . . . 381
Uranus . . . 381
Plasmas . . . 381
Polarization . . . 382
Radiation Mechanisms: General . . . 383
Radiation Mechanisms: Nonthermal . . . 383
Radiation Mechanisms: Thermal . . . 384
Radiative Transfer . . . 384
Radio Continuum: Galaxies . . . 385
Radio Continuum: General . . . 386
Radio Continuum: ISM . . . 386
Radio Continuum: Stars . . . 386
Radio Lines: Galaxies . . . 387
Radio Lines: General . . . 387
Radio Lines: ISM . . . 387
Radio Lines: Stars . . . 388
Relativity . . . 389
Scattering . . . 389
Shock Waves . . . 390
Solar System: Formation . . . 391
Solar System: General . . . 391
Space Vehicles . . . 391
Space Vehicles: Instruments . . . 391
Stars: Abundances . . . 392
Stars: Activity . . . 393
Stars: AGB and Post-AGB . . . 393
Stars: Atmospheres . . . 394
Stars: Binaries: Close . . . 395
Stars: Binaries: Eclipsing . . . 396
Stars: Binaries: General . . . 397
Stars: Binaries: Spectroscopic . . . 398
Stars: Binaries: Symbiotic . . . 398
Stars: Binaries: Visual . . . 398
Stars: Blue Stragglers . . . 398
Stars: Carbon . . . 398
Stars: Cepheids . . . 398
Stars: Chemically Peculiar . . . 398
Stars: Chromospheres . . . 398
Stars: Circumstellar Matter . . . 398
Stars: Coronae . . . 400
Stars: Distances . . . 401
Stars: Dwarf Novae . . . 401
Stars: Early-Type . . . 401
Stars: Emission-Line, Be . . . 402
Stars: Evolution . . . 402
Stars: Flare . . . 403
Stars: Formation . . . 403
Stars: Fundamental Parameters . . . 404
Stars: Hertzsprung-Russell Diagram . . . 407
Stars: Horizontal-Branch . . . 407
See also Stars: Population II
Stars: Imaging . . . 407
Stars: Individual
By Constellation Name . . . 407
By Bright Star Number . . . 411
By Henry Draper Number . . . 411
By Name . . . 412
By Alphanumeric Designation . . . 413
Stars: Interiors . . . 417
Stars: Kinematics . . . 417
Stars: Late-Type . . . 417
Stars: Low-Mass, Brown Dwarfs . . . 418
Stars: Luminosity, Mass Function . . . 419
Stars: Magnetic Fields . . . 419
Stars: Mass Loss . . . 420
Stars: Neutron . . . 421
Stars: Novae, Cataclysmic Variables . . . 423
Stars: Oscillations . . . 424
Stars: Planetary Systems . . . 425
Stars: Planetary Systems: Formation . . . 426
Stars: Planetary Systems: Protoplanetary Disks . . . 427
Stars: Population II . . . 427
Stars: Pre–Main-Sequence . . . 427
Stars: Pulsars: General . . . 429
Stars: Pulsars: Individual
By Name . . . 430
By Alphanumeric Designation . . . 430
Stars: Rotation . . . 432
Stars: Spots . . . 432
Stars: Statistics . . . 432
Stars: Subdwarfs . . . 432
Stars: Supergiants . . . 433
Stars: Supernovae: General . . . 433
Stars: Supernovae: Individual
By Name . . . 434
By Alphanumeric Designation . . . 434
Stars: Variables: Cepheids . . . 436
Stars: Variables: Other . . . 436
Stars: White Dwarfs . . . 436
Stars: Winds, Outflows . . . 438
See also Stars: Mass-Loss
Stars: Wolf-Rayet . . . 439
Stellar Dynamics . . . 439
Submillimeter . . . 440
Sun: Abundances . . . 440
Sun: Activity . . . 440
Sun: Atmosphere . . . 441
Sun: Atmospheric Motions . . . 441
See also Sun: Atmosphere
Sun: Chromosphere . . . 441
Sun: Corona . . . 442
Sun: Coronal Mass Ejections (CMEs) . . . 444
Sun: Evolution . . . 444
Sun: Faculae, Plages . . . 444
Sun: Filaments . . . 444
Sun: Flares . . . 444
Sun: Fundamental Parameters . . . 446
Sun: Granulation . . . 446

Sun: Helioseismology . . . 446
Sun: Infrared . . . 446
Sun: Interior . . . 446
Sun: Magnetic Fields . . . 447
Sun: Oscillations . . . 448
Sun: Particle Emission . . . 449
Sun: Photosphere . . . 449
Sun: Prominences . . . 450
Sun: Radio Radiation . . . 450
Sun: Rotation . . . 450
Sun: Solar-Terrestrial Relations . . . 450
Sun: Solar Wind . . . 450
Sun: Sunspots . . . 451
Sun: Transition Region . . . 451
Sun: UV Radiation . . . 452
Sun: X-Rays, Gamma Rays . . . 452
Surveys . . . 453
Techniques: High Angular Resolution . . . 454
Techniques: Image Processing . . . 455
Techniques: Interferometric . . . 455
Techniques: Miscellaneous . . . 455
Techniques: Photometric . . . 455
Techniques: Polarimetric . . . 456
Techniques: Radial Velocities . . . 456
Techniques: Spectroscopic . . . 456
Telescopes . . . 457
Turbulence . . . 457
Ultraviolet: Galaxies . . . 458
Ultraviolet: General . . . 459
Ultraviolet: ISM . . . 459
Ultraviolet: Solar System . . . 459
Ultraviolet: Stars . . . 459
Waves . . . 460
X-Rays: Binaries . . . 460
See also X-Rays: Stars
X-Rays: Bursts . . . 462
X-Rays: Diffuse Background . . . 462
X-Rays: Galaxies . . . 462
X-Rays: Galaxies: Clusters . . . 465
X-Rays: General . . . 466
X-Rays: Individual
By Constellation Name . . . 467
By Name . . . 467
By Alphanumeric Designation . . . 467
X-Rays: ISM . . . 467
X-Rays: Stars . . . 468

SUBJECT INDEX

ACCELERATION OF PARTICLES

X-Ray Jet Emission from the Black Hole X-Ray Binary XTE J1550−564 with *Chandra* in 2000. *John A. Tomsick, Stéphane Corbel, Rob Fender, Jon M. Miller, Jerome A. Orosz, Tasso Tzioumis, Rudy Wijnands, & Philip Kaaret.* 582, 933 (2003)

Nonthermal Radiation from Clusters of Galaxies: The Role of Merger Shocks in Particle Acceleration. *Stefano Gabici & Pasquale Blasi.* 583, 695 (2003)

Nonthermal Emissions from Particles Accelerated by Turbulence in Clusters of Galaxies. *Yutaka Fujita, Motokazu Takizawa, & Craig L. Sarazin.* 584, 190 (2003)

General Relativistic Electromagnetism and Particle Acceleration in Pulsar Polar Cap. *Nobuyuki Sakai & Shinpei Shibata.* 584, 427 (2003)

Electron Acceleration by Lower Hybrid Turbulence in Solar Flares. *Q. Y. Luo, F. S. Wei, & X. S. Feng.* 584, 497 (2003)

On the Magnetic Fields and Particle Acceleration in Cassiopeia A. *Jacco Vink & J. Martin Laming.* 584, 758 (2003)

Optically Thick Gyrosynchrotron Emission from Anisotropic Electron Distributions. *G. D. Fleishman & V. F. Melnikov.* 584, 1071 (2003)

Lepton Acceleration by Relativistic Collisionless Magnetic Reconnection. *D. A. Larrabee, R. V. E. Lovelace, & M. M. Romanova.* 586, 72 (2003)

Cause of Proton Depletion in Solar Impulsive Particle Events. *K. Ohki.* 586, 617 (2003)

Evolution of Conjugate Footpoints inside Flare Ribbons during a Great Two-Ribbon Flare on 2001 April 10. *Ayumi Asai, Takako T. Ishii, Hiroki Kurokawa, Takaaki Yokoyama, & Masumi Shimojo.* 586, 624 (2003)

The Origin of High-Energy ^{3}He-rich Solar Particle Events. *L. Kocharov & J. Torsti.* 586, 1430 (2003)

The Identification of Infrared Synchrotron Radiation from Cassiopeia A. *T. J. Jones, L. Rudnick, T. DeLaney, & J. Bowden.* 587, 227 (2003)

Gyrosynchrotron Emission from Anisotropic Electron Distributions. *G. D. Fleishman & V. F. Melnikov.* 587, 823 (2003)

Extended Acceleration in Slot Gaps and Pulsar High-Energy Emission. *Alex G. Muslimov & Alice K. Harding.* 588, 430 (2003)

Observation of GeV Solar Energetic Particles from the 1997 November 6 Event Using Milagrito. *A. Falcone, R. Atkins, W. Benbow, D. Berley, M. L. Chen, D. G. Coyne, B. L. Dingus, D. E. Dorfan, R. W. Ellsworth, L. Fleysher, R. Fleysher, G. Gisler, J. A. Goodman, T. J. Haines, C. M. Hoffman, S. Hugenberger, L. A. Kelley, I. Leonor, J. F. McCullough, J. E. McEnery, R. S. Miller, A. I. Mincer, M. F. Morales, P. Nemethy, J. M. Ryan, B. Shen, A. Shoup, G. Sinnis, A. J. Smith, G. W. Sullivan, T. Tumer, K. Wang, M. O. Wascko, S. Westerhoff, D. A. Williams, T. Yang, & G. B. Yodh.* 588, 557 (2003)

An Explanation for Large Enhancements of Nitrogen Relative to Carbon and Oxygen in Solar ^{3}He-rich Events. *T. X. Zhang & J. X. Wang.* 588, L57 (2003)

Diffuse Hard X-Ray Sources Discovered with the *ASCA* Galactic Plane Survey. *Aya Bamba, Masaru Ueno, Katsuji Koyama, & Shigeo Yamauchi.* 589, 253 (2003)

Small-Scale Structure of the SN 1006 Shock with *Chandra* Observations. *Aya Bamba, Ryo Yamazaki, Masaru Ueno, & Katsuji Koyama.* 589, 827 (2003)

Magnetars in the Metagalaxy: An Origin for Ultra–High-Energy Cosmic Rays in the Nearby Universe. *Jonathan Arons.* 589, 871 (2003)

Particle Transport in Tangled Magnetic Fields and Fermi Acceleration at Relativistic Shocks. *Martin Lemoine & Guy Pelletier.* 589, L73 (2003)

X-Ray Spectra of Young Pulsars and Their Wind Nebulae: Dependence on Spin-Down Energy Loss Rate. *E. V. Gotthelf.* 591, 361 (2003)

Cosmic-Ray Spectra at Spherical Termination Shocks. *V. Florinski & J. R. Jokipii.* 591, 454 (2003)

Modeling Shock-accelerated Solar Energetic Particles Coupled to Interplanetary Alfvén Waves. *C. K. Ng, D. V. Reames, & A. J. Tylka.* 591, 461 (2003)

On Particle Acceleration around Shocks. I. *Mario Vietri.* 591, 954 (2003)

Near-Infrared Synchrotron Emission from Cassiopeia A. *Jeonghee Rho, Stephen P. Reynolds, William T. Reach, Tom H. Jarrett, Glenn E. Allen, & John C. Wilson.* 592, 299 (2003)

Radiative Acceleration and Transient, Radiation-induced Electric Fields. *L. Zampieri, R. Turolla, L. Foschini, & A. Treves.* 592, 368 (2003)

On the Generation of Ultra–High-Energy Cosmic Rays in Gamma-Ray Bursts: A Reappraisal. *Mario Vietri, Daniel De Marco, & Dafne Guetta.* 592, 378 (2003)

Grain Acceleration by Magnetohydrodynamic Turbulence: Gyroresonance Mechanism. *Huirong Yan & A. Lazarian.* 592, L33 (2003)

Pulsar PSR B0656+14, the Monogem Ring, and the Origin of the "Knee" in the Primary Cosmic-Ray Spectrum. *S. E. Thorsett, R. A. Benjamin, Walter F. Brisken, A. Golden, & W. M. Goss.* 592, L71 (2003)

RXTE, *ROSAT*, and *ASCA* Observations of G347.3−0.5 (RX J1713.7−3946): Probing Cosmic-Ray Acceleration by a Galactic Shell-Type Supernova Remnant. *Thomas G. Pannuti, Glenn E. Allen, John C. Houck, & Steven J. Sturner.* 593, 377 (2003)

Decimetric Spike Bursts versus Microwave Continuum. *Gregory D. Fleishman, Dale E. Gary, & Gelu M. Nita.* 593, 571 (2003)

Generation of Suprathermal Electrons by Resonant Wave-Particle Interaction in the Solar Corona and Wind. *C. Vocks & G. Mann.* 593, 1134 (2003)

Nonthermal Particles and Radiation Produced by Cluster Merger Shocks. *Robert C. Berrington & Charles D. Dermer.* 594, 709 (2003)

Diffusive-Compression Acceleration and Turbulent Diffusion of Cosmic Rays in Quasi-periodic and Turbulent Flows. *G. M. Webb, C. M. Ko, G. P. Zank, & J. R. Jokipii.* 595, 195 (2003)

Particle Acceleration in Relativistic Jets due to Weibel Instability. *K.-I. Nishikawa, P. Hardee, G. Richardson, R. Preece, H. Sol, & G. J. Fishman.* 595, 555 (2003)

RHESSI Observations of Particle Acceleration and Energy Release in an Intense Solar Gamma-Ray Line Flare. *R. P. Lin, S. Krucker, G. J. Hurford, D. M. Smith, H. S. Hudson, G. D. Holman, R. A. Schwartz, B. R. Dennis, G. H. Share, R. J. Murphy, A. G. Emslie, C. Johns-Krull, & N. Vilmer.* 595, L69 (2003)

Physical Implications of *RHESSI* Neutron-Capture Line Measurements. *R. J. Murphy, G. H. Share, X.-M. Hua, R. P. Lin, D. M. Smith, & R. A. Schwartz.* 595, L93 (2003)

Hard X-Ray Source Motions in the 2002 July 23 Gamma-Ray Flare. *Säm Krucker, G. J. Hurford, & R. P. Lin.* 595, L103 (2003)

Interpenetrating Plasma Shells: Near-Equipartition Magnetic Field Generation and Nonthermal Particle Acceleration. *L. O. Silva, R. A. Fonseca, J. W. Tonge, J. M. Dawson, W. B. Mori, & M. V. Medvedev.* 596, L121 (2003)

A Kinsip between the EGRET Supernova Remnants and Sagittarius A East. *Marco Fatuzzo & Fulvio Melia.* 596, 1035 (2003)

Preferential Heating of Particles by H-Cyclotron Waves Generated by a Global Magnetohydrodynamic Mode in Solar Coronal Holes. *T. X. Zhang.* 597, L69 (2003)

Test Particle Acceleration in Three-dimensional Magnetohydrodynamic Turbulence. *P. Dmitruk, W. H. Matthaeus, N. Seenu, & M. R. Brown.* 597, L81 (2003)

Detection of the High-Energy Cosmic Rays from the Monogem Ring. *A. Chilingarian, H. Martirosia, & G. Gharagyozyan.* 597, L129 (2003)

Particle Acceleration by Slow Modes in Strong Compressible Magnetohydrodynamic Turbulence, with Application to Solar Flares. *Benjamin D. G. Chandran.* 599, 1426 (2003)

ACCRETION, ACCRETION DISKS

Accretion of Low Angular Momentum Material onto Black Holes: Two-dimensional Hydrodynamical Inviscid Case. *Daniel Proga & Mitchell C. Begelman.* 582, 69 (2003)

The X-Ray Spectrum of the Seyfert 1 Galaxy Markarian 766: Dusty Warm Absorber or Relativistic Emission Lines? *K. O. Mason, G. Branduardi-Raymont, P. M. Ogle, M. J. Page, E. M. Puchnarewicz, E. Behar, F. A. Córdova, S. Davis, L. Maraschi, I. M. McHardy, P. T. O'Brien, W. C. Priedhorsky, & T. P. Sasseen.* 582, 95 (2003)

Accretion onto the Supermassive Black Hole in M87. *Tiziana Di Matteo, Steven W. Allen, Andrew C. Fabian, Andrew S. Wilson, & Andrew J. Young.* 582, 133 (2003)

Three-Dimensional Simulations of Jets from Keplerian Disks: Self-Regulatory Stability. *Rachid Ouyed, David A. Clarke, & Ralph E. Pudritz.* 582, 292 (2003)

Pseudo-Newtonian Potentials to Describe the Temporal Effects on Relativistic Accretion Disks around Rotating Black Holes and Neutron Stars. *Banibrata Mukhopadhyay & Ranjeev Misra.* 582, 347 (2003)

Composite Accretion Disk and White Dwarf Model Analyses of the Quiescence of Dwarf Novae: EM Cygni, CZ Orionis, and WW Ceti. *Lisa Winter & Edward M. Sion.* 582, 352 (2003)

Evidence for Optical Flares in Quiescent Soft X-Ray Transients. *C. Zurita, J. Casares, & T. Shahbaz.* 582, 369 (2003)

A Reduced Efficiency of Terrestrial Planet Formation Following Giant Planet Migration. *Philip J. Armitage.* 582, L47 (2003)

Turbulence in Accretion Disks: Vorticity Generation and Angular Momentum Transport via the Global Baroclinic Instability. *H. H. Klahr & P. Bodenheimer.* 582, 869 (2003)

X-Ray Jet Emission from the Black Hole X-Ray Binary XTE J1550−564 with *Chandra* in 2000. *John A. Tomsick, Stéphane Corbel, Rob Fender, Jon M. Miller, Jerome A. Orosz, Tasso Tzioumis, Rudy Wijnands, & Philip Kaaret.* 582, 933 (2003)

A Disk-Jet Interaction Model for the X-Ray Variability in Microquasars. *L. Nobili.* 582, 954 (2003)

Hydrodynamic Models of Line-driven Accretion Disk Winds. III. Local Ionization Equilibrium. *Nicolas Antonio Pereyra & Timothy R. Kallman.* 582, 984 (2003)

SMC X-1 as an Intermediate-Stage Flaring X-Ray Pulsar. *Dae-Sik Moon, Stephen S. Eikenberry, & Ira M. Wasserman.* 582, L91 (2003)

Chandra Snapshot Observations of Low-Luminosity Active Galactic Nuclei with a Compact Radio Source. *Yuichi Terashima & Andrew S. Wilson.* 583, 145 (2003)

Correlated Timing and Spectral Behavior of 4U 1705−44. *Jean-Francois Olive, Didier Barret, & Marek Gierlinski.* 583, 416 (2003)

Detection of Gaps in Circumstellar Disks. *J. Steinacker & Th. Henning.* 583, L35 (2003)

Chandra and *XMM* Observations of the Accretion Disk Corona Source 0921−63. *T. R. Kallman, L. Angelini, B. Boroson, & J. Cottam.* 583, 861 (2003)

Carbon-Oxygen White Dwarfs Accreting CO-rich Matter. I. A Comparison between Rotating and Nonrotating Models. *Luciano Piersanti, Simona Gagliardi, Icko Iben, Jr., & Amedeo Tornambé.* 583, 885 (2003)

Photodisintegration-triggered Nuclear Energy Release in Superbursts. *Hendrik Schatz, Lars Bildsten, & Andrew Cumming.* 583, L87 (2003)

Dynamical Evidence for a Black Hole in GX 339−4. *R. I. Hynes, D. Steeghs, J. Casares, P. A. Charles, & K. O'Brien.* 583, L95 (2003)

Excitation of Orbital Eccentricities by Repeated Resonance Crossings: Requirements. *E. I. Chiang.* 584, 465 (2003)

Low-Frequency Coherence Break in the Soft X-Ray State of GRS 1915+105. *Jian Feng Ji, Shuang Nan Zhang, Jia Lu Qu, & Ti Pei Li.* 584, L23 (2003)

A New X-Ray Flare from the Galactic Nucleus Detected with the *XMM-Newton* Photon Imaging Cameras. *A. Goldwurm, E. Brion, P. Goldoni, P. Ferrando, F. Daigne, A. Decourchelle, R. S. Warwick, & P. Predehl.* 584, 751 (2003)

Stability of Standing Accretion Shocks, with an Eye toward Core-Collapse Supernovae. *John M. Blondin, Anthony Mezzacappa, & Christine DeMarino.* 584, 971 (2003)

Flux Enhancement in the Inner Region of a Geometrically and Optically Thick Accretion Disk. *R. Misra & K. Sriram.* 584, 981 (2003)

XTE J1946+271 = GRO J1944+26: An Enigmatic Be/X-Ray Binary. *Colleen A. Wilson, Mark H. Finger, M. J. Coe, & Ignacio Negueruela.* 584, 996 (2003)

CH Cygni. I. Observational Evidence for a Disk-Jet Connection. *J. L. Sokoloski & S. J. Kenyon.* 584, 1021 (2003)

CH Cygni. II. Optical Flickering from an Unstable Disk. *J. L. Sokoloski & S. J. Kenyon.* 584, 1027 (2003)

Origin and Interpretation of Kilohertz Quasi-periodic Oscillations from Strange Stars in an X-Ray Binary Systems: Theoretical Hydrodynamical Description. *Banibrata Mukhopadhyay, Subharthi Ray, Jishnu Dey, & Mira Dey.* 584, L83 (2003)

Numerical Simulations of Mass Outflows Driven from Accretion Disks by Radiation and Magnetic Forces. *Daniel Proga.* 585, 406 (2003)

p-Process Nucleosynthesis inside Supernova-driven Supercritical Accretion Disks. *Shin-ichirou Fujimoto, Masa-aki Hashimoto, Osamu Koike, Kenzo Arai, & Ryuichi Matsuba.* 585, 418 (2003)

Global Three-dimensional Magnetohydrodynamic Simulations of Black Hole Accretion Disks: X-Ray Flares in the Plunging Region. *Mami Machida & Ryoji Matsumoto.* 585, 429 (2003)

The Optical Light Curves of XTE J2123−058. III. The Mass of the Binary Components and the Structure of the Quiescent Accretion Disk. *T. Shahbaz, C. Zurita, J. Casares, G. Dubus, P. A. Charles, R. Mark Wagner, & E. Ryan.* 585, 443 (2003)

Diffuse X-Rays from a Distributed Component of Dark Surrounding Sagittarius A*. *Martin Pessah & Fulvio Melia.* 585, L29 (2003)

Local Magnetohydrodynamic Models of Layered Accretion Disks. *Timothy Fleming & James M. Stone.* 585, 908 (2003)

Halting Planet Migration by Photoevaporation from the Central Source. *Isamu Matsuyama, Doug Johnstone, & Norman Murray.* 585, L143 (2003)

Interchange Method in Compressible Magnetized Couette Flow: Magnetorotational and Magnetoconvective Instabilities. *Dimitris M. Christodoulou, John Contopoulos, & Demosthenes Kazanas.* 586, 372 (2003)

Eddington Limit and Radiative Transfer in Highly Inhomogeneous Atmospheres. *Mateusz Ruszkowski & Mitchell C. Begelman.* 586, 384 (2003)

Two-dimensional Monte Carlo/Fokker-Planck Simulations of Flares in Accretion Disk Corona Models. *M. Böttcher, D. R. Jackson, & E. P. Liang.* 586, 389 (2003)

Modeling Accretional Heating in Dwarf Novae. *Patrick Godon & Edward M. Sion.* 586, 427 (2003)

Orbital Migration and Mass Accretion of Protoplanets in Three-dimensional Global Computations with Nested Grids. *Gennaro D'Angelo, Willy Kley, & Thomas Henning.* 586, 540 (2003)

Variability of Sagittarius A*: Flares at 1 Millimeter. *Jun-Hui Zhao, K. H. Young, R. M. Herrnstein, P. T. P. Ho, T. Tsutsumi, K. Y. Lo, W. M. Goss, & G. C. Bower.* 586, L29 (2003)

Excavation of the First Stars. *Toshikazu Shigeyama, Takuji Tsujimoto, & Yuzuru Yoshii.* 586, L57 (2003)

Nucleosynthesis in Gamma-Ray Burst Accretion Disks. *Jason Pruet, S. E. Woosley, & R. D. Hoffman.* 586, 1254 (2003)

Stability of Accretion Disk around Rotating Black Holes: A Pseudo–General-Relativistic Fluid Dynamical Study. *Banibrata Mukhopadhyay.* 586, 1268 (2003)

The Evolution of LMC X-4 Flares: Evidence for Super Eddington Radiation Oosing through Inhomogeneous Polar Cap Accretion Flows? *Dae-Sik Moon, Stephen S. Eikenberry, & Ira M. Wasserman.* 586, 1280 (2003)

A Local One-Zone Model of Magnetohydrodynamic Turbulence in Dwarf Nova Disks. *Takayoshi Sano & James M. Stone.* 586, 1297 (2003)

Some Nucleosynthesis Effects Associated with *r*-Process Jets. *A. G. W. Cameron.* 587, 327 (2003)

Saturation of the Corotation Resonance in a Gaseous Disk. *G. I. Ogilvie & S. H. Lubow.* 587, 398 (2003)

Spectra from a Magnetic Reconnection–heated Corona in Active Galactic Nuclei. *B. F. Liu, S. Mineshige, & K. Ohsuga.* 587, 571 (2003)

Chandra Survey of Radio-quiet, High-Redshift Quasars. *Jill Bechtold, Aneta Siemiginowska, Joseph Shields, Bozena Czerny, Agnieszka Janiuk, Fred Hamann, Thomas L. Aldcroft, Martin Elvis, & Adam Dobrzycki.* 588, 119 (2003)

The X-Ray–faint Emission of the Supermassive Nuclear Black Hole of IC 1459. *G. Fabbiano, M. Elvis, S. Markoff, A. Siemiginowska, S. Pellegrini, A. Zezas, F. Nicastro, G. Trinchieri, & J. McDowell.* 588, 175 (2003)

The Circumstellar Disk of the Butterfly Star in Taurus. *Sebastian Wolf, Deborah L. Padgett, & Karl R. Stapelfeldt.* 588, 373 (2003)

Magnetohydrodynamic Simulations of Accretion to a Star in the "Propeller" Regime. *M. M. Romanova, O. D. Toropina, Yu. M. Toropin, & R. V. E. Lovelace.* 588, 400 (2003)

Inner Boundary Conditions for Advection-dominated Accretion onto Black Holes. *Peter A. Becker & Truong Le.* 588, 408 (2003)

An *XMM-Newton* Observation during the 2000 Outburst of SAX J1808.4−3658. *Rudy Wijands.* 588, 425 (2003)

X-Ray Studies of Two Neutron Stars in 47 Tucanae: Toward Constraints on the Equation of State. *C. O. Heinke, J. E. Grindlay, D. A. Lloyd, & P. D. Edmonds.* 588, 452 (2003)

Runaway Migration and the Formation of Hot Jupiters. *F. S. Masset & J. C. B. Papaloizou.* 588, 494 (2003)

Nuclear Composition of Gamma-Ray Burst Fireballs. *Andrei M. Beloborodov.* 588, 931 (2003)

Role of Shocked Accretion Flows in Regulating the Quasi-Periodic Oscillation of Galactic Black Hole Candidates. *Tapas K. Das.* 588, L89 (2003)

Magnetic Star-Disk Coupling in Classical T Tauri Systems. *Manfred Küker, Thomas Henning, & Günther Rüdiger.* 589, 397 (2003)

HARM: A Numerical Scheme for General Relativistic Magnetohydrodynamics. *Charles F. Gammie, Jonathan C. McKinney, & Gábor Tóth.* 589, 444 (2003)

A Numerical Method for General Relativistic Magnetohydrodynamics. *Jean-Pierre De Villiers & John F. Hawley.* 589, 458 (2003)

Coupling between Periodic and Aperiodic Variability in SAX J1808.4−3658. *M. T. Menna, L. Burderi, L. Stella, N. Robba, & M. van der Klis.* 589, 503 (2003)

The Lack of Broad-Line Regions in Low Accretion Rate Active Galactic Nuclei as Evidence of Their Origin in the Accretion Disk. *Fabrizio Nicastro, Andrea Martocchia, & Giorigo Matt.* 589, L13 (2003)

Hard X-Ray Flares Preceding Soft X-Ray Outbursts in Aquila X-1: A Link between Neutron Star and Black Hole Transitions. *Wenfei Yu, Marc Klein-Wolt, Rob Fender, & Michiel van der Klis.* 589, L33 (2003)

An Accretion Model for the Growth of the Central Black Hole Associated with Ionization Instability in Quasars. *Y. Lu, K. S. Cheng, & S. N. Zhang.* 590, 52 (2003)

X-Ray Pulses from Accretion Columns: Contributions to the Energy Dependence of the Pulse Shape. *U. Kraus, C. Zahn, C. Weth, & H. Ruder.* 590, 424 (2003)

Discrete X-Ray Signatures of a Photoionized Plasma above the Accretion Disk of the Neutron Star EXO 0748−676. *M. A. Jimenez-Garate, N. S. Schulz, & H. L. Marshall.* 590, 432 (2003)

Stellar Disk in the Galactic Center: A Remnant of a Dense Accretion Disk? *Yuri Levin & Andrei M. Beloborodov.* 590, L33 (2003)

The 590 Day Long-Term Periodicity of the Microquasar GRS 1915+105. *A. Rau, J. Greiner, & M. L. McCollough.* 590, L37 (2003)

The Complete Z-Diagram of LMC X-2. *A. P. Smale, J. Homan, & E. Kuulkers.* 590, 1035 (2003)

Bowen Flourescence from the Companion Star in X1822−371. *J. Casares, D. Steeghs, R. I. Hynes, P. A. Charles, & K. O'Brien.* 590, 1041 (2003)

A *Chandra* X-Ray Study of NGC 1068. II. The Luminous X-Ray Source Population. *David A. Smith & Andrew S. Wilson.* 591, 138 (2003)

Rayleigh-Taylor Gravity Waves and Quasi-periodic Oscillation Phenomena in X-Ray Binaries. *Lev Titarchuk.* 591, 354 (2003)

Natural Coronagraphics Observations of the Eclipsing T Tauri System KH 15D: Evidence of Accretion and Bipolar Outflow in a Weak-Line T Tauri Star. *Catrina M. Hamilton, William Herbst, Reinhard Mundt, Coryn A. L. Bailer-Jones, & Christopher M. Johns-Krull.* 591, L45 (2003)

Timescales of Soft X-Ray Variability and Physical Constraints in Active Galactic Nuclei. *W. Bian & Y. Zhao.* 591, 733 (2003)

Chandra X-Ray Spectroscopic Imaging of Sagittarius A* and the Central Parsec of the Galaxy. *F. K. Baganoff, Y. Maeda, M. Morris, M. W. Bautz, W. N. Brandt, W. Cui, J. P. Doty, E. D. Feigelson, G. P. Garmire, S. H. Pravdo, G. R. Ricker, & L. K. Townsley.* 591, 891 (2003)

WZ Sagittae: *FUSE* Spectroscopy of the 2001 Outburst. *Knox S. Long, Cynthia S. Froming, Boris Gänsicke, Christian Knigge, Edward M. Sion, & Paula Szkody.* 591, 1172 (2003)

Warping of Accretion Disks with Magnetically Driven Outflows: A Possible Origin for Jet Precession. *Dong Lai.* 591, L119 (2003)

The Effects of UV Continuum and Lyα Radiation on the Chemical Equilibrium of T Tauri Disks. *Edwin Bergin, Nuria Calvet, Paola D'Alessio, & Gregory J. Herczeg.* 591, L159 (2003)

XMM-Newton Observation of Broad Iron Kα Emission from Seyfert 1.9 Galaxy MCG −5-23-16. *G. C. Dewangan, R. E. Griffiths, & N. J. Schurch.* 592, 52 (2003)

Accretion in Young Stellar/Substellar Objects. *James Muzerolle, Lynne Hillenbrand, Nuria Calvet, César Briceño, & Lee Hartmann.* 592, 266 (2003)

Numerical Simulations of Astrophysical Jets from Keplerian Disks with Periodic Ejection. *B. F. Vitorino, V. Jatenco-Pereira, & R. Opher.* 592, 332 (2003)

Geometrically Thin Disk Accreting into a Black Hole. *N. Afshordi & B. Paczyński.* 592, 354 (2003)

The X-Ray Spectral Changes of Scorpius X-1. *C. F. Bradshaw, B. J. Geldzahler, & E. B. Fomalont.* 592, 486 (2003)

On Resonance-Line Profiles Predicted by Radiation-driven Disk-Wind Models. *Daniel Proga.* 592, L9 (2003)

Accretion of Low Angular Momentum Material onto Black Holes: Two-dimensional Magnetohydrodynamic Case. *Daniel Proga & Mitchell C. Begelman.* 592, 767 (2003)

Spiral Arms in Accretion Discs Encounters. *S. Pfalzner.* 592, 986 (2003)

Three-dimensional Magnetohydrodynamic Simulations of Radiatively Inefficient Accretion Flows. *Igor V. Igumenshchev, Ramesh Narayan, & Marek A. Abramowicz.* 592, 1042 (2003)

Global General Relativistic Magnetohydrodynamic Simulations of Accretion Tori. *Jean-Pierre De Villiers & John F. Hawley.* 592, 1060 (2003)

Multitransonic Black Hole Accretion Disks with Isothermal Standing Shocks. *Tapas K. Das, Jayant K. Pendharkar, & Sanjit Mitra.* 592, 1078 (2003)

The Contribution of Particle Impact to the Production of Fe Kα Emission from Accreting Black Holes. *D. R. Ballantyne & A. C. Fabian.* 592, 1089 (2003)

X-Ray Flares and Oscillations from the Black Hole Candidate X-Ray Transient XTE J1650−500 at Low Luminosity. *John A. Tomsick, Emrah Kalemci, Stephane Corbel, & Philip Kaaret.* 592, 1100 (2003)

Spectral and Temporal Behavior of the Black Hole Candidate XTE J1118+480 as Observed with *BeppoSAX*. *F. Frontera, L. Amati, A. A. Zdziarski, T. Belloni, S. Del Sordo, N. Masetti, M. Orlandini, & E. Palazzi.* 592, 1110 (2003)

Cataclysmic Variable Evolution with Circumbinary Disks. *Ronald E. Taam, Eric L. Sandquist, & Guillaume Dubus.* 592, 1124 (2003)

A Simplified Model for an Evolving Protoplanetary Nebula. *Sanford S. Davis.* 592, 1193 (2003)

Black Hole Growth and Activity in a Λ Cold Dark Matter Universe. *Tiziana Di Matteo, Rupert A. C. Croft, Volker Springel, & Lars Hernquist.* 593, 56 (2003)

Comptonization in Super-Eddington Accretion Flow and Growth Timescale of Supermassive Black Holes. *Toshihiro Kawaguchi.* 593, 69 (2003)

Viscosity-driven Winds from Magnetized Accretion Disks. *Daizo Maruta & Osamu Kaburaki.* 593, 85 (2003)

The Disk-Jet Connection in Microquasars and Active Galactic Nuclei. *Mario Livio, J. E. Pringle, & A. R. King.* 593, 184 (2003)

Multiwavelength Spectrum of the Black Hole XTE J1118+480 in Quiescence. *Jeffrey E. McClintock, Ramesh Narayan, Michael R. Garcia, Jerome A. Orosz, Ronald A. Remillard, & Stephen S. Murray.* 593, 435 (2003)

Correlated Radio:X-Ray Emission in the Hard States of Galactic Microquasars. *M. Choudhury, A. R. Rao, S. V. Vadawale, & A. K. Jain.* 593, 452 (2003)

Magnetic Inhibition of Accretion and Observability of Isolated Old Neutron Stars. *O. D. Toropina, M. M. Romanova, Yu. M. Toropin, & R. V. E. Lovelace.* 593, 472 (2003)

Surface Outflow in Optically Thick Dust Disks by Radiation Pressure. *Taku Takeuchi & D. N. C. Lin.* 593, 524 (2003)

Eddington Accretion and QSO Emission Lines at $z \sim 2$. *Michael Juntao Yuan & Beverley J. Wills.* 593, L11 (2003)

The Bursting Behavior of 4U 1728−34: The Parameters of a Neutron Star and the Geometry of a Neutron Star–Disk System. *Nickolai Shaposhnikov, Lev Titarchuk, & Frank Haberl.* 593, L35 (2003)

First Detection of Millimeter Dust Emission from Brown Dwarf Disks. *R. Klein, D. Apai, I. Pascucci, Th. Henning, & L. B. F. M. Waters.* 593, L57 (2003)

The Jet-Disk Connection and Blazar Unification. *Laura Maraschi & Fabrizio Tavecchio.* 593, 667 (2003)

Nonaxisymmetric g-Mode and p-Mode Instability in a Hydrodynamic Thin Accretion Disk. *Li-Xin Li, Jeremy Goodman, & Ramesh Narayan.* 593, 980 (2003)

Local Three-dimensional Simulations of Magnetorotational Instability in Radiation-dominated Accretion Disks. *N. J. Turner, J. M. Stone, J. H. Krolik, & T. Sano.* 593, 992 (2003)

X-Ray Dip Monitoring of XB 1916−053. *T. Narita, J. E. Grindlay, P. F. Bloser, & Y. Chou.* 593, 1007 (2003)

Ultraviolet Spectra of Cataclysmic Variable Accretion Disks with Nonsteady $T(r)$ Laws. *Jerome A. Orosz & Richard A. Wade.* 593, 1032 (2003)

On the Enhanced X-Ray Emission from SGR 1900+14 after the August 27 Giant Flare. *Ü. Ertan & M. A. Alpar.* 593, L93 (2003)

An *IUE* Atlas of Pre–Main-Sequence Stars. III. Co-Added Final Archive Spectra from the Long-Wavelength Cameras. *Jeff A. Valenti, Adam A. Fallon, & Christopher M. Johns-Krull.* 147, 305 (2003)

A New Method to Map Flares in Quasars. *Atsunori Yonehara, Shin Mineshige, Yoh Takei, George Chartas, & Edwin L. Turner.* 594, 107 (2003)

Neutron-rich Hydromagnetic Outflows in Gamma-Ray Burst Sources. *Nektarios Vlahakis, Fang Peng, & Arieh Königl.* 594, L23 (2003)

XMM-Newton Observation of the 5.25 Millisecond Transient Millisecond Pulsar XTE J1807−294 in Outburst. *S. Campana, M. Ravasio, G. L. Israel, V. Mangano, & T. Belloni.* 594, L39 (2003)

Bondi Accretion and the Problem of the Missing Isolated Neutron Stars. *Rosalba Perna, Ramesh Narayan, George Rybicki, Luigi Stella, & Aldo Treves.* 594, 936 (2003)

A *Chandra* Observation of the Neutron Star X-Ray Transient and Eclipsing Binary MXB 1659−29 in Quiescence. *Rudy Wijnands, Mike Nowak, Jon M. Miller, Jeroen Homan, Stefanie Wachter, & Walter H. H. Lewin.* 594, 952 (2003)

Luminous Hot Accretion Flows: Thermal Equilibrium Curve and Thermal Stability. *Feng Yuan.* 594, L99 (2003)

Magnetic Coupling of a Rotating Black Hole with Its Surrounding Accretion Disk. *Ding-Xiong Wang, Ren-Yi Ma, Wei-Hua Lei, & Guo-Zheng Yao.* 595, 109 (2003)

The Effect of Nonthermal Protons on the High-Energy Spectra of Black Hole Binaries. *S. Bhattacharyya, N. Bhatt, R. Misra, & C. L. Kaul.* 595, 317 (2003)

Pion Production in the Inner Disk Around Cygnus X-1. *Cesar Meirelles Filho, Celso L. Lima, Hideaki Miyake, & Varese Timoteo.* 595, 322 (2003)

Ballooning Modes in Thin Accretion Disks: Limits for Their Excitation. *B. Coppi & E. A. Keyes.* 595, 1000 (2003)

Three-Dimensional Simulations of Disk Accretion to an Inclined Dipole. I. Magnetospheric Flows at Different Θ. *M. M. Romanova, G. V. Ustyugova, A. V. Koldoba, J. V. Wick, & R. V. E. Lovelace.* 595, 1009 (2003)

Spectral Evolution of the Microquasar XTE J1550−564 over Its Entire 2000 Outburst. *J. Rodriguez, S. Corbel, & J. A. Tomsick.* 595, 1032 (2003)

Models of Type I X-Ray Bursts from 4U 1820−30. *Andrew Cumming.* 595, 1077 (2003)

A Reevaluation of the Super–Lithium-rich Star in NGC 6633. *Chris Laws & Guillermo Gonzalez.* 595, 1148 (2003)

Fe XXV and Fe XXVI Diagnostics of the Black Hole and Accretion Disk in Active Galaxies: *Chandra* Time-resolved Grating Spectroscopy of NGC 7314. *Tahir Yaqoob, Ian M. George, Timothy R. Kallman, Urmila Padmanabhan, Kimberly A. Weaver, & T. Jane Turner.* 596, 85 (2003)

Disk Properties and Density Structure of the Star-Forming Dense Core B335. *Daniel W. A. Harvey, David J. Wilner, Philip C. Myers, & Mario Tafalla.* 596, 383 (2003)

Black Hole Accretion Disks On The Edge. *Kristen Menou.* 596, 414 (2003)

Model for Relaxation Oscillations of a Luminous Accretion Disk in GRS 1915+105: Variable Inner Edge. *Ken-ya Watarai & Shin Mineshige.* 596, 421 (2003)

Spectral Energy Distribution in Supercritical Disk Accretion Flows through Photon-trapping Effects. *Ken Ohsuga, Shin Mineshige, & Ken-ya Watarai.* 596, 429 (2003)

Metal Lines in DA White Dwarfs. *B. Zuckerman, D. Koester, I. N. Reid, & M. Huensch.* 596, 477 (2003)

The Impact of Pollution on Stellar Evolution Models. *Aaron Dotter & Brian Chaboyer.* 596, 496 (2003)

Local Radiative Hydrodynamic and Magnetohydrodynamic Instabilities in Optically Thick Media. *Omer Blaes & Aristotle Socrates.* 596, 509 (2003)

Black Holes, Galaxy Formation, and the M_{BH}-σ Relation. *Andrew King.* 596, L27 (2003)

Testing the Binary Black Hole Paradigm through the Fe Kα Line Profile: Application to 3C 273. *Diego F. Torres, Gustavo E. Romero, Xavier Barcons, & Youjun Lu.* 596, L31 (2003)

Vortices in the Co-orbital Region of an Embedded Protoplanet. *Hui Li, Josef Koller, & Douglas N. C. Lin.* 596, L91 (2003)

Shadowing of the Nascent Jet in NGC 4261 by a Line-Emitting Supersonic Accretion Disk. *Siming Liu, Michael J. Fromerth, & Fulvio Melia.* 596, 879 (2003)

Transition from Collisionless to Collisional Magnetorotational Instability. *Prateek Sharma, Gregory W. Hammett, & Eliot Quataert.* 596, 1121 (2003)

Hollow Cone Accretion Columns and Light-Bending Effects. *D. A. Leahy.* 596, 1131 (2003)

Chandra Observations of the Faintest Low-Mass X-Ray Binaries. *Colleen A. Wilson, Sandeep K. Patel, Chryssa Kouveliotou, Peter G. Jonker, Michiel van der Klis, Walter H. G. Lewin, Tomaso Belloni, & Mariano Méndez.* 596, 1220 (2003)

A Fallback Disk Model for Ultraluminous X-Ray Sources. *Xiang-Dong Li.* 596, L199 (2003)

The Fate of Nonradiative Magnetized Accretion Flows: Magnetically Frustrated Convection. *Ue-Li Pen, Christopher D. Matzner, & Shingkwong Wong.* 596, L207 (2003)

Nonlinear Outcome of Gravitational Instability in Disks with Realistic Cooling. *Bryan M. Johnson & Charles F. Gammie.* 597, 131 (2003)

The Evolution of the High-Energy Tail in the Quiescent Spectrum of the Soft X-Ray Transient Aquila X-1. *S. Campana & L. Stella.* 597, 474 (2003)

Probing with the Inflow/Outflow and Accretion Disk of Cygnus X-1 in High State with the *Chandra* High Energy Transmission Grating. *Y. X. Feng, A. F. Tennant, & S. N. Zhang.* 597, 1017 (2003)

On the Origin of the Various Types of Radio Emission in GRS 1915+105. *S. V. Vadawale, A. R. Rao, S. Naik, J. S. Yadav, C. H. Ishwara-Chandra, A. Pramesh Rao, & G. G. Pooley.* 597, 1023 (2003)

Chandra Detections of Two Quiescent Black Hole X-Ray Transients. *John A. Tomsick, Stéphane Corbel, Rob Fender, Jon M. Miller, Jerome A. Orosz, Michael P. Rupen, Tasso Tzioumis, Rudy Wijnands, & Philip Kaaret.* 597, L133 (2003)

Unveiling the Inner Disk Structure of T Tauri Stars. *James Muzerolle, Nuria Calvet, Lee Hartmann, & Paola D'Alessio.* 597, L149 (2003)

A Method for Black Hole Mass Determination in Accretion-powered X-Ray Sources. *Chris R. Shrader & Lev Titarchuk.* 598, 168 (2003)

Nonthermal Electrons in Radiatively Inefficient Accretion Flow Models of Sagittarius A*. *Feng Yuan, Eliot Quataert, & Ramesh Narayan.* 598, 301 (2003)

Broad Redshifted Line as Signature of Outflow. *Lev Titarchuk, Demos Kazanas, & Peter A. Becker.* 598, 411 (2003)

The Origin of Jovian Planets in Protostellar Disks: The Role of Dead Zones. *Soko Matsumura & Ralph E. Pudritz.* 598, 645 (2003)

Cosmological Mestel Disks and the Rossby Vortex Instability: The Origin of Supermassive Black Holes. *Stirling A. Colgate, Renyue Cen, Hui Li, Nathan Currier, & Michael S. Warren.* 598, L7 (2003)

On the Formation Timescale and Core Masses of Gas Giant Planets. *W. K. M. Rice & Philip J. Armitage.* 598, L55 (2003)

Evolution of the Nuclear Accretion Disk Emission in NGC 1097: Getting Closer to the Black Hole. *Thaisa Storchi-Bergmann, Rodrigo Nemmen da Silva, Michael Eracleous, Jules P. Halpern, Andrew S. Wilson, Alexei V. Filippenko, Maria Teresa Ruiz, R. Chris Smith, & Neil M. Nagar.* 598, 956 (2003)

Carbon-Oxygen White Dwarf Accreting CO-Rich Matter. II. Self-Regulating Accretion Process up to the Explosive Stage. *Luciano Piersanti, Simona Gagliardi, Icko Iben, Jr., & Amedeo Tornambe.* 598, 1229 (2003)

Jet Formation in BL Lacertae Objects with Different Accretion Models. *Xinwu Cao.* 599, 147 (2003)

The Line Emission Region in III Zw 2: Kinematics and Variability. *L. Č. Popović, E. G. Mediavilla, E. Bon, N. Stanić, & A. Kubičela.* 599, 185 (2003)

Collapse of Magnetized Singular Isothermal Toroids. I. The Nonrotating Case. *Anthony Allen, Frank H. Shu, & Zhi-Yun Li.* 599, 351 (2003)

Collapse of Magnetized Singular Isothermal Toroids. II. Rotation and Magnetic Braking. *Anthony Allen, Zhi-Yun Li, & Frank H. Shu.* 599, 363 (2003)

Thermonuclear Stability of Material Accreting onto a Neutron Star. *Ramesh Narayan & Jeremy S. Heyl.* 599, 419 (2003)

Can Thin Disks Produce Anomalous X-Ray Pulsars? *K. Yavuz Eksi & M. Ali Alpar.* 599, 450 (2003)

Hubble Space Telescope Observations of Ultraviolet Oscillations in WZ Sagittae during the Decline from Outburst. *William F. Welsh, Edward M. Sion, Patrick Godon, Boris T. Gänsicke, Christian Knigge, Knox S. Long, & Paula Szkody.* 599, 509 (2003)

Thermohydrodynamics of Circumstellar Disks with High-Mass Planets. *Gennaro D'Angelo, Thomas Henning, & Willy Kley.* 599, 548 (2003)

Rapid Formation of Outer Giant Planets by Disk Instability. *Alan P. Boss.* 599, 577 (2003)

Rotation of a Pulsed Jet, or Plume in a Rotation Flow: A Source of Helicity for an α-ω Astrophysical Dynamo. *Howard F. Beckley, Stirling A. Colgate, Van D. Romero, & Ragnar Ferrel.* 599, 702 (2003)

Axisymmetric Magnetohydrodynamic Simulations of the Collapsar Model for Gamma-Ray Bursts. *Daniel Proga, Andrew I. MacFadyen, Philip J. Armitage, & Mitchell C. Begelman.* 599, L5 (2003)

The Formation of Massive Stars by Accretion through Trapped Hypercompact H II Regions. *Eric Keto.* 599, 1196 (2003)

Magnetically Driven Accretion Flows in the Kerr Metric. I. Models and Overall Structure. *Jean-Pierre De Villiers, John F. Hawley, & Julian H. Krolik.* 599, 1238 (2003)

ASTROBIOLOGY

Side Group Addition to the Polycyclic Aromatic Hydrocarbon Coronene by Proton Irradiation in Cosmic Ice Analogs. *Max P. Bernstein, Marla H. Moore, Jamie E. Elsila, Scott A. Sandford, Louis J. Allamandola, & Richard N. Zare.* 582, L25 (2003)

Dynamic Habitability of Known Extrasolar Planetary Systems. *Kristen Menou & Serge Tabachnik.* 583, 473 (2003)

Target Selection for SETI. I. A Catalog of Nearby Habitable Stellar Systems. *Margaret C. Turnbull & Jill C. Tarter.* 145, 179 (2003)

Early-Type Stars: Most Favorable Targets for Astrometrically Detectable Planets in the Habitable Zone. *Andrew Gould, Eric B. Ford, & Debra A. Fischer.* 591, L155 (2003)

The Effects of UV Continuum and Lyα Radiation on the Chemical Equilibrium of T Tauri Disks. *Edwin Bergin, Nuria Calvet, Paola D'Alessio, & Gregory J. Herczeg.* 591, L159 (2003)

Interstellar Glycine. *Yi-Jehng Kuan, Steven B. Charnley, Hui-Chun Huang, Wei-Ling Tseng, & Zbigniew Kisiel.* 593, 848 (2003)

The Structure of High Strehl Ratio Point-Spread Functions. *Marshall D. Perrin, Anand Sivaramakrishnan, Russell B. Makidon, Ben R. Oppenheimer, & James R. Graham.* 596, 702 (2003)

Volatile-rich Earth-Mass Planets in the Habitable Zone. *Marc J. Kuchner.* 596, L105 (2003)

Atmospheric Loss of Exoplanets Resulting from Stellar X-Ray and Extreme-Ultraviolet Heating. *H. Lammer, F. Selsis, I. Ribas, E. F. Guinan, S. J. Bauer, & W. W. Weiss.* 598, L121 (2003)

ASTROCHEMISTRY

Side Group Addition to the Polycyclic Aromatic Hydrocarbon Coronene by Proton Irradiation in Cosmic Ice Analogs. *Max P. Bernstein, Marla H. Moore, Jamie E. Elsila, Scott A. Sandford, Louis J. Allamandola, & Richard N. Zare.* 582, L25 (2003)

Observations of C_3 In Translucent Sight Lines. *Takeshi Oka, Julie A. Thorburn, Benjamin J. McCall, Scott D. Friedman, Lewis M. Hobbs, Paule Sonnentrucker, Daniel E. Welty, & Donald G. York.* 582, 823 (2003)

A Survey of 557 GHz Water Vapor Emission in the NGC 1333 Molecular Cloud. *Edwin A. Bergin, Michael J. Kaufman, Gary J. Melnick, Ronald L. Snell, & John E. Howe.* 582, 830 (2003)

First Detection of Vibrationally Excited HNC in Space. *Peter Schilke, Claudio Comito, & Sven Thorwirth.* 582, L101 (2003)

Luminescence from Vacuum-Ultraviolet–irradiated Cosmic Ice Analogs and Residues. *Murthy S. Gudipati, Jason P. Dworkin, Xavier D.F. Chillier, & Louis J. Allamandola.* 583, 514 (2003)

High-Resolution 3 Micron Spectroscopy of Molecules in the Mesosphere and Troposphere of Titan. *T. R. Geballe, S. J. Kim, K. S. Noll, & C. A. Griffith.* 583, L39 (2003)

Chemistry and Dynamics in Pre-protostellar Cores. *Jeong-Eun Lee, Neal J. Evans II, Yancy L. Shirley, & Ken'ichi Tatematsu.* 583, 789 (2003)

Carbon Monoxide Entrapment in Interstellar Ice Analogs. *M. P. Collings, J. W. Dever, H. J. Fraser, M. R. S. McCoustra, & D. A. Williams.* 583, 1058 (2003)

Hydrogenation and Charge States of the Polycyclic Aromatic Hydrocarbons in Diffuse Clouds. II. Results. *Valery Le Page, Theodore P. Snow, & Veronica M. Bierbaum.* 584, 316 (2003)

Comparing Gas-Phase and Grain-catalyzed H_2 Formation. *Simon C. O. Glover.* 584, 331 (2003)

Chemical Evolution in Protostellar Envelopes: Cocoon Chemistry. *S. D. Rodgers & S. B. Charnley.* 585, 355 (2003)

Time-dependent Density Functional Theory Calculations of Large Compact Polycyclic Aromatic Hydrocarbon Cations: Implications for the Diffuse Interstellar Bands. *Jennifer L. Weisman, Timothy J. Lee, Farid Salama, & Martin Head-Gordon.* 587, 256 (2003)

The Effects of Ion Irradiation on the Evolution of the Carrier of the 3.4 Micron Interstellar Absoprtion Band. *V. Mennella, G. A. Baratta, A. Esposito, G. Ferini, & Y. J. Pendleton.* 587, 727 (2003)

Nonequilibrium CO Chemistry in the Solar Atmosphere. *A. Asensio Ramos, J. Trujillo Bueno, M. Carlsson, & J. Cernicharo.* 588, L61 (2003)

Nonthermal Chemistry in Diffuse Clouds with Low Molecular Abundances. *J. Zsargó & S. R. Federman.* 589, 319 (2003)

A Survey of Acetic Acid toward Hot Molecular Cores. *A. Remijan, L. E. Snyder, D. N. Friedel, S.-Y. Liu, & R. Y. Shah.* 590, 314 (2003)

Zinc Crystal Growth in Microgravity. *B. P. Michael, Joseph A. Nuth III, & Lembit U. Lilleleht.* 590, 579 (2003)

Photodestruction of Relevant Interstellar Molecules in Ice Mixtures. *Hervé Cottin, Marla H. Moore, & Yves Bénilan.* 590, 874 (2003)

A Test Case for the Organic Refractory Model of Interstellar Dust. *S. S. Shenoy, D. C. B. Whittet, J. E. Chiar, A. J. Adamson, W. G. Roberge, & G. E. Hassel.* 591, 962 (2003)

Laboratory Infrared Spectroscopy of Cationic Polycyclic Aromatic Hydrocarbon Molecules. *Jos Oomens, A. G. G. M. Tielens, Boris G. Sartakov, Gert von Helden, & Gerard Meijer.* 591, 968 (2003)

Further Evidence for Chemical Fractionation from Ultraviolet Observations of Carbon Monoxide. *S. R. Federman, David L. Lambert, Yaron Sheffer, Jason A. Cardelli, B.-G. Andersson, Ewine F. van Dishoeck, & J. Zsargó.* 591, 986 (2003)

[C I] 492 GHz Mapping Observations of the High-Latitude Translucent Cloud MCLD 123.5+24.9. *F. Bensch, U. Leuenhagen, J. Stutzki, & R. Schieder.* 591, 1013 (2003)

Solar System Abundances and Condensation Temperatures of the Elements. *Katharina Lodders.* 591, 1220 (2003)

The Effects of UV Continuum and Lyα Radiation on the Chemical Equilibrium of T Tauri Disks. *Edwin Bergin, Nuria Calvet, Paola D'Alessio, & Gregory J. Herczeg.* 591, L159 (2003)

A Fluorescent Aerogel for Capture and Identification of Interplanetary and Interstellar Dust. *Gerardo Domínguez, Andrew J. Westphal, Mark L. F. Phillips, & Steven M. Jones.* 592, 631 (2003)

The Salty Scrambled Egg: Detection of NaCl toward CRL 2688. *J. L. Highberger, K. J. Thomson, P. A. Young, D. Arnett, & L. M. Ziurys.* 593, 393 (2003)

Molecular Evolution in Collapsing Prestellar Cores. II. The Effect of Grain-Surface Reactions. *Yuri Aikawa, Nagayoshi Ohashi, & Eric Herbst.* 593, 906 (2003)

Rotational Rest Frequencies for FeN ($X\ ^2\Delta_i$) and Revised Spectroscopic Constants for FeC ($X\ ^3\Delta_i$). *P. M. Sheridan, L. M. Ziurys, & T. Hirano.* 593, L141 (2003)

Supernova Reverse Shocks: SiC Growth and Isotopic Composition. *Ethan A.-N. Deneault, Donald D. Clayton, & Alexander Heger.* 594, 312 (2003)

New Laboratory Spectra of Isolated β-SiC Nanoparticles: Comparison with Spectra Taken by the *Infrared Space Observatory*. *D. Clément, H. Mutschke, R. Klein, & Th. Henning.* 594, 642 (2003)

Locally Aromatic Polycyclic Hydrocarbons as Potential Carriers of Infrared Emission Features. *Simon Petrie, Robert Stranger, & Walter W. Duley.* 594, 869 (2003)

Observations of Rotationally Resolved C_3 in Translucent Sight Lines. *Máté Ádámkovics, Geoffrey A. Blake, & Benjamin J. McCall.* 595, 235 (2003)

Measurement of the Kinetic Energy of Hydrogen Molecules Desorbing from Amorphous Water Ice. *J. E. Roser, S. Swords, G. Vidali, G. Manicò, & V. Pirronello.* 596, L55 (2003)

Laboratory Spectrum of the 1_{11}–2_{02} Rotational Transition of CH_2. *Ernest A. Michael, Frank Lewen, Gisbert Winnewisser, Hiroyuki Ozeki, Hideta Habara, & Eric Herbst.* 596, 1356 (2003)

Facile Generation and Storage of Polycyclic Aromatic Hydrocarbon Ions in Astrophysical Ices. *Murthy S. Gudipati & Louis J. Allamandola.* 596, L195 (2003)

VLA and BIMA Observations toward the Exciting Source of the Massive HH 80–81 Outflow. *Y. Gómez, L. F. Rodríguez, J. M. Girart, G. Garay, & J. Martí.* 597, 414 (2003)

A Model for the Formation of High-Density Clumps in Proto–Planetary Nebulae. *Patrick A. Young, J. L. Highberger, David Arnett, & L. M. Ziurys.* 597, L53 (2003)

Laboratory Submillimeter-Wave Detection of D_2H^+: A New Probe into Multiple Deuteration? *T. Hirano & T. Amano.* 597, L85 (2003)

Detection of MgNC in CRL 618: Tracing Metal Chemistry in Asymptotic Giant Branch Evolution. *J. L. Highberger & L. M. Ziurys.* 597, 1065 (2003)

Oxirane: An Exotic Oxygenated Organic Compound in Titan? *Patrice Coll, Jean-Michel Bernard, Rafael Navarro-González, & François Raulin.* 598, 700 (2003)

ASTROMETRY

Improved Astrometry and Photometry for the Luyten Catalog. I. Bright Stars. *Andrew Gould & Samir Salim.* 582, 1001 (2003)

Improved Astrometry and Photometry for the Luyten Catalog. II. Faint Stars and Revised Catalog. *Samir Salim & Andrew Gould.* 582, 1011 (2003)

Very Large Array Observations of Proper Motions in YLW 15. *S. Curiel, J. M. Girart, L. F. Rodríguez, & J. Canto.* 582, L109 (2003)

Very Large Array Observations of Proper Motions in L1551 IRS 5. *Luis F. Rodríguez, Salvador Curiel, Jorge Cantó, Laurent Loinard, Alejandro C. Raga, & Jose M. Torrelles.* 583, 330 (2003)

Transit Target Selection Using Reduced Proper Motions. *Andrew Gould & Christopher W. Morgan.* 585, 1056 (2003)

Angular Radii of Stars via Microlensing. *B. Scott Gaudi, David S. Graff, & Cheongho Han.* 586, 451 (2003)

Interferometric Phase Calibration Sources in the Declination Range 0° to −30°. *Joshua N. Winn, Alok R. Patnaik, & J. M. Wrobel.* 145, 83 (2003)

The Position of Sagittarius A*. II. Accurate Positions and Proper Motions of Stellar SiO Masers near the Galactic Center. *M. J. Reid, K. M. Menten, R. Genzel, T. Ott, R. Schödel, & A. Eckart.* 587, 208 (2003)

Ejection of a Low-Mass Star in a Young Stellar System in Taurus. *Laurent Loinard, Luis F. Rodríguez, & Monica I. Rodríguez.* 587, L47 (2003)

ω Centauri: Not a Recent Merger but Self-enriched? *Imants Platais, Rosemary F. G. Wyse, Leslie Hebb, Young-Wook Lee, & Soo-Chang Rey.* 591, L127 (2003)

Early-Type Stars: Most Favorable Targets for Astrometrically Detectable Planets in the Habitable Zone. *Andrew Gould, Eric B. Ford, & Debra A. Fischer.* 591, L155 (2003)

The Distance and Radius of the Neutron Star PSR B0656+14. *Walter F. Brisken, S. E. Thorsett, A. Golden, & W. M. Goss.* 593, L89 (2003)

Does M15 Possess an Intermediate-Mass Black Hole in Its Core? *B. J. McNamara, T. E. Harrison, & J. Anderson.* 595, 187 (2003)

Astrometric Microlensing by Finite-Size Lenses. *Rohta Takahashi.* 595, 418 (2003)

Near-Infrared, Adaptive Optics Observations of the T Tauri Multiple-Star System. *Elise Furlan, William J. Forrest, Dan M. Watson, Keven I. Uchida, Bernhard R. Brandl, Luke D. Keller, & Terry L. Herter.* 596, L87 (2003)

The Vela Pulsar's Proper Motion and Parallax Derived from VLBI Observations. *R. Dodson, D. Legge, J. E. Reynolds, & P. M. McCulloch.* 596, 1137 (2003)

The Pulsar/White Dwarf/Planet System in M4: Improved Astrometry. *Harvey B. Richer, Rodrigo Ibata, Gregory G. Fahlman, & Mark Huber.* 597, L45 (2003)

ATLASES

An Optical Spectroscopic Atlas of Low-Redshift Active Galactic Nuclei. *P. Marziani, J. W. Sulentic, R. Zamanov, M. Calvini, D. Dultzin-Hacyan, R. Bachev, & T. Zwitter.* 145, 199 (2003)

Palomar/Las Campanas Imaging Atlas of Blue Compact Dwarf Galaxies. I. Images and Integrated Photometry. *A. Gil de Paz, B. F. Madore, & O. Pevunova.* 147, 29 (2003)

An Archive of *IUE* Low-Dispersion Spectra of the White Dwarf Stars. *J. B. Holberg, M. A. Barstow, & M. R. Burleigh.* 147, 145 (2003)

An *IUE* Atlas of Pre–Main-Sequence Stars. III. Co-Added Final Archive Spectra from the Long-Wavelength Cameras. *Jeff A. Valenti, Adam A. Fallon, & Christopher M. Johns-Krull.* 147, 305 (2003)

A Uniform Database of 2.4–45.4 Micron Spectra from the *Infrared Space Observatory* Short Wavelength Spectrometer. *G. C. Sloan, Kathleen E. Kraemer, Stephan D. Price, & Russell F. Shipman.* 147, 379 (2003)

ATMOSPHERIC EFFECTS

Atmospheric Turbulence Measurements at Mount Wilson Observatory. *Nicholas Short, Walt Fitelson, & Charles H. Townes.* 599, 1469 (2003)

ATOMIC DATA

Breit-Pauli R-Matrix Calculation for Electron Impact Collision Strengths and Rates of O VI. *S. S. Tayal.* 582, 550 (2003)

On the Extreme-Ultraviolet/Ultraviolet Plasma Diagnostics for Nitrogen-like Ions from Spectra Obtained by *SOHO*/SUMER. *A. Mohan, E. Landi, & B. N. Dwivedi.* 582, 1162 (2003)

Indirect X-Ray Line-Formation Processes in Iron L-Shell Ions. *M. F. Gu.* 582, 1241 (2003)

CHIANTI—An Atomic Database for Emission Lines. IV. Proton Rates and Other Improvements. *P. R. Young, G. del Zanna, E. Landi, K. P. Dere, H. E. Mason, & M. Landini.* 144, 135 (2003)

Energy Levels, Radiative Rates, and Collision Strengths for Transitions in Fe XVII. *K. M. Aggarwal, F. P. Keenan, & A. Z. Msezane.* 144, 169 (2003)

Calculations of the Far-Wing Line Profiles of Sodium and Potassium in the Atmospheres of Substellar-Mass Objects. *Adam Burrows & Maxim Volobuyev.* 583, 985 (2003)

Emission Lines of Cl II in the Optical Spectra of Gaseous Nebulae. *F. P. Keenan, L. H. Aller, K. M. Exter, S. Hyung, & D. L. Pollacco.* 584, 385 (2003)

Experimental f-Value and Isotopic Structure for the Ni I Line Blended with [O I] at 6300 Å. *S. Johansson, U. Litzén, H. Lundberg, & Z. Zhang.* 584, L107 (2003)

Atomic Data and Spectral Line Intensities for Si VII. *A. K. Bhatia & E. Landi.* 585, 587 (2003)

Intensities of E2 Spectral Lines in the Astrophysically Important Ion Mg II. *E. Charro & I. Martín.* 585, 1191 (2003)

Experimental Transition Rate of the Green Coronal Line of Fe XIV. *P. Beiersdorfer, E. Träbert, & E. H. Pinnington.* 587, 836 (2003)

Atomic Data and Emission-Line Intensities for Ca VII. *E. Landi & A. K. Bhatia.* 589, 1075 (2003)

Radiative Recombination Rate Coefficients for Bare through F-like Isosequences of Mg, Si, S, Ar, Ca, Fe, and Ni. *M. F. Gu.* 589, 1085 (2003)

Temperature Measurements in the Solar Transition Region Using N III Line Intensity Ratios. *R. Doron, G. A. Doschek, J. M. Laming, U. Feldman, & A. K. Bhatia.* 590, 1121 (2003)

Dielectronic Recombination Rate Coefficients for H-Like through Ne-Like Isosequences of Mg, Si, S, Ar, Ca, Fe, and Ni. *M. F. Gu.* 590, 1131 (2003)

Ionization Fractions of Slow Ions in a Plasma with Kappa Distributions for the Electron Velocity. *S. Wannawichian, D. Ruffolo, & Yu. Yu. Kartavykh.* 146, 443 (2003)

Oscillator Strengths of Allowed and Intercombination Lines in P II. *S. S. Tayal.* 146, 459 (2003)

Absolute Photoionization Cross Section Measurements of O II Ions from 29.7 to 46.2 eV. *A. Aguilar, A. M. Covington, G. Hinojosa, R. A. Phaneuf, I. Álvarez, C. Cisneros, J. D. Bozek, I. Dominguez, M. M. Sant'Anna, A. S. Schlachter, S. N. Nahar, & B. M. McLaughlin.* 146, 467 (2003)

Assessment of the Fluorescence and Auger Database used in Plasma Modeling. *T. W. Gorczyca, C. N. Kodituwakku, K. T. Korista, O. Zatsarinny, N. R. Badnell, E. Behar, M. H. Chen, & D. W. Savin.* 592, 636 (2003)

Recombination X-Ray Line Formation of Iron L-Shell Ions in Low Temperature Plasmas. *M. F. Gu.* 593, 1249 (2003)

Non-LTE Model Atmospheres for Late-Type Stars. I. A Collection of Data for Light Neutral and Singly Ionized Atoms. *Carlos Allende Prieto, David L. Lambert, Ivan Hubeny, & Thierry Lanz.* 147, 363 (2003)

Atomic Data and Spectral Line Intensities for S X. *A. K. Bhatia & E. Landi.* 147, 409 (2003)

Dielectronic Recombination of the Fe XXI and Fe XXII via $N = 2 \rightarrow N' = 2$ Core Excitations. *D. W. Savin, S. M. Kahn, G. Gwinner, M. Grieser, R. Repnow, G. Saathoff, D. Schwalm, A. Wolf, A. Müller, S. Schippers, P. A. Závodszky, M. H. Chen, T. W. Gorczyca, O. Zatsarinny, & M. F. Gu.* 147, 421 (2003)

Asymmetric Deviation of the Scattering Cross Section around Lyα Atomic Hydrogen. *Hee-Won Lee.* 594, 637 (2003)

New Identifications of Mn VII and Fe VIII Lines Belonging to Transitions of the Type $3p^6 4p$–$3p^6 4d$ and $3p^5 3d^2$–$3p^6 4d$. *J. O. Ekberg & U. Feldman.* 595, 517 (2003)

Transitions from Autoionized Single-ionized Tin States: A Theoretical Study of the $5s5p\ (^3P^o)\ nl$ (nl = 5d, 6s) Levels of Sn II. *A. Alonso-Medina, C. Colón, & C. Herrán Martínez.* 595, 550 (2003)

Interchannel Coupling in Ionic Photoionization far above Threshold: The Neon Isoelectronic Sequence. *H. S. Chakraborty, P. C. Deshmukh, & S. T. Manson.* 595, 1307 (2003)

Improved Laboratory Transition Probabilities for Nd II and Application to the Neodymium Abundances of the Sun and Three Metal-Poor Stars. *E. A. Den Hartog, J. E. Lawler, C. Sneden, & J. J. Cowan.* 148, 543 (2003)

New Identifications of Mn IV and Fe VII Vacuum Ultraviolet Lines. *J. O. Ekberg & U. Feldman.* 148, 567 (2003)

Electron Collision Excitation Rates for O I Using the B-Spline R-Matrix Approach. *O. Zatsarinny & S. S. Tayal.* 148, 575 (2003)

Measurements and Calculations of Photoionization Cross Sections of Multiply Charged Ions in Ground and Metastable States along the Isonuclear Series of Oxygen: O^{2+} to O^{4+}. *J.-P. Champeaux, J.-M. Bizau, D. Cubaynes, C. Blancard, S. Nahar, D. Hitz, J. Bruneau, & F. J. Wuilleumier.* 148, 583 (2003)

Atomic Data for Resonance Absorption Lines. III. Wavelengths Longward of the Lyman Limit for the Elements Hydrogen to Gallium. *Donald C. Morton.* 149, 203 (2003)

Electron-Ion Recombination Rate Coefficients and Photoionization Cross Sections for Astrophysically Abundant Elements. VII. Relativistic Calculations for O VI and O VII for Ultraviolet and X-Ray Modeling. *Sultana N. Nahar & Anil K. Pradhan.* 149, 237 (2003)

Atomic Data and Spectral Line Intensities for S XI. *E. Landi & A. K. Bhatia.* 149, 249 (2003)

Modeling the Ne IX Triplet Spectral Region of Capella with the *Chandra* and *XMM-Newton* Gratings. *Jan-Uwe Ness, Nancy S. Brickhouse, Jeremy J. Drake, & David P. Huenemoerder.* 598, 1277 (2003)

ATOMIC PROCESSES

Formation of Minor-Ion Charge States in the Fast Solar Wind: Roles of Differential Flow Speeds of Ions of the Same Element. *Y. Chen, R. Esser, & Y. Hu.* 582, 467 (2003)

Breit-Pauli R-Matrix Calculation for Electron Impact Collision Strengths and Rates of O VI. *S. S. Tayal.* 582, 550 (2003)

Indirect X-Ray Line-Formation Processes in Iron L-Shell Ions. *M. F. Gu.* 582, 1241 (2003)

A New Kinetic Equation for Compton Scattering. *George B. Rybicki.* 584, 528 (2003)

Charge Abundances of the Solar Wind Ions Inferred from Cometary X-Ray Spectra. *V. Kharchenko, Matt Rigazio, A. Dalgarno, & V. A. Krasnopolsky.* 585, L73 (2003)

Intensities of E2 Spectral Lines in the Astrophysically Important Ion Mg II. *E. Charro & I. Martín.* 585, 1191 (2003)

The Fe XXII I(11.92 Å)/I(11.77 Å) Density Diagnostic Applied to the *Chandra* High-Energy Transmission Grating Spectrum of EX Hydrae. *Christopher W. Mauche, Duane A. Liedahl, & Kevin B. Fournier.* 588, L101 (2003)

Time-dependent Ionization in Dynamic Solar and Stellar Atmospheres. I. Methods. *W. Rammacher & P. Ulmschneider.* 589, 988 (2003)

Radiative Recombination Rate Coefficients for Bare through F-like Isosequences of Mg, Si, S, Ar, Ca, Fe, and Ni. *M. F. Gu.* 589, 1085 (2003)

Temperature Measurements in the Solar Transition Region Using N III Line Intensity Ratios. *R. Doron, G. A. Doschek, J. M. Laming, U. Feldman, & A. K. Bhatia.* 590, 1121 (2003)

Dielectronic Recombination Rate Coefficients for H-Like through Ne-Like Isosequences of Mg, Si, S, Ar, Ca, Fe, and Ni. *M. F. Gu.* 590, 1131 (2003)

Ionization Fractions of Slow Ions in a Plasma with Kappa Distributions for the Electron Velocity. *S. Wannawichian, D. Ruffolo, & Yu. Yu. Kartavykh.* 146, 443 (2003)

Oscillator Strengths of Allowed and Intercombination Lines in P II. *S. S. Tayal.* 146, 459 (2003)

Absolute Photoionization Cross Section Measurements of O II Ions from 29.7 to 46.2 eV. *A. Aguilar, A. M. Covington, G. Hinojosa, R. A. Phaneuf, I. Álvarez, C. Cisneros, J. D. Bozek, I. Dominguez, M. M. Sant'Anna, A. S. Schlachter, S. N. Nahar, & B. M. McLaughlin.* 146, 467 (2003)

Assessment of the Fluorescence and Auger Database used in Plasma Modeling. *T. W. Gorczyca, C. N. Kodituwakku, K. T. Korista, O. Zatsarinny, N. R. Badnell, E. Behar, M. H. Chen, & D. W. Savin.* 592, 636 (2003)

The Effect of Collisional Enhancement of Balmer Lines on the Determination of the Primordial Helium Abundance. *V. Luridiana, A. Peimbert, M. Peimbert, & M. Cervino.* 592, 846 (2003)

Revisited Abundance Diagnostics in Quasars: Fe II/Mg II Ratios. *E. Verner, F. Bruhweiler, D. Verner, S. Johansson, & T. Gull.* 592, L59 (2003)

Symmetrical Chemi-Ionization and Chemi-Recombination Processes in Low-Temperature Layers of Helium-rich DB White Dwarf Atmospheres. *A. A. Mihajlov, Lj. M. Ignjatović, M. S. Dimitrijević, & Z. Djurić.* 147, 369 (2003)

Dielectronic Recombination of the Fe XXI and Fe XXII via $N = 2 \rightarrow N' = 2$ Core Excitations. *D. W. Savin, S. M. Kahn, G. Gwinner, M. Grieser, R. Repnow, G. Saathoff, D. Schwalm, A. Wolf, A. Müller, S. Schippers, P. A. Závodszky, M. H. Chen, T. W. Gorczyca, O. Zatsarinny, & M. F. Gu.* 147, 421 (2003)

Carbon-Nitrogen-Oxygen Line Radiation and the X-Ray Bowen Fluorescence Mechanism in Optically Thick, Highly Ionized Media. *Masao Sako.* 594, 1108 (2003)

Stellar Hydrodynamics in Radiative Regions. *Patrick A. Young, Karen A. Knierman, Jane R. Rigby, & David Arnett.* 595, 1114 (2003)

Interchannel Coupling in Ionic Photoionization far above Threshold: The Neon Isoelectronic Sequence. *H. S. Chakraborty, P. C. Deshmukh, & S. T. Manson.* 595, 1307 (2003)

Electron Collision Excitation Rates for O I Using the B-Spline R-Matrix Approach. *O. Zatsarinny & S. S. Tayal.* 148, 575 (2003)

Electron-Ion Recombination Rate Coefficients and Photoionization Cross Sections for Astrophysically Abundant Elements. VII. Relativistic Calculations for O VI and O VII for Ultraviolet and X-Ray Modeling. *Sultana N. Nahar & Anil K. Pradhan.* 149, 237 (2003)

BALLOONS

The Spectrum of Integrated Millimeter Flux of the Magellanic Clouds and 30 Doradus from TopHat and DIRBE Data. *J. E. Aguirre, J. J. Bezaire, E. S. Cheng, D. A. Cottingham, S. S. Cordone, T. M. Crawford, D. J. Fixsen, L. Knox, S. S. Meyer, H. U. Norgaard-Nielsen, R. F. Silverberg, P. Timbie, & G. W. Wilson.* 596, 273 (2003)

BOOMERANG: A Balloon-Borne Millimeter-Wave Telescope and Total Power Receiver for Mapping Anisotropy in the Cosmic Microwave Background. *B. P. Crill, P. A. R. Ade, D. R. Artusa, R. S. Bhatia, J. J. Bock, A. Boscaleri, P. Cardoni, S. E. Church, K. Coble, P. deBernardis, G. deTroia, P. Farese, K. M. Ganga, M. Giacometti, C. V. Haynes, E. Hivon, V. V. Hristov, A. Iacoangeli, W. C. Jones, A. E. Lange, L. Martinis, S. Masi, P. V. Mason, P. D. Mauskopf, L. Miglio, T. Montroy, C. B. Netterfield, C. G. Paine, E. Pascale, F. Paicentini, G. Polenta, F. Pongetti, G. Romeo, J. E. Ruhl, F. Scaramuzzi, D. Sforna, & A. D. Turner.* 148, 527 (2003)

BLACK HOLE PHYSICS

Accretion of Low Angular Momentum Material onto Black Holes: Two-dimensional Hydrodynamical Inviscid Case. *Daniel Proga & Mitchell C. Begelman.* 582, 69 (2003)

Accretion onto the Supermassive Black Hole in M87. *Tiziana Di Matteo, Steven W. Allen, Andrew C. Fabian, Andrew S. Wilson, & Andrew J. Young.* 582, 133 (2003)

Charged Black Holes: Wave Equations for Gravitational and Electromagnetic Perturbations. *Zoltán Perjés & Mátyás Vasúth.* 582, 342 (2003)

Pseudo-Newtonian Potentials to Describe the Temporal Effects on Relativistic Accretion Disks around Rotating Black Holes and Neutron Stars. *Banibrata Mukhopadhyay & Ranjeev Misra.* 582, 347 (2003)

On the Central Structure of M15. *Holger Baumgardt, Piet Hut, Junichiro Makino, Steve McMillan, & Simon Portegies Zwart.* 582, L21 (2003)

The Assembly and Merging of Supermassive Black Holes in Hierarchical Models of Galaxy Formation. *Marta Volonteri, Francesco Haardt, & Piero Madau.* 582, 559 (2003)

X-Ray Jet Emission from the Black Hole X-Ray Binary XTE J1550−564 with *Chandra* in 2000. *John A. Tomsick, Stéphane Corbel, Rob Fender, Jon M. Miller, Jerome A. Orosz, Tasso Tzioumis, Rudy Wijnands, & Philip Kaaret.* 582, 933 (2003)

X-Ray Emission from the Jets of XTE J1550−564. *P. Kaaret, S. Corbel, J. A. Tomsick, R. Fender, J. M. Miller, J. A. Orosz, T. Tzioumis, & R. Wijnands.* 582, 945 (2003)

Relativistic Dyson Rings and Their Black Hole Limit. *M. Ansorg, A. Kleinwächter, & R. Meinel.* 582, L87 (2003)

Protoquasars: Physical States and Observable Properties. *Nozomu Kawakatu, Masayuki Umemura, & Masao Mori.* 583, 85 (2003)

Axisymmetric Dynamical Models of the Central Regions of Galaxies. *Karl Gebhardt, Douglas Richstone, Scott Tremaine, Tod R. Lauer, Ralf Bender, Gary Bower, Alan Dressler, S. M. Faber, Alexei V. Filippenko, Richard Green, Carl Grillmair, Luis C. Ho, John Kormendy, John Magorrian, & Jason Pinkney.* 583, 92 (2003)

The Black Hole–Bulge Relationship in Quasars. *Gregory A. Shields, Karl Gebhardt, Sarah Salviander, Beverley J. Wills, Bingrong Xie, Michael S. Brotherton, Juntao Yuan, & Matthias Dietrich.* 583, 124 (2003)

The Black Hole Masses and Host Galaxies of BL Lacertae Objects. *Aaron J. Barth, Luis C. Ho, & Wallace L. W. Sargent.* 583, 134 (2003)

Gravitational Wave Frequencies and Energies in Hypernovae. *Maurice H. P. M. van Putten.* 583, 374 (2003)

Relativistic Singular Isothermal Toroids. *Mike J. Cai & Frank H. Shu.* 583, 391 (2003)

The Largest Balck Holes and the Most Luminous Galaxies. *Hagai Netzer.* 583, L5 (2003)

Gravitational Waves from Stars Orbiting the Sagittarius A* Black Hole. *Marc Freitag.* 583, L21 (2003)

Gravitational Waves Probe the Coalescence Rate of Massive Black Hole Binaries. *A. H. Jaffe & D. C. Backer.* 583, 616 (2003)

Off-Axis Neutrino Scattering in Gamma-Ray Burst Central Engines. *Warner A. Miller, Nathan D. George, Arkady Kheyfets, & John M. McGhee.* 583, 833 (2003)

Force-free Waves and Black Hole Magnetospheric Causality. *Brian Punsly.* 583, 842 (2003)

BATSE Soft Gamma-Ray Observations of GRO J0422+32. *J. C. Ling & Wm. A. Wheaton.* 584, 399 (2003)

A New X-Ray Flare from the Galactic Nucleus Detected with the *XMM-Newton* Photon Imaging Cameras. *A. Goldwurm, E. Brion, P. Goldoni, P. Ferrando, F. Daigne, A. Decourchelle, R. S. Warwick, & P. Predehl.* 584, 751 (2003)

Theory and Astrophysical Consequences of a Magnetized Torus around a Rapidly Rotating Black Hole. *Maurice H. P. M. van Putten & Amir Levinson.* 584, 937 (2003)

Flux Enhancement in the Inner Region of a Geometrically and Optically Thick Accretion Disk. *R. Misra & K. Sriram.* 584, 981 (2003)

Global Three-dimensional Magnetohydrodynamic Simulations of Black Hole Accretion Disks: X-Ray Flares in the Plunging Region. *Mami Machida & Ryoji Matsumoto.* 585, 429 (2003)

Diffuse X-Rays from a Distributed Component of Dark Surrounding Sagittarius A*. *Martin Pessah & Fulvio Melia.* 585, L29 (2003)

X-Ray Spectroscopic Evidence for Intermediate-Mass Black Holes: Cool Accretion Disks in Two Ultraluminous X-Ray Sources. *J. M. Miller, G. Fabbiano, M. C. Miller, & A. C. Fabian.* 585, L37 (2003)

Does the Narrow [O III] λ5007 Line Reflect the Stellar Velocity Dispersion in Active Galactic Nuclei. *Todd A. Boroson.* 585, 647 (2003)

Collapse of a Magnetized Star to a Black Hole. *Thomas W. Baumgarte & Stuart L. Shapiro.* 585, 930 (2003)

Polarized Gravitational Waves from Gamma-Ray Bursts. *Shiho Kobayashi & Peter Mészáros.* 585, L89 (2003)

Black Hole Mass and Spin Coevolution by Mergers. *Scott A. Hughes & Roger D. Blandford.* 585, L101 (2003)

Using Multiwavelength Observations to Determine the Black Hole Mass and Accretion Rate in the Type I Seyfert Galaxy NGC 5548. *James Chiang & Omer Blaes.* 586, 97 (2003)

X-Ray Temporal Properties of XTE J1650−500 during Outburst Decay. *E. Kalemci, J. A. Tomsick, R. E. Rothschild, K. Pottschmidt, S. Corbel, R. Wijnands, J. M. Miller, & P. Kaaret.* 586, 419 (2003)

Variability of Sagittarius A*: Flares at 1 Millimeter. *Jun-Hui Zhao, K. H. Young, R. M. Herrnstein, P. T. P. Ho, T. Tsutsumi, K. Y. Lo, W. M. Goss, & G. C. Bower.* 586, L29 (2003)

Discovery of X-Ray Quasi-periodic Oscillations from an Ultraluminous X-Ray Source in M82: Evidence against Beaming. *Tod E. Strohmayer & Richard F. Mushotzky.* 586, L61 (2003)

Is There Really a Black Hole at the Center of NGC 4041? Constraints from Gas Kinematics. *A. Marconi, D. J. Axon, A. Capetti, W. Maciejewski, J. Atkinson, D. Batcheldor, I. Binney, M. Carollo, L. Dressel, H. Ford, J. Gerssen, M. A. Hughes, D. Macchetto, M. R. Merrifield, C. Scarlata, W. Sparks, M. Stiavelli, Z. Tsvetanov, & R. P. van der Marel.* 586, 868 (2003)

High-Frequency Quasi-Periodic Oscillations in the Black Holes X-Ray Transient XTE J1650−500. *Jeroen Homan, Marc Klein-Wolt, Sabrina Rossi, Jon M. Miller, Rudy Wijnands, Tomaso Belloni, Michiel van der Klis, & Walter H. G. Lewin.* 586, 1262 (2003)

Stability of Accretion Disk around Rotating Black Holes: A Pseudo–General-Relativistic Fluid Dynamical Study. *Banibrata Mukhopadhyay.* 586, 1268 (2003)

The First Measurement of Spectral Lines in a Short-Period Star Bound to the Galaxy's Central Black Hole: A Paradox of Youth. *A. M. Ghez, G. Duchêne, K. Matthews, S. D. Hornstein, A. Tanner, J. Larkin, M. Morris, E. E. Becklin, S. Salim, T. Kremenek, D. Thompson, B. T. Soifer, G. Neugebauer, & I. McLean.* 586, L127 (2003)

A Stringent Limit on the Accretion Luminosity of the Possible Central Black Hole in the Globular Cluster M15. *Luis C. Ho, Yuichi Terashima, & Takashi Okajima.* 587, L35 (2003)

Jet-induced Nucleosynthesis in Misaligned Microquasars. *Yousaf M. Butt, Thomas J. Maccarone, & Nikos Prantzos.* 587, 748 (2003)

The X-Ray–faint Emission of the Supermassive Nuclear Black Hole of IC 1459. *G. Fabbiano, M. Elvis, S. Markoff, A. Siemiginowska, S. Pellegrini, A. Zezas, F. Nicastro, G. Trinchieri, & J. McDowell.* 588, 175 (2003)

Inner Boundary Conditions for Advection-dominated Accretion onto Black Holes. *Peter A. Becker & Truong Le.* 588, 408 (2003)

Role of Shocked Accretion Flows in Regulating the Quasi-Periodic Oscillation of Galactic Black Hole Candidates. *Tapas K. Das.* 588, L89 (2003)

HARM: A Numerical Scheme for General Relativistic Magnetohydrodynamics. *Charles F. Gammie, Jonathan C. McKinney, & Gábor Tóth.* 589, 444 (2003)

A Numerical Method for General Relativistic Magnetohydrodynamics. *Jean-Pierre De Villiers & John F. Hawley.* 589, 458 (2003)

The Relation between Black Hole Mass, Bulge Mass, and Near-Infrared Luminosity. *Alessandro Marconi & Leslie K. Hunt.* 589, L21 (2003)

A Dynamical Model for the Globular Cluster G1. *Holger Baumgardt, Junichiro Makino, Piet Hut, Steve McMillan, & Simon Portegies Zwart.* 589, L25 (2003)

Hard X-Ray Flares Preceding Soft X-Ray Outbursts in Aquila X-1: A Link between Neutron Star and Black Hole Transitions. *Wenfei Yu, Marc Klein-Wolt, Rob Fender, & Michiel van der Klis.* 589, L33 (2003)

Gravitational Radiation from Gamma-Ray Burst Progenitors. *Shiho Kobayashi & Peter Mészáros.* 589, 861 (2003)

An Accretion Model for the Growth of the Central Black Hole Associated with Ionization Instability in Quasars. *Y. Lu, K. S. Cheng, & S. N. Zhang.* 590, 52 (2003)

Sqeezars: Tidally Powered Stars Orbiting a Massive Black Hole. *Tal Alexander & Mark Morris.* 590, L25 (2003)

Orbital In-Spiral into a Massive Black Hole in a Galactic Center. *Tal Alexander & Clovis Hopman.* 590, L29 (2003)

Low-Frequency Gravitational Waves from Massive Black Hole Binaries: Predictions for *LISA* and Pulsar Timing Arrays. *J. Stuart B. Wyithe & Abraham Loeb.* 590, 691 (2003)

Formation of Supermassive Black Holes in Galactic Bulges: A Rotating Collapse Model Consistent with the M_{BH}-σ Relation. *Fred C. Adams, David S. Graff, Manasse Mbonye, & Douglas O. Richstone.* 591, 125 (2003)

How Massive Single Stars End Their Life. *A. Heger, C. L. Fryer, S. E. Woosley, N. Langer, & D. H. Hartmann.* 591, 288 (2003)

Chandra X-Ray Spectroscopic Imaging of Sagittarius A* and the Central Parsec of the Galaxy. *F. K. Baganoff, Y. Maeda, M. Morris, M. W. Bautz, W. N. Brandt, W. Cui, J. P. Doty, E. D. Feigelson, G. P. Garmire, S. H. Pravdo, G. R. Ricker, & L. K. Townsley.* 591, 891 (2003)

Effects of Wandering on the Coalescence of Black Hole Binaries in Galactic Centers. *Pinaki Chatterjee, Lars Hernquist, & Abraham Loeb.* 592, 32 (2003)

Geometrically Thin Disk Accreting into a Black Hole. *N. Afshordi & B. Paczyński.* 592, 354 (2003)

Accretion of Low Angular Momentum Material onto Black Holes: Two-dimensional Magnetohydrodynamic Case. *Daniel Proga & Mitchell C. Begelman.* 592, 767 (2003)

Three-dimensional Magnetohydrodynamic Simulations of Radiatively Inefficient Accretion Flows. *Igor V. Igumenshchev, Ramesh Narayan, & Marek A. Abramowicz.* 592, 1042 (2003)

Global General Relativistic Magnetohydrodynamic Simulations of Accretion Tori. *Jean-Pierre De Villiers & John F. Hawley.* 592, 1060 (2003)

Multitransonic Black Hole Accretion Disks with Isothermal Standing Shocks. *Tapas K. Das, Jayant K. Pendharkar, & Sanjit Mitra.* 592, 1078 (2003)

The Contribution of Particle Impact to the Production of Fe Kα Emission from Accreting Black Holes. *D. R. Ballantyne & A. C. Fabian.* 592, 1089 (2003)

X-Ray Flares and Oscillations from the Black Hole Candidate X-Ray Transient XTE J1650−500 at Low Luminosity. *John A. Tomsick, Emrah Kalemci, Stephane Corbel, & Philip Kaaret.* 592, 1100 (2003)

Spectral and Temporal Behavior of the Black Hole Candidate XTE J1118+480 as Observed with *BeppoSAX*. *F. Frontera, L. Amati, A. A. Zdziarski, T. Belloni, S. Del Sordo, N. Masetti, M. Orlandini, & E. Palazzi.* 592, 1110 (2003)

Black Hole Growth and Activity in a Λ Cold Dark Matter Universe. *Tiziana Di Matteo, Rupert A. C. Croft, Volker Springel, & Lars Hernquist.* 593, 56 (2003)

Comptonization in Super-Eddington Accretion Flow and Growth Timescale of Supermassive Black Holes. *Toshihiro Kawaguchi.* 593, 69 (2003)

The Disk-Jet Connection in Microquasars and Active Galactic Nuclei. *Mario Livio, J. E. Pringle, & A. R. King.* 593, 184 (2003)

The Origin of IRS 16: Dynamically Driven Inspiral of a Dense Star Cluster to the Galactic Center? *Simon F. Portegies Zwart, Stephen L. W. McMillan, & Ortwin Gerhard.* 593, 352 (2003)

Multiwavelength Spectrum of the Black Hole XTE J1118+480 in Quiescence. *Jeffrey E. McClintock, Ramesh Narayan, Michael R. Garcia, Jerome A. Orosz, Ronald A. Remillard, & Stephen S. Murray.* 593, 435 (2003)

Eddington Accretion and QSO Emission Lines at $z \sim 2$. *Michael Juntao Yuan & Beverley J. Wills.* 593, L11 (2003)

The Formation of Galaxy Stellar Cores by the Hierarchical Merging of Supermassive Black Holes. *Marta Volonteri, Piero Madau, & Francesco Haardt.* 593, 661 (2003)

The Need for a Second Black Hole at the Galactic Center. *Brad M. S. Hansen & Miloš Milosavljević.* 593, L77 (2003)

Gamma-Ray Lines from Asymmetric Supernovae. *Aimee L. Hungerford, Chris L. Fryer, & Michael S. Warren.* 594, 390 (2003)

The Stellar Cusp around the Supermassive Black Hole in the Galactic Center. *R. Genzel, R. Schödel, T. Ott, F. Eisenhauer, R. Hofmann, M. Lehnert, A. Eckart, T. Alexander, A. Sternberg, R. Lenzen, Y. Clénet, F. Lacombe, D. Rouan, A. Renzini, & L. E. Tacconi-Garman.* 594, 812 (2003)

Primordial Black Holes as Dark Matter: The Power Spectrum and Evaporation of Early Structures. *N. Afshordi, P. McDonald, & D. N. Spergel.* 594, L71 (2003)

Luminous Hot Accretion Flows: Thermal Equilibrium Curve and Thermal Stability. *Feng Yuan.* 594, L99 (2003)

Magnetic Coupling of a Rotating Black Hole with Its Surrounding Accretion Disk. *Ding-Xiong Wang, Ren-Yi Ma, Wei-Hua Lei, & Guo-Zheng Yao.* 595, 109 (2003)

Does M15 Possess an Intermediate-Mass Black Hole in Its Core? *B. J. McNamara, T. E. Harrison, & J. Anderson.* 595, 187 (2003)

The Effect of Nonthermal Protons on the High-Energy Spectra of Black Hole Binaries. *S. Bhattacharyya, N. Bhatt, R. Misra, & C. L. Kaul.* 595, 317 (2003)

Self-regulated Growth of Supermassive Black Holes in Galaxies as the Origin of the Optical and X-Ray Luminosity Functions of Quasars. *J. Stuart B. Wyithe & Abraham Loeb.* 595, 614 (2003)

Constrained Transport Algorithms for Numerical Relativity. I. Development of a Finite-Difference Scheme. *David L. Meier.* 595, 980 (2003)

Collapse of Rotating Supermassive Neutron Stars to Black Holes: Fully General Relativistic Simulations. *Masaru Shibata.* 595, 992 (2003)

Spectral Evolution of the Microquasar XTE J1550−564 over Its Entire 2000 Outburst. *J. Rodriguez, S. Corbel, & J. A. Tomsick.* 595, 1032 (2003)

X-Ray Bursts in Neutron Star and Black Hole Binaries from Unconvetional Stellar Aspect Experiment and *Rossi X-Ray Timing Explorer* Data: Detections and Upper Limits. *D. Tournear, E. Raffauf, E. D. Bloom, W. Focke, B. Giebels, G. Godfrey, P. M. Saz Parkinson, K. T. Reilly, K. S. Wood, P. S. Ray, M. T. Wolff, R. M. Bandyopadhyay, M. N. Lovellette, & Jeffrey D. Scargle.* 595, 1058 (2003)

Formation of the First Supermassive Black Holes. *Volker Bromm & Abraham Loeb.* 596, 34 (2003)

The Fate of Star Clusters near the Galactic Center. I. Analytic Considerations. *Stephen L. W. McMillan & Simon F. Portegies Zwart.* 596, 314 (2003)

Black Hole Accretion Disks On The Edge. *Kristen Menou.* 596, 414 (2003)

Model for Relaxation Oscillations of a Luminous Accretion Disk in GRS 1915+105: Variable Inner Edge. *Ken-ya Watarai & Shin Mineshige.* 596, 421 (2003)

Stellar-Mass Black Holes in the Solar Neighborhood. *James R. Chisholm, Scott Dodelson, & Edward W. Kolb.* 596, 437 (2003)

Black Holes, Galaxy Formation, and the $M_{\rm BH}$-σ Relation. *Andrew King.* 596, L27 (2003)

Testing the Binary Black Hole Paradigm through the Fe Kα Line Profile: Application to 3C 273. *Diego F. Torres, Gustavo E. Romero, Xavier Barcons, & Youjun Lu.* 596, L31 (2003)

Long-Term Evolution of Massive Black Hole Binaries. *Miloš Milosavljević & David Merritt.* 596, 860 (2003)

Shadowing of the Nascent Jet in NGC 4261 by a Line-Emitting Supersonic Accretion Disk. *Siming Liu, Michael J. Fromerth, & Fulvio Melia.* 596, 879 (2003)

Stellar Dynamics in the Central Arcsecond of Our Galaxy. *R. Schödel, T. Ott, R. Genzel, A. Eckart, N. Mouawad, & T. Alexander.* 596, 1015 (2003)

Observations of Giant Outbursts from Cygnus X-1. *S. Golenetskii, R. Aptekar, D. Frederiks, E. Mazets, V. Palshin, K. Hurley, T. Cline, & B. Stern.* 596, 1113 (2003)

Polarization of Gamma-Ray Bursts via Scattering off a Relativistic Sheath. *David Eichler & Amir Levinson.* 596, L147 (2003)

On Intrinsic Magnetic Moments in Black Hole Candidates. *Stanley L. Robertson & Darryl J. Leiter.* 596, L203 (2003)

The Fate of Nonradiative Magnetized Accretion Flows: Magnetically Frustrated Convection. *Ue-Li Pen, Christopher D. Matzner, & Shingkwong Wong.* 596, L207 (2003)

Accretion Disk Spectra of Ultraluminous X-Ray Sources in Nearby Spiral Galaxies and Galactic Superluminal Jet Sources. *Ken Ebisawa, Piotr Życki, Aya Kubota, Tsunefumi Mizuno, & Ken-ya Watarai.* 597, 780 (2003)

Probing with the Inflow/Outflow and Accretion Disk of Cygnus X-1 in High State with the *Chandra* High Energy Transmission Grating. *Y. X. Feng, A. F. Tennant, & S. N. Zhang.* 597, 1017 (2003)

Photon Orbital Angular Momentum in Astrophysics. *Martin Harwit.* 597, 1266 (2003)

Chandra Detections of Two Quiescent Black Hole X-Ray Transients. *John A. Tomsick, Stéphane Corbel, Rob Fender, Jon M. Miller, Jerome A. Orosz, Michael P. Rupen, Tasso Tzioumis, Rudy Wijnands, & Philip Kaaret.* 597, L133 (2003)

A Method for Black Hole Mass Determination in Accretion-powered X-Ray Sources. *Chris R. Shrader & Lev Titarchuk.* 598, 168 (2003)

Nonthermal Electrons in Radiatively Inefficient Accretion Flow Models of Sagittarius A*. *Feng Yuan, Eliot Quataert, & Ramesh Narayan.* 598, 301 (2003)

Broad Redshifted Line as Signature of Outflow. *Lev Titarchuk, Demos Kazanas, & Peter A. Becker.* 598, 411 (2003)

Cosmological Mestel Disks and the Rossby Vortex Instability: The Origin of Supermassive Black Holes. *Stirling A. Colgate, Renyue Cen, Hui Li, Nathan Currier, & Michael S. Warren.* 598, L7 (2003)

Jet Formation in BL Lacertae Objects with Different Accretion Models. *Xinwu Cao.* 599, 147 (2003)

Ejection of Hypervelocity Stars by the (Binary) Black Hole in the Galactic Center. *Qingjuan Yu & Scott Tremaine.* 599, 1129 (2003)

Magnetically Driven Accretion Flows in the Kerr Metric. I. Models and Overall Structure. *Jean-Pierre De Villiers, John F. Hawley, & Julian H. Krolik.* 599, 1238 (2003)

BLACK HOLES

Probing the Presence of a Single or Binary Black Hole in the Globular Cluster NGC 6752 with Pulsar Dynamics. *Monica Colpi, Michela Mapelli, & Andrea Possenti.* 599, 1260 (2003)

BL LACERTAE OBJECTS

Relation between BL Lacertae Objects and Flat-Spectrum Radio Quasars. *J. H. Fan.* 585, L23 (2003)

Clear Evidence for Intranight Optical Variability in Radio-quiet Quasars. *Gopal-Krishna, C. S. Stalin, Ram Sagar, & Paul J. Wiita.* 586, L25 (2003)

The Gamma-Ray Blazar Content of the Northern Sky. *David Sowards-Emmerd, Roger W. Romani, & Peter F. Michelson.* 590, 109 (2003)

Coordinated Multiwavelength Observations of BL Lacertae in 2000. *M. Böttcher, A. P. Marscher, M. Ravasio, M. Villata, C. M. Raiteri, H. D. Aller, M. F. Aller, H. Teräsranta, O. Mang, G. Tagliaferri, F. Ahoronian, H. Krawczynski, O. M. Kurtanidze, M. G. Nikolashvili, M. A. Ibrahimov, I. E. Papadakis, K. Tsinganos, K. Sadakane, N. Okada, L. O. Takalo, A. Sillanpää, G. Tosti, S. Ciprini, A. Frasca, E. Marilli, R. Robb, J. C. Noble, S. G. Jorstad, V. A. Hagen-Thorn, V. M. Larionov, R. Nesci, M. Maesano, R. D. Schwartz, J. Basler, P. W. Gorham, H. Iwamatsu, T. Kato, C. Pullen, E. Benítez, J. A. de Diego, M. Moilanen, A. Oksanen, D. Rodriguez, A. C. Sadun, M. Kelly, M. T. Carini, H. R. Miller, S. Catalano, D. Dultzin-Hacyan, J. H. Fan, G. Ghisellini, R. Ishioka, H. Karttunen, P. Keinänen, N. A. Kudryavtseva, M. Lainela, L. Lanteri, E. G. Larionova, K. Matsumoto, J. R. Mattox, I. McHardy, F. Montagni, G. Nucciarelli, L. Ostorero, J. Papamastorakis, M. Pasanen, G. Sobrito, & M. Uemura.* 596, 847 (2003)

CATALOGS

Improved Astrometry and Photometry for the Luyten Catalog. I. Bright Stars. *Andrew Gould & Samir Salim.* 582, 1001 (2003)

Improved Astrometry and Photometry for the Luyten Catalog. II. Faint Stars and Revised Catalog. *Samir Salim & Andrew Gould.* 582, 1011 (2003)

An Outer Galaxy Molecular Cloud Catalog. *Christopher M. Brunt, C. R. Kerton, & Caroline Pomerleau.* 144, 47 (2003)

Interferometric Phase Calibration Sources in the Declination Range 0° to −30°. *Joshua N. Winn, Alok R. Patnaik, & J. M. Wrobel.* 145, 83 (2003)

Rotation Measures of Compact Sources in the Canadian Galactic Plane Survey. *J. C. Brown, A. R. Taylor, & B. J. Jackel.* 145, 213 (2003)

Sloan Digital Sky Survey Catalog of Stars in the Draco Dwarf Spheroidal Galaxy. *Heather A. Rave, Chongshan Zhao, Heidi Jo Newberg, Brian*

Yanny, Donald P. Schneider, J. Brinkman, & Don Q. Lamb. 145, 245 (2003)

A Deep *Chandra* Catalog of X-Ray Point Sources toward the Galactic Center. *M. P. Muno, F. K. Baganoff, M. W. Bautz, W. N. Brandt, P. S. Broos, E. D. Feigelson, G. P. Garmire, M. R. Morris, G. R. Ricker, & L. K. Townsley.* 589, 225 (2003)

Lyman Break Galaxies at Redshift $z \sim 3$: Survey Description and Full Data Set. *Charles C. Steidel, Kurt L. Adelberger, Alice E. Shapley, Max Pettini, Mark Dickenson, & Mauro Giavalisco.* 592, 728 (2003)

The 160 Square Degree *ROSAT* Survey: The Revised Catalog of 201 Clusters with Spectroscopic Redshifts. *C. R. Mullis, B. R. McNamara, H. Quintana, A. Vikhlinin, J. P. Henry, I. M. Gioia, A. Hornstrup, W. Forman, & C. Jones.* 594, 154 (2003)

The Serendipitous Extragalactic X-Ray Source Identification Program. I. Characteristics of the Hard X-Ray Sample. *Fiona A. Harrison, Megan E. Eckart, Peter H. Mao, David J. Helfand, & Daniel Stern.* 596, 944 (2003)

A Merged Catalog of Clusters of Galaxies from Early Sloan Digital Sky Survey Data. *Neta A. Bahcall, Timothy A. McKay, James Annis, Rita S. J. Kim, Feng Dong, Sarah Hansen, Tomo Goto, James E. Gunn, Chris Miller, R. C. Nichol, Marc Postman, Don Schneider, Josh Schroeder, Wolfgang Voges, Jon Brinkmann, & Masataka Fukugita.* 148, 243 (2003)

The *ROSAT* North Ecliptic Pole Survey: The Optical Identifications. *I. M. Gioia, J. P. Henry, C. R. Mullis, H. Böhringer, U. G. Briel, W. Voges, & J. P. Huchra.* 149, 29 (2003)

Star Formation Rate Indicators in the Sloan Digital Sky Survey. *A. M. Hopkins, C. J. Miller, R. C. Nichol, A. J. Connolly, M. Bernardi, P. L. Gómez, T. Goto, C. A. Tremonti, J. Brinkmann, Ž. Ivezić, & D. Q. Lamb.* 599, 971 (2003)

A Catalog of Bright Filamentary Structures in the Interstellar Medium. *Tom Jackson, Michael Werner, & T. N. Gautier III.* 149, 365 (2003)

CELESTIAL MECHANICS

On the Fate of Close-in Extrasolar Planets. *Ing-Guey Jiang, Wing-Huen Ip, & Li-Chen Yeh.* 582, 449 (2003)

Dynamic Habitability of Known Extrasolar Planetary Systems. *Kristen Menou & Serge Tabachnik.* 583, 473 (2003)

Excitation of Orbital Eccentricities by Repeated Resonance Crossings: Requirements. *E. I. Chiang.* 584, 465 (2003)

Could the 55 Cancri Planetary System Really Be in the 3:1 Mean Motion Resonance? *Jianghui Ji, Hiroshi Kinoshita, Lin Liu, & Guangyu Li.* 585, L139 (2003)

Eccentricity Evolution of Extrasolar Multiple Planetary Systems Due to the Depletion of Nascent Protostellar Disks. *M. Nagasawa, D. N. C. Lin, & S. Ida.* 586, 1374 (2003)

The Janus Head of the HD 12661 Planetary System. *Krzysztof Goździewski & Andrzej J. Maciejewski.* 586, L153 (2003)

A Dynamical Fossil in the Ursa Minor Dwarf Spheroidal Galaxy. *Jan T. Kleyna, Mark I. Wilkinson, Gerard Gilmore, & N. Wyn Evans.* 588, L21 (2003)

The Geometry of Resonant Signatures in Debris Disks with Planets. *Marc J. Kuchner & Matthew J. Holman.* 588, 1110 (2003)

The Librating Companions in HD 37124, HD 12661, HD 82943, 47 Ursa Majoris, and GJ 876: Alignment or Antialignment? *Jianghui Ji, Lin Liu, Hiroshi Kinoshita, Jilin Zhou, Hiroshi Nakai, & Guangyu Li.* 591, L57 (2003)

Successive Refinements in Long-Term Integrations of Planetary Orbits. *F. Varadi, B. Runnegar, & M. Ghil.* 592, 620 (2003)

Secular Evolution of Hierarchical Planetary Systems. *Man Hoi Lee & S. J. Peale.* 592, 1201 (2003)

Monte Carlo Simulations of Globular Cluster Evolution. III. Primordial Binary Interactions. *J. M. Fregeau, M. A. Gürkan, K. J. Joshi, & F. A. Rasio.* 593, 772 (2003)

Extrasolar Planets in Mean-Motion Resonance: Apses Alignment and Asymmetric Stationary Solutions. *C. Beaugé, S. Ferraz-Mello, & T. A. Michtchenko.* 593, 1124 (2003)

Where Is the Second Planet in the HD 160691 Planetary System? *Krzysztof Gozdźiewski, Maciej Konacki, & Andrzej J. Maciejewski.* 594, 1019 (2003)

The Secular Evolution of the Primordial Kuiper Belt. *Joseph M. Hahn.* 595, 531 (2003)

Stable 1:2 Resonant Periodic Orbits in Elliptic Three-Body Systems. *Nader Haghighipour, Jocelyn Couetdic, Ferenc Varadi, & William B. Moore.* 596, 1332 (2003)

Occurrence and Stability of Apsidal Resonance in Multiple Planetary Systems. *Ji-Lin Zhou & Yi-Sui Sun.* 598, 1290 (2003)

Conditions of Dynamical Stability for the HD 160691 Planetary System. *Eric Bois, Ludmila Kiseleva-Eggleton, Nicolas Rambaux, & Elke Pilat-Lohinger.* 598, 1312 (2003)

Resonant Trapping of Planetesimals by Planet Migration: Debris Disk Clumps and Vega's Similarity to the Solar System. *M. C. Wyatt.* 598, 1321 (2003)

Three-dimensional Dynamics of Narrow Planetary Rings. *Eugene I. Chiang & Christopher J. Culter.* 599, 675 (2003)

COMETS: GENERAL

Fluorescence Efficiencies of Monodeuterio-Methane in Comets: Toward the Determination of the Deuterium/Hydrogen Ratio in Methane. *Hideyo Kawakita & Jun-ichi Watanabe.* 582, 534 (2003)

Side Group Addition to the Polycyclic Aromatic Hydrocarbon Coronene by Proton Irradiation in Cosmic Ice Analogs. *Max P. Bernstein, Marla H. Moore, Jamie E. Elsila, Scott A. Sandford, Louis J. Allamandola, & Richard N. Zare.* 582, L25 (2003)

Charge Abundances of the Solar Wind Ions Inferred from Cometary X-Ray Spectra. *V. Kharchenko, Matt Rigazio, A. Dalgarno, & V. A. Krasnopolsky.* 585, L73 (2003)

An S_2 Fluorescence Model for Interpreting High-Resolution Cometary Spectra. I. Model Description and Initial Results. *Celine Reyle & D. C. Boice.* 587, 464 (2003)

Detections of OH toward the Extreme Carbon Star IRC +10216. *K. E. Saavik Ford, David A. Neufeld, Paul F. Goldsmith, & Gary J. Melnick.* 589, 430 (2003)

Saturated Hydrocarbons in Comet 153P/Ikeya-Zhang: Ethane, Methane, and Monodeuterio-Methane. *Hideyo Kawakita, Jun-ichi Watanabe, Daisuke Kinoshita, Masateru Ishiguro, & Ryosuke Nakamura.* 590, 573 (2003)

Peculiar Pair of Distant Periodic Comets C/2002 A1 and C/2002 A2 (LINEAR). *Zdenek Sekanina, Paul W. Chodas, Miloš Tichý, Jana Tichá, & Michal Kočer.* 591, L67 (2003)

Irregular Particles in Comet C/1995 O1 Hale-Bopp Inferred from Its Mid-Infrared Spectrum. *F. Moreno, O. Muñoz, R. Vilaplana, & A. Molina.* 595, 522 (2003)

Metal Lines in DA White Dwarfs. *B. Zuckerman, D. Koester, I. N. Reid, & M. Huensch.* 596, 477 (2003)

Facile Generation and Storage of Polycyclic Aromatic Hydrocarbon Ions in Astrophysical Ices. *Murthy S. Gudipati & Louis J. Allamandola.* 596, L195 (2003)

Possible Distortion of the Interplanetary Magnetic Field by the Dust Trail of Comet 122P/de Vico. *G. H. Jones, A. Balogh, C. T. Russell, & M. K. Dougherty.* 597, L61 (2003)

Erosion Model for the Sungrazing Comets Observed with the *Solar and Heliospheric Observatory*. *Zdenek Sekanina.* 597, 1237 (2003)

COMETS: INDIVIDUAL

Alphanumeric: C/2002 A1

Peculiar Pair of Distant Periodic Comets C/2002 A1 and C/2002 A2 (LINEAR). *Zdenek Sekanina, Paul W. Chodas, Miloš Tichý, Jana Tichá, & Michal Kočer.* 591, L67 (2003)

Alphanumeric: C/2002 A2

Peculiar Pair of Distant Periodic Comets C/2002 A1 and C/2002 A2 (LINEAR). *Zdenek Sekanina, Paul W. Chodas, Miloš Tichý, Jana Tichá, & Michal Kočer.* 591, L67 (2003)

Name: 122P/de Vico

Possible Distortion of the Interplanetary Magnetic Field by the Dust Trail of Comet 122P/de Vico. *G. H. Jones, A. Balogh, C. T. Russell, & M. K. Dougherty.* 597, L61 (2003)

Name: Hale-Bopp (C/1995 O1)

Irregular Particles in Comet C/1995 O1 Hale-Bopp Inferred from Its Mid-Infrared Spectrum. *F. Moreno, O. Muñoz, R. Vilaplana, & A. Molina.* 595, 522 (2003)

Name: Ikeya-Zhang (C/2002 C1)

Heliocentric Dependence of the Sodium Emission of Comet 153P/Ikeya-Zhang. *Jun-ichi Watanabe, Hideyo Kawakita, Reiko Furusho, & Mitsugu Fujii.* 585, L159 (2003)

Name: 153P/Ikeya-Zhang

Saturated Hydrocarbons in Comet 153P/Ikeya-Zhang: Ethane, Methane, and Monodeuterio-Methane. *Hideyo Kawakita, Jun-ichi Watanabe, Daisuke Kinoshita, Masateru Ishiguro, & Ryosuke Nakamura.* 590, 573 (2003)

Name: Wild 2

Discovery of Dust Trail of *STARDUST* Comet Sample Return Mission Target: 81P/Wild 2. *M. Ishiguro, S. M. Kwon, Y. Sarugaku, S. Hasegawa, F. Usui, S. Nishiura, Y. Nakada, & H. Yano.* 589, L101 (2003)

CONDUCTION

Models of Galaxy Clusters with Thermal Conduction. *Nadia L. Zakamska & Ramesh Narayan.* 582, 162 (2003)

Fast Reconnection in a Two-Stage Process. *Fabian Heitsch & Ellen G. Zweibel.* 583, 229 (2003)

Diffusive Nuclear Burning in Neutron Star Envelopes. *Philip Chang & Lars Bildsten.* 585, 464 (2003)

Chandra Temperature Map of A754 and Constraints on Thermal Conduction. *M. Markevitch, P. Mazzotta, A. Vikhlinin, D. Burke, Y. Butt, L. David, H. Donnelly, W. R. Forman, D. Harris, D.-W. Kim, S. Virani, & J. Vrtilek.* 586, L19 (2003)

Suppression of Fast Reconnection by Magnetic Shear. *Fabian Heitsch & Ellen G. Zweibel.* 590, 291 (2003)

The Response of Model and Astrophysical Thermonuclear Flames to Curvature and Stretch. *L. J. Dursi, M. Zingale, A. C. Calder, B. Fryxell, F. X. Timmes, N. Vladimirova, R. Rosner, A. Caceres, D. Q. Lamb, K. Olson, P. M. Ricker, K. Riley, A. Siegel, & J. W. Truran.* 595, 955 (2003)

Thermal Instability in Clusters of Galaxies with Conduction. *Woong-Tae Kim & Ramesh Narayan.* 596, 889 (2003)

Atmospheric Loss of Exoplanets Resulting from Stellar X-Ray and Extreme-Ultraviolet Heating. *H. Lammer, F. Selsis, I. Ribas, E. F. Guinan, S. J. Bauer, & W. W. Weiss.* 598, L121 (2003)

What Shapes the Luminosity Function of Galaxies? *A. J. Benson, R. G. Bower, C. S. Frenk, C. G. Lacey, C. M. Baugh, & S. Cole.* 599, 38 (2003)

Spontaneous Generation of the Magnetic Field and Suppression of the Heat Conduction in Cold Fronts. *Nobuhiro Okabe & Makoto Hattori.* 599, 964 (2003)

CONVECTION

The Dynamic Evolution of Twisted Magnetic Flux Tubes in a Three-dimensional Convecting Flow. I. Uniformly Buoyant Horizontal Tubes. *Y. Fan, W. P. Abbett, & G. H. Fisher.* 582, 1206 (2003)

The Chemical Composition of White Dwarfs as a Test of Convective Efficiency during Core Helium Burning. *Oscar Straniero, Immaculada Domínguez, Gianluca Imbriani, & Luciano Piersanti.* 583, 878 (2003)

Polarization of Photospheric Lines from Turbulent Dynamo Simulations. *J. Sánchez Almeida, T. Emonet, & F. Cattaneo.* 585, 536 (2003)

Magnetic Fields in Massive Stars. II. The Buoyant Rise of Magnetic Flux Tubes through the Radiative Interior. *K. B. MacGregor & J. P. Cassinelli.* 586, 480 (2003)

Numerical Modeling of the Solar Tachocline. II. Forced Turbulence with Imposed Shear. *Mark S. Miesch.* 586, 663 (2003)

On the Interaction between Convection and Magnetic Fields. *Fausto Cattaneo, Thierry Emonet, & Nigel Weiss.* 588, 1183 (2003)

Three-dimensional Magnetohydrodynamic Simulations of Radiatively Inefficient Accretion Flows. *Igor V. Igumenshchev, Ramesh Narayan, & Marek A. Abramowicz.* 592, 1042 (2003)

Solar Wind Effects on the Transport of 3–10 MeV Cosmic-Ray Electrons from Solar Minimum to Solar Maximum. *S. E. S. Ferreira, M. S. Potgieter, D. M. Moeketsi, B. Heber, & H. Fichtner.* 594, 552 (2003)

Stellar Hydrodynamics in Radiative Regions. *Patrick A. Young, Karen A. Knierman, Jane R. Rigby, & David Arnett.* 595, 1114 (2003)

What Causes p-Mode Asymmetry Reversal? *Dali Georgobiani, Robert F. Stein, & Åke Nordlund.* 596, 698 (2003)

The New Transiting Planet OGLE-TR-56b: Orbit and Atmosphere. *Dimitar D. Sasselov.* 596, 1327 (2003)

The Fate of Nonradiative Magnetized Accretion Flows: Magnetically Frustrated Convection. *Ue-Li Pen, Christopher D. Matzner, & Shingkwong Wong.* 596, L207 (2003)

Wavelike Properties of Solar Supergranulation Detected in Doppler Shift Data. *J. Schou.* 596, L259 (2003)

The Scales of Granulation, Mesogranulation, and Supergranulation. *Mark Peter Rast.* 597, 1200 (2003)

A Viscoelastic Theory of Turbulent Fluid Permeated with Fibril Magnetic Fields. *D. W. Longcope, T. C. B. McLeish, & G. H. Fisher.* 599, 661 (2003)

COSMIC BACKGROUND RADIATION

The Thermal Memory of Reionization History. *Lam Hui & Zoltán Haiman.* 596, 9 (2003)

COSMIC RAYS: GENERAL

Galactic Gamma-Ray Halo of the Nearby Starbust Galaxy NGC 253. *C. Itoh, R. Enomoto, S. Yanagita, T. Yoshida, & T. G. Tsuru.* 584, L65 (2003)

WIND Observations of Anomalous Cosmic Rays from Solar Minimum to Maximum. *D. V. Reames & F. B. McDonald.* 586, L99 (2003)

A Kinsip between the EGRET Supernova Remnants and Sagittarius A East. *Marco Fatuzzo & Fulvio Melia.* 596, 1035 (2003)

Voyager 2 Measurements in the Outer Heliosphere of the Energy Spectra of Cosmic-Ray Nuclei from Less than 100 MeV Nucleon^{-1} to More than 1.0 GeV Nucleon^{-1}. *W. R. Webber, F. B. McDonald, & A. Lukasiak.* 599, 582 (2003)

COSMOLOGY

Metallicity of the Intergalactic Medium Using Pixel Statistics. II. The Distribution of Metals as Traced by C IV. *Joop Schaye, Anthony Aguirre, Tae-Sun Kim, Tom Theuns, Michael Rauch, & Wallace L. W. Sargent.* 596, 768 (2003)

COSMOLOGY: COSMIC MICROWAVE BACKGROUND

Cosmological Implications of the BIMA 30 GHz Sunyaev-Zeldovich Effect Galaxy Cluster Survey. *Yen-Ting Lin & Joseph J. Mohr.* 582, 574 (2003)

The Effect of Bandpass Uncertainities on Component Separation. *Sarah Church, Lloyd Knox, & Martin White.* 582, L63 (2003)

The *Microwave Anisotropy Probe* Mission. *C. L. Bennett, M. Bay, M. Halpern, G. Hinshaw, C. Jackson, N. Jarosik, A. Kogut, M. Limon, S. S. Meyer, L. Page, D. N. Spergel, G. S. Tucker, D. T. Wilkinson, E. Wollack, & E. L. Wright.* 583, 1 (2003)

Probing the Reionization History of the Universe using the Cosmic Microwave Background Polarization. *Manoj Kaplinghat, Mike Chu, Zoltan Haiman, Gilbert P. Holder, Lloyd Knox, & Constantinos Skordis.* 583, 24 (2003)

Acoustic Peaks and Dips in the Cosmic Microwave Background Power Spectrum: Observational Data and Cosmological Constraints. *R. Durrer, B. Novosyadlyj, & S. Apunevych.* 583, 33 (2003)

Cosmological Perturbation Theory Using the Schrödinger Equation. *István Szapudi & Nick Kaiser.* 583, L1 (2003)

An Instrument for Investigating the Large Angular Scale Polarization of the Cosmic Microwave Background. *Brian G. Keating, Christopher W. O'Dell, Joshua O. Gundersen, Lucio Piccirillo, Nate C. Stebor, & Peter T. Timbie.* 144, 1 (2003)

Linear Gas Dynamics in the Expanding Universe. *Nickolay Y. Gnedin, Emily J. Baker, Thomas J. Bethell, Meredith M. Drosback, A. Gayler Harford, Amalia K. Hicks, Adam G. Jensen, Brian A. Keeney, Christopher M. Kelso, Mark C. Neyrinck, Scott E. Pollack, & Timothy P. van Vliet.* 583, 525 (2003)

The Effect of Radiative Cooling on the Sunyaev-Zeldovich Cluster Counts and Angular Power Spectra: Analytic Treatment. *Yu-Ying Zhang & Xiang-Ping Wu.* 583, 529 (2003)

Sunyaev-Zeldovich Effect Imaging of MACS Galaxy Clusters at $z > 0.5$. *Samuel J. LaRoque, Marshall Joy, John E. Carlstrom, Harald Ebeling, Massimiliano Bonamente, Kyle S. Dawson, Alastair Edge, William L. Holzapfel, Amber D. Miller, Daisuke Nagai, Sandeep K. Patel, & Erik D. Reese.* 583, 559 (2003)

The Three-Point Correlation Function for Spin-2 Fields. *Masahiro Takada & Bhuvnesh Jain.* 583, L49 (2003)

Cosmic Microwave Background as a Gravity Probe. *Luca Amendola, Claudia Quercellini, Domenico Tocchini-Valentini, & Alessandro Pasqui.* 583, L53 (2003)

Higher Order Moments of the Cosmic Shear and Other Spin-2 Fields. *Matias Zaldarriaga & Román Scoccimarro.* 584, 559 (2003)

Dipole Anisotropies of *IRAS* Galaxies and the Contribution of a Large-Scale Local Void. *Kenji Tomita.* 584, 580 (2003)

Cosmic Microwave Background Anisotropy Measurement from Python V. *K. Coble, S. Dodelson, M. Dragovan, K. Ganga, L. Knox, J. Kovac, B. Ratra, & T. Souradeep.* 584, 585 (2003)

Cosmic Needles versus Cosmic Microwave Background Radiation. *Aigen Li.* 584, 593 (2003)

Probing Intracluster Magnetic Fields with Cosmic Microwave Background Polarization. *Hiroshi Ohno, Masahiro Takada, Klaus Dolag, Matthias Bartelmann, & Naoshi Sugiyama.* 584, 599 (2003)

Inhomogeneities in the Microwave Background Radiation Interpreted within the Framework of the Quasi–Steady State Cosmology. *J. V. Narlikar, R. G. Vishwakarma, Amir Hajian, Tarun Souradeep, G. Burbridge, & F. Hoyle.* 585, 1 (2003)

The Optical Design and Characterization of the *Microwave Anisotropy Probe*. *L. Page, C. Jackson, C. Barnes, C. Bennett, M. Halpern, G. Hinshaw, N. Jarosik, A. Kogut, M. Limon, S. S. Meyer, D. N. Spergel, G. S. Tucker, D. T. Wilkinson, E. Wollack, & E. L. Wright.* 585, 566 (2003)

Importance of Cluster Structural Evolution in Using X-Ray and Sunyaev-Zeldovich Effect Galaxy Cluster Surveys to Study Dark Energy. *Subhabrata Majumdar & Joseph J. Mohr.* 585, 603 (2003)

Cosmological Contraints from a Combined Analysis of the Cluster Mass Function and Microwave Background Anisotropies. *Alessandro Melchiorri, Paul Bode, Neta A. Bahcall, & Joseph Silk.* 586, L1 (2003)

Ionization History of the Cosmic Plasma in the Light of the Recent Cosmic Background Imager and Future *Planck* Data. *A. G. Doroshkevich, I. P. Naselsky, P. D. Naselsky, & I. D. Novikov.* 586, 709 (2003)

Design, Implementation, and Testing of the *Microwave Anisotropy Probe* Radiometers. *N. Jarosik, C. L. Bennett, M. Halpern, G. Hinshaw, A. Kogut, M. Limon, S. S. Meyer, L. Page, M. Pospieszalski, D. N. Spergel, G. S. Tucker, D. T. Wilkinson, E. Wollack, E. L. Wright, & Z. Zhang.* 145, 413 (2003)

Observational Constraints on Cardassian Expansion. *S. Sen & A. A. Sen.* 588, 1 (2003)

Probing Dark Energy with the Cosmic Microwave Background: Projected Constraints from the *Wilkinson Microwave Anisotropy Probe* and *Planck*. *Amedeo Balbi, C. Baccigalupi, F. Perrotta, S. Matarrese, & N. Vittorio.* 588, L5 (2003)

Cosmological Acceleration through Transition to Constant Scalar Curvature. *Leonard Parker, William Komp, & Daniel A. T. Vanzella.* 588, 663 (2003)

Point Sources in the *Wilkinson Microwave Anisotropy Probe* Sky Maps. *Elena Pierpaoli.* 589, 58 (2003)

Observational Strategies of Cosmic Microwave Background Temperature and Polarization Interferometry Experiments. *Chan-Gyung Park, Kin-Wang Ng, Changbom Park, Guo-Chin Liu, & Keiichi Umetsu.* 589, 67 (2003)

Non-Gaussianity of the Derived Maps from the First-Year *Wilkinson Microwave Anisotropy Probe* Data. *Lung-Yih Chiang, Pavel D. Naselsky, Oleg V. Verkhodanov, & Michael J. Way.* 590, L65 (2003)

The Universe Was Reionized Twice. *Renyue Cen.* 591, 12 (2003)

The Implications of *Wilkinson Microwave Anisotropy Probe* Observations for Population III Star Formation Processes. *Renyue Cen.* 591, L5 (2003)

Cluster Sunyaev-Zeldovich Effect Scaling Relations. *Ian G. McCarthy, Arif Babul, Gilbert P. Holder, & Michael L. Balogh.* 591, 515 (2003)

The Sunyaev-Zeldovich Effect Signature of Excess Entropy in Distant, Massive Clusters. *Ian G. McCarthy, Gilbert P. Holder, Arif Babul, & Michael L. Balogh.* 591, 526 (2003)

The Anisotropy of the Microwave Background to $l = 3500$: Deep Field Observatons with the Cosmic Background Imager. *B. S. Mason, T. J. Pearson, A. C. S. Readhead, M. C. Shepherd, J. Sievers, P. S. Udomprasert, J. K. Cartwright, A. J. Farmer, S. Padin, S. T. Myers, J. R. Bond, C. R. Contaldi, U. Pen, S. Prunet, D. Pogosyan, J. E. Carlstrom, J. Kovac, E. M. Leitch, C. Pryke, N. W. Halverson, W. L. Holzapfel, P. Altamirano, L. Bronfman, S. Casassus, J. May, & M. Joy.* 591, 540 (2003)

The Anisotropy of the Microwave Background to $l = 3500$: Mosaic Observations with the Cosmic Background Imager. *T. J. Pearson, B. S. Mason, A. C. S. Readhead, M. C. Shepherd, J. L. Sievers, P. S. Udomprasert, J. K. Cartwright, A. J. Farmer, S. Padin, S. T. Myers, J. R. Bond, C. R. Contaldi, U.-L. Pen, S. Prunet, D. Pogosyan, J. E. Carlstrom, J. Kovac, E. M. Leitch, C. Pryke, N. W. Halverson, W. L. Holzapfel, P. Altamirano, L. Bronfman, S. Casassus, J. May, & M. Joy.* 591, 556 (2003)

A Fast Gridded Method for the Estimation of the Power Spectrum of the Cosmic Microwave Background from Interferometer Data with Application to the Cosmic Background Imager. *S. T. Myers, C. R. Contaldi, J. R. Bond, U.-L. Pen, D. Pogosyan, S. Prunet, J. L. Sievers, B. S. Mason, T. J. Pearson, A. C. S. Readhead, & M. C. Shepherd.* 591, 575 (2003)

Cosmological Parameters from Cosmic Background Imager Observations and Comparisons with BOOMERANG, DASI, and MAXIMA. *J. L. Sievers, J. R. Bond, J. K. Cartwright, C. R. Contaldi, B. S. Mason, S. T. Myers, S. Padin, T. J. Pearson, U.-L. Pen, D. Pogosyan, S. Prunet, A. C. S. Readhead, M. C. Shepherd, P. S. Udomprasert, L. Bronfman, W. L. Holzapfel, & J. May.* 591, 599 (2003)

Early Quintessence in Light of the *Wilkinson Microwave Anisotropy Probe*. *Robert R. Caldwell, Michael Doran, Christian M. Müller, Gregor Schäfer, & Christof Wetterich.* 591, L75 (2003)

Peculiar Velocity Limits from Measurements of the Spectrum of the Sunyaev-Zeldovich Effect in Six Clusters of Galaxies. *B. A. Benson, S. E. Church, P. A. R. Ade, J. J. Bock, K. M. Ganga, J. R. Hinderks, P. D. Mauskopf, B. Philhour, M. C. Runyan, & K. L. Thompson.* 592, 674 (2003)

Galactic Foreground Constraints from the Python V Cosmic Microwave Background Anisotropy Data. *Pia Mukherjee, Kim Coble, Mark Dragovan, Ken Ganga, John Kovac, Bharat Ratra, & Tarun Souradeep.* 592, 692 (2003)

Wavelet Band Powers of the Primordial Power Spectrum from Cosmic Microwave Background Data. *Pia Mukherjee & Yun Wang.* 593, 38 (2003)

Polarization Observations in a Low Synchrotron Emission Field at 1.4 GHz. *G. Bernardi, E. Carretti, S. Cortiglioni, R. J. Sault, M. J. Kesteven, & S. Poppi.* 594, L5 (2003)

The Spectrum of the Cosmic Microwave Background Anisotropy from the Combined *COBE* FIRAS and *WMAP* Observations. *D. J. Fixsen.* 594, L67 (2003)

The Reionization History at High Redshifts. I. Physical Models and New Constraints from Cosmic Microwave Background Polarization. *Zoltán Haiman & Gilbert P. Holder.* 595, 1 (2003)

The Reionization History at High Redshifts. II. Estimating the Optical Depth to Thomson Scattering from Cosmic Microwave Background Polarization. *Gilbert P. Holder, Zoltán Haiman, Manoj Kaplinghat, & Lloyd Knox.* 595, 13 (2003)

First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Preliminary Maps and Basic Results. *C. L. Bennett, M. Halpern, G. Hinshaw, N. Jarosik, A. Kogut, M. Limon, S. S. Meyer, L. Page, D. N. Spergel, G. S. Tucker, E. Wollack, E. L. Wright, C. Barnes, M. R. Greason, R. S. Hill, E. Komatsu, M. R. Nolta, N. Odegard, H. V. Peiris, L. Verde, & J. L. Weiland.* 148, 1 (2003)

First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: On-Orbit Radiometer Characterization. *N. Jarosik, C. Barnes, C. L. Bennett, M. Halpern, G. Hinshaw, A. Kogut, M. Limon, S. S. Meyer, L. Page, D. N. Spergel, G. S. Tucker, J. L. Weiland, E. Wollack, & E. L. Wright.* 148, 29 (2003)

First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Beam Profiles and Window Functions. *L. Page, C. Barnes, G. Hinshaw, D. N. Spergel, J. L. Weiland, E. Wollack, C. L. Bennett, M. Halpern, N. Jarosik, A. Kogut, M. Limon, S. S. Meyer, G. S. Tucker, & E. L. Wright.* 148, 39 (2003)

First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Galactic Signal Contamination from Sidelobe Pickup. *C. Barnes, R. S. Hill, G. Hinshaw, L. Page, C. L. Bennett, M. Halpern, N. Jarosik, A. Kogut, M. Limon, S. S. Meyer, G. S. Tucker, E. Wollack, & E. L. Wright.* 148, 51 (2003)

First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Data Processing Methods and Systematic Errors Limits. *G. Hinshaw, C. Barnes, C. L. Bennett, M. R. Greason, M. Halpern, R. S. Hill, N. Jarosik, A. Kogut, M. Limon, S. S. Meyer, N. Odegard, L. Page, D. N. Spergel, G. S. Tucker, J. L. Weiland, E. Wollack, & E. L. Wright.* 148, 63 (2003)

First-Year *Wilkinson Microwave Anisotrophy Probe* (*WMAP*) Observations: Foreground Emission. *C. L. Bennett, R. S. Hill, G. Hinshaw, M. R. Nolta, N. Odegard, L. Page, D. N. Spergel, J. L. Weiland, E. L. Wright, M. Halpern, N. Jarosik, A. Kogut, M. Limon, S. S. Meyer, G. S. Tucker, & E. Wollack.* 148, 97 (2003)

First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Tests of Gaussianity. *E. Komatsu, A. Kogut, M. R. Nolta, C. L. Bennett, M. Halpern, G. Hinshaw, N. Jarosik, M. Limon, S. S. Meyer, L. Page, D. N. Spergel, G. S. Tucker, L. Verde, E. Wollack, & E. L. Wright.* 148, 119 (2003)

First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: The Angular Power Spectrum. *G. Hinshaw, D. N. Spergel, L. Verde, R. S. Hill, S. S. Meyer, C. Barnes, C. L. Bennett, M. Halpern, N. Jarosik, A. Kogut, E. Komatsu, M. Limon, L. Page, G. S. Tucker, J. L. Weiland, E. Wollack, & E. L. Wright.* 148, 135 (2003)

First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Temperature-Polarization Correlation. *A. Kogut, D. N. Spergel, C. Barnes, C. L. Bennett, M. Halpern, G. Hinshaw, N. Jarosik, M. Limon, S. S. Meyer, L. Page, G. S. Tucker, E. Wollack, & E. L. Wright.* 148, 161 (2003)

First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Determination of Cosmological Parameters. *D. N. Spergel, L. Verde, H. V.*

Peiris, E. Komatsu, M. R. Nolta, C. L. Bennett, M. Halpern, G. Hinshaw, N. Jarosik, A. Kogut, M. Limon, S. S. Meyer, L. Page, G. S. Tucker, J. L. Weiland, E. Wollack, & E. L. Wright. 148, 175 (2003)

First-Year *Wilkinson Microwave Anisotrophy Probe* (*WMAP*) Observations: Parameter Estimation Methodology. *L. Verde, H. V. Peiris, D. N. Spergel, M. R. Nolta, C. L. Bennett, M. Halpern, G. Hinshaw, N. Jarosik, A. Kogut, M. Limon, S. S. Meyer, L. Page, G. S. Tucker, E. Wollack, & E. L. Wright.* 148, 195 (2003)

First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Implications for Inflation. *H. V. Peiris, E. Komatsu, L. Verde, D. N. Spergel, C. L. Bennett, M. Halpern, G. Hinshaw, N. Jarosik, A. Kogut, M. Limon, S. S. Meyer, L. Page, G. S. Tucker, E. Wollack, & E. L. Wright.* 148, 213 (2003)

First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Interpretation of the TT and TE Angular Power Spectrum Peaks. *L. Page, M. R. Nolta, C. Barnes, C. L. Bennett, M. Halpern, G. Hinshaw, N. Jarosik, A. Kogut, M. Limon, S. S. Meyer, H. V. Peiris, D. N. Spergel, G. S. Tucker, E. Wollack, & E. L. Wright.* 148, 233 (2003)

Implications of the *Wilkinson Microwave Anisotropy Probe* Age Measurement for Stellar Evolution and Dark Energy. *Lawrence M. Krauss.* 596, L1 (2003)

Normal Parameters for an Analytic Description of the Cosmic Microwave Background Cosmological Parameter Likelihood. *Mike Chu, Manoj Kaplinghat, & Lloyd Knox.* 596, 725 (2003)

Distances and Cosmology from Galaxy Cluster Cosmic Microwave Background Data. *Asantha Cooray.* 596, L127 (2003)

BOOMERANG: A Balloon-Borne Millimeter-Wave Telescope and Total Power Receiver for Mapping Anisotropy in the Cosmic Microwave Background. *B. P. Crill, P. A. R. Ade, D. R. Artusa, R. S. Bhatia, J. J. Bock, A. Boscaleri, P. Cardoni, S. E. Church, K. Coble, P. deBernardis, G. deTroia, P. Farese, K. M. Ganga, M. Giacometti, C. V. Haynes, E. Hivon, V. V. Hristov, A. Iacoangeli, W. C. Jones, A. E. Lange, L. Martinis, S. Masi, P. V. Mason, P. D. Mauskopf, L. Miglio, T. Montroy, C. B. Netterfield, C. G. Paine, E. Pascale, F. Paicentini, G. Polenta, F. Pongetti, G. Romeo, J. E. Ruhl, F. Scaramuzzi, D. Sforna, & A. D. Turner.* 148, 527 (2003)

High-Resolution Simulations of Non-Gaussian Cosmic Microwave Background Maps in Spherical Coordinates. *M. Liguori, S. Matarrese, & L. Moscardini.* 597, 57 (2003)

Kinetic Sunyaev-Zel'dovich Effect and Cosmic Microwave Background Polarization from Subsonic Bulk Motions of Dense Gas Clouds in Galaxy Cluster Cores. *J. M. Diego, P. Mazzotta, & J. Silk.* 597, L1 (2003)

Measuring the Statistical Isotropy of the Cosmic Microwave Background Anisotropy. *Amir Hajian & Tarun Souradeep.* 597, L5 (2003)

Photon Orbital Angular Momentum in Astrophysics. *Martin Harwit.* 597, 1266 (2003)

Detection of the Integrated Sachs-Wolfe and Sunyaev-Zel'dovich Effects from the Cosmic Microwave Background–Galaxy Correlation. *Pablo Fosalba, Enrique Gaztañaga, & Francisco J. Castander.* 597, L89 (2003)

Sunyaev-Zel'dovich Effects from Quasars in Galaxies and Groups. *A. Lapi, A. Cavaliere, & G. De Zotti.* 597, L93 (2003)

Contributions of Point Extragalactic Sources to the Cosmic Microwave Background Bispectrum. *F. Argüeso, J. González-Nuevo, & L. Toffolatti.* 598, 86 (2003)

The MAT/TOCO Measurement of the Angular Power Spectrum of the Cosmic Microwave Background at 30 and 40 GHz. *M. R. Nolta, M. J. Devlin, W. B. Dorwart, A. D. Miller, L. A. Page, J. Puchalla, E. Torbet, & H. T. Tran.* 598, 97 (2003)

The Clustering Dipole of the Local Universe from the Two Micron All Sky Survey. *Ariyeh H. Maller, Daniel H. McIntosh, Neal Katz, & Martin D. Weinberg.* 598, L1 (2003)

Small-Scale Cosmic Microwave Background Temperature and Polarization Anisotropies due to Patchy Reionization. *Mário G. Santos, Asantha Cooray, Zoltán Haiman, Lloyd Knox, & Chung-Pei Ma.* 598, 756 (2003)

COBE DMR–normalized Dark Energy Cosmogony. *Pia Mukherjee, A. J. Banday, Alain Riazuelo, Krzysztof M. Górski, & Bharat Ratra.* 598, 767 (2003)

Direct Wavelet Expansion of the Primordial Power Spectrum. *Pia Mukherjee & Yun Wang.* 598, 779 (2003)

Triple Experiment Spectrum of the Sunyaev-Zel'dovich Effect in the Coma Cluster: H_0. *E. S. Battistelli, M. De Petris, L. Lamagna, G. Luzzi, R. Maoli, A. Melchiorri, F. Melchiorri, A. Orlando, E. Palladino, G. Savini, Y. Rephaeli, M. Shimon, M. Signore, & S. Colafrancesco.* 598, L75 (2003)

Model-Independent Reconstruction of the Primordial Power Spectrum from *Wilkinson Microwave Anisotropy Probe* Data. *Pia Mukherjee & Yun Wang.* 599, 1 (2003)

Combining *Wilkinson Microwave Anisotropy Probe* and Sloan Digital Sky Survey Quasar Data on Reionization Constrains Cosmological Parameters and Star Formation Efficiency. *Weihsueh A. Chiu, Xiaohui Fan, & Jeremiah P. Ostriker.* 599, 759 (2003)

Estimates of Cosmological Parameters Using the Cosmic Microwave Background Angular Power Spectrum of ACBAR. *J. H. Goldstein, P. A. R. Ade, J. J. Bock, J. R. Bond, C. Cantalupo, C. R. Contaldi, M. D. Daub, W. L. Holzapfel, C. Kuo, A. E. Lange, M. Lueker, M. Newcomb, J. B. Peterson, D. Pogosyan, J. E. Ruhl, M. C. Runyan, & E. Torbet.* 599, 773 (2003)

Improved Measurement of the Angular Power Spectrum of Temperature Anisotropy in the Cosmic Microwave Background from Two New Analyses of BOOMERANG Observations. *J. E. Ruhl, P. A. R. Ade, J. J. Bock, J. R. Bond, J. Borrill, A. Boscaleri, C. R. Contaldi, B. P. Crill, P. de Bernardis, G. De Troia, K. Ganga, M. Giacometti, E. Hivon, V. V. Hristov, A. Iacoangeli, A. H. Jaffe, W. C. Jones, A. E. Lange, S. Masi, P. Mason, P. D. Mauskopf, A. Melchiorri, T. Montroy, C. B. Netterfield, E. Pascale, F. Piacentini, D. Pogosyan, G. Polenta, S. Prunet, & G. Romeo.* 599, 786 (2003)

Phase Cross-Correlation of the *Wilkinson Microwave Anisotropy Probe* Internal Linear Combination Map and Foregrounds. *Pavel D. Naselsky, Andrey G. Doroshkevich, & Oleg V. Verkhodanov.* 599, L53 (2003)

ACBAR: The Arcminute Cosmology Bolometer Array Receiver. *M. C. Runyan, P. A. R. Ade, R. S. Bhatia, J. J. Bock, M. D. Daub, J. H. Goldstein, C. V. Haynes, W. L. Holzapfel, C. L. Kuo, A. E. Lange, J. Leong, M. Lueker, M. Newcomb, J. B. Peterson, C. Reichardt, J. Ruhl, G. Sirbi, E. Torbet, C. Tucker, A. D. Turner, & D. Woolsey.* 149, 265 (2003)

COSMOLOGY: COSMOLOGICAL PARAMETERS

Intrinsic Degeneracy of Gravitational Lens Time Delays: The Case for a Simple Quadruple System in Λ Cold Dark Matter Cosmology. *HongSheng Zhao & Bo Qin.* 582, 2 (2003)

Cosmological Constraints from Compact Radio Sources Angular Size versus Redshift Data. *Gang Chen & Bharat Ratra.* 582, 586 (2003)

CO Luminosity Functions for Far-Infrared– and *B*-Band–selected Galaxies and the First Estimate for Ω_{H_2}. *Dusan Keres, Min S. Yun, & J. S. Young.* 582, 659 (2003)

Probing the Reionization History of the Universe using the Cosmic Microwave Background Polarization. *Manoj Kaplinghat, Mike Chu, Zoltan Haiman, Gilbert P. Holder, Lloyd Knox, & Constantinos Skordis.* 583, 24 (2003)

Acoustic Peaks and Dips in the Cosmic Microwave Background Power Spectrum: Observational Data and Cosmological Constraints. *R. Durrer, B. Novosyadlyj, & S. Apunevych.* 583, 33 (2003)

Gravitational Lens Time Delays in Cold Dark Matter. *C. S. Kochanek.* 583, 49 (2003)

Gamma-Ray Burst Hubble Diagram to $z = 4.5$. *Bradley E. Schaefer.* 583, L67 (2003)

Radio Galaxy Redshift–Angular Size Data Constraints on Dark Energy. *Silviu Podariu, Ruth A. Daly, Matthew P. Mory, & Bharat Ratra.* 584, 577 (2003)

Sample Variance Considerations for Cluster Surveys. *Wayne Hu & Andrey V. Kravtsov.* 584, 702 (2003)

Constraints on Cardassian Expansion from Distant Type Ia Supernovae. *Zhong-Hong Zhu & Masa-Katsu Fujimoto.* 585, 52 (2003)

The Cluster Mass Function from Early Sloan Digital Sky Survey Data: Cosmological Implications. *Neta A. Bahcall, Feng Dong, Paul Bode, Rita Kim, James Annis, Timothy A. McKay, Sarah Hansen, Josh Schroeder, James Gunn, Jeremiah P. Ostriker, Marc Postman, Robert C. Nichol, Chris Miller, Tomotsugu Goto, Jon Brinkmann, Gillian R. Knapp, Don Q. Lamb, Donald P. Schneider, Michael S. Vogeley, & Donald G. York.* 585, 182 (2003)

Importance of Cluster Structural Evolution in Using X-Ray and Sunyaev-Zeldovich Effect Galaxy Cluster Surveys to Study Dark Energy. *Subhabrata Majumdar & Joseph J. Mohr.* 585, 603 (2003)

Chandra Observations of A2029: The Dark Matter Profile Down to below $0.01r_{vir}$ in an Unusually Relaxed Cluster. *Aaron D. Lewis, David A. Buote, & John T. Stocke.* 586, 135 (2003)

Cosmological Contraints from a Combined Analysis of the Cluster Mass Function and Microwave Background Anisotropies. *Alessandro Melchiorri, Paul Bode, Neta A. Bahcall, & Joseph Silk.* 586, L1 (2003)

The Kinematic State of the Local Volume. *Alan B. Whiting.* 587, 186 (2003)

Cluster Morphology as a Test of Different Cosmological Models. *Tamon Suwa, Asao Habe, Kohji Yoshikawa, & Takashi Okamoto.* 588, 7 (2003)

The Amplitude of Mass Fluctuations. *Paul Bode & Neta A. Bahcall.* 588, L1 (2003)

Cosmological Acceleration through Transition to Constant Scalar Curvature. *Leonard Parker, William Komp, & Daniel A. T. Vanzella.* 588, 663 (2003)

Cosmological Constraints from the Evolution of the Cluster Baryon Mass Function at $z \sim 0.5$. *A. Vikhlinin, A. Voevodkin, C. R. Mullis, L. VanSpeybroeck, H. Quintana, B. R. McNamara, I. Gioia, A. Hornstrup, J. P. Henry, W. R. Forman, & C. Jones.* 590, 15 (2003)

Multicolor Light Curves of Type Ia Supernovae on the Color-Magnitude Diagram: A Novel Step toward More Precise Distance and Extinction Estimates. *Lifan Wang, Gerson Goldhaber, Greg Aldering, & Saul Perlmutter.* 590, 944 (2003)

The Implications of *Wilkinson Microwave Anisotropy Probe* Observations for Population III Star Formation Processes. *Renyue Cen.* 591, L5 (2003)

Early Quintessence in Light of the *Wilkinson Microwave Anisotropy Probe*. *Robert R. Caldwell, Michael Doran, Christian M. Müller, Gregor Schäfer, & Christof Wetterich.* 591, L75 (2003)

Relativistic Cosmology Number Counts and the Luminosity Function. *Marcelo B. Ribeiro & William R. Stoeger.* 592, 1 (2003)

The Incidence of Strong-Lensing Clusters in the Red-Sequence Cluster Survey. *Michael D. Gladders, Henk Hoekstra, H. K. C. Yee, Patrick B. Hall, & L. Felipe Barrientos.* 593, 48 (2003)

Constraints on the Equation of State of Dark Energy and the Hubble Constant from Stellar Ages and the Cosmic Microwave Background. *Raul Jimenez, Licia Verde, Tommaso Treu, & Daniel Stern.* 593, 622 (2003)

Cosmological Results from High-z Supernovae. *John L. Tonry, Brian P. Schmidt, Brian Barris, Pablo Candia, Peter Challis, Alejandro Clocchiatti, Alison L. Coil, Alexei V. Filippenko, Peter Garnavich, Craig Hogan, Stephen T. Holland, Saurabh Jha, Robert P. Kirshner, Kevin Krisciunas, Bruno Leibundgut, Weidong Li, Thomas Matheson, Mark M. Phillips, Adam G. Riess, Robert Schommer, R. Chris Smith, Jesper Sollerman, Jason Spyromilio, Christopher W. Stubbs, & Nicholas B. Suntzeff.* 594, 1 (2003)

Future Type Ia Supernova Data as Tests of Dark Energy from Modified Friedmann Equations. *Yun Wang, Katherine Freese, Paolo Gondolo, & Matthew Lewis.* 594, 25 (2003)

A New Method to Map Flares in Quasars. *Atsunori Yonehara, Shin Mineshige, Yoh Takei, George Chartas, & Edwin L. Turner.* 594, 107 (2003)

Probing Dark Energy Using Baryonic Oscillations in the Galaxy Power Spectrum as a Cosmological Ruler. *Chris Blake & Karl Glazebrook.* 594, 665 (2003)

Gamma-Ray Burst Energetics and the Gamma-Ray Burst Hubble Diagram: Promises and Limitations. *J. S. Bloom, D. A. Frail, & S. R. Kulkarni.* 594, 674 (2003)

First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Tests of Gaussianity. *E. Komatsu, A. Kogut, M. R. Nolta, C. L. Bennett, M. Halpern, G. Hinshaw, N. Jarosik, M. Limon, S. S. Meyer, L. Page, D. N. Spergel, G. S. Tucker, L. Verde, E. Wollack, & E. L. Wright.* 148, 119 (2003)

First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: The Angular Power Spectrum. *G. Hinshaw, D. N. Spergel, L. Verde, R. S. Hill, S. S. Meyer, C. Barnes, C. L. Bennett, M. Halpern, N. Jarosik, A. Kogut, E. Komatsu, M. Limon, L. Page, G. S. Tucker, J. L. Weiland, E. Wollack, & E. L. Wright.* 148, 135 (2003)

First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Determination of Cosmological Parameters. *D. N. Spergel, L. Verde, H. V. Peiris, E. Komatsu, M. R. Nolta, C. L. Bennett, M. Halpern, G. Hinshaw, N. Jarosik, A. Kogut, M. Limon, S. S. Meyer, L. Page, G. S. Tucker, J. L. Weiland, E. Wollack, & E. L. Wright.* 148, 175 (2003)

First-Year *Wilkinson Microwave Anisotrophy Probe* (*WMAP*) Observations: Parameter Estimation Methodology. *L. Verde, H. V. Peiris, D. N. Spergel, M. R. Nolta, C. L. Bennett, M. Halpern, G. Hinshaw, N. Jarosik, A. Kogut, M. Limon, S. S. Meyer, L. Page, G. S. Tucker, E. Wollack, & E. L. Wright.* 148, 195 (2003)

First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Interpretation of the TT and TE Angular Power Spectrum Peaks. *L. Page, M. R. Nolta, C. Barnes, C. L. Bennett, M. Halpern, G. Hinshaw, N. Jarosik, A. Kogut, M. Limon, S. S. Meyer, H. V. Peiris, D. N. Spergel, G. S. Tucker, E. Wollack, & E. L. Wright.* 148, 233 (2003)

Implications of the *Wilkinson Microwave Anisotropy Probe* Age Measurement for Stellar Evolution and Dark Energy. *Lawrence M. Krauss.* 596, L1 (2003)

An Estimate of Ω_m without Conventional Priors. *H. Feldman, R. Juszkiewicz, P. Ferreira, M. Davis, E. Gaztañaga, J. Fry, A. Jaffe, S. Chambers, L. da Costa, M. Bernardi, R. Giovanelli, M. Haynes, & G. Wegner.* 596, L131 (2003)

A Model-Independent Determination of the Expansion and Acceleration Rates of the Universe as a Function of Redshift and Constraints on Dark Energy. *Ruth A. Daly & S. G. Djorgovski.* 597, 9 (2003)

Cosmic Shear Statistics in the Suprime-Cam 2.1 Square Degree Field: Constraints on Ω_m and Σ_8. *Takashi Hamana, Satoshi Miyazaki, Kazuhiro Shimasaku, Hisanori Furusawa, Mamoru Doi, Masaru Hamabe, Katsumi Imi, Masahiko Kimura, Yutaka Komiyama, Fumiaki Nakata, Norio Okada, Sadanori Okamura, Masami Ouchi, Maki Sekiguchi, Masafumi Yagi, & Naoki Yasuda.* 597, 98 (2003)

Decaying Cold Dark Matter and the Evolution of the Cluster Abundance. *Masamune Oguri, Keitaro Takahashi, Hiroshi Ohno, & Kei Kotake.* 597, 645 (2003)

New Constraints on Ω_M, Ω_Λ, and w from an Independent Set of 11 High-Redshift Supernovae Observed with the *Hubble Space Telescope*. *R. A. Knop, G. Aldering, R. Amanullah, P. Astier, G. Blanc, M. S. Burns, A. Conley, S. E. Deustua, M. Doi, R. Ellis, S. Fabbro, G. Folatelli, A. S. Fruchter, G. Garavini, S. Garmond, K. Garton, R. Gibbons, G. Goldhaber, A. Goobar, D. E. Groom, D. Hardin, I. Hook, D. A. Howell, A. G. Kim, B. C. Lee, C. Lidman, J. Mendez, S. Nobili, P. E. Nugent, R. Pain, N. Panagia, C. R. Pennypacker, S. Perlmutter, R. Quimby, J. Raux, N. Regnault, P. Ruiz-Lapuente, G. Sainton, B. Schaefer, K. Schahmaneche, E. Smith, A. L. Wood-Vasey, & N. Yasuda.* 598, 102 (2003)

The Effects of Relativistic Corrections on Cosmological Parameter Estimations from Sunyaev-Zel'dovich Effect Cluster Surveys. *Zuhui Fan & Yanling Wu.* 598, 713 (2003)

Probing Dark Energy with Baryonic Acoustic Oscillations from Future Large Galaxy Redshift Surveys. *Hee-Jong Seo & Daniel J. Eisenstein.* 598, 720 (2003)

Small-Scale Cosmic Microwave Background Temperature and Polarization Anisotropies due to Patchy Reionization. *Mário G. Santos, Asantha Cooray, Zoltán Haiman, Lloyd Knox, & Chung-Pei Ma.* 598, 756 (2003)

Model-Independent Reconstruction of the Primordial Power Spectrum from *Wilkinson Microwave Anisotropy Probe* Data. *Pia Mukherjee & Yun Wang.* 599, 1 (2003)

Estimates of Cosmological Parameters Using the Cosmic Microwave Background Angular Power Spectrum of ACBAR. *J. H. Goldstein, P. A. R. Ade, J. J. Bock, J. R. Bond, C. Cantalupo, C. R. Contaldi, M. D. Daub, W. L. Holzapfel, C. Kuo, A. E. Lange, M. Lueker, M. Newcomb, J. B. Peterson, D. Pogosyan, J. E. Ruhl, M. C. Runyan, & E. Torbet.* 599, 773 (2003)

Improved Measurement of the Angular Power Spectrum of Temperature Anisotropy in the Cosmic Microwave Background from Two New Analyses of BOOMERANG Observations. *J. E. Ruhl, P. A. R. Ade, J. J. Bock, J. R. Bond, J. Borrill, A. Boscaleri, C. R. Contaldi, B. P. Crill, P. de Bernardis, G. De Troia, K. Ganga, M. Giacometti, E. Hivon, V. V. Hristov, A. Iacoangeli, A. H. Jaffe, W. C. Jones, A. E. Lange, S. Masi, P. Mason, P. D. Mauskopf, A. Melchiorri, T. Montroy, C. B. Netterfield, E. Pascale, F. Piacentini, D. Pogosyan, G. Polenta, S. Prunet, & G. Romeo.* 599, 786 (2003)

The Richness-dependent Cluster Correlation Function: Early Sloan Digital Sky Survey Data. *Neta A. Bahcall, Feng Dong, Lei Hao, Paul Bode, Jim Annis, James E. Gunn, & Donald P. Schneider.* 599, 814 (2003)

Expected Constraints on the Generalized Chaplygin Equation of State from Future Supernova Experiments and Gravitational Lensing Statistics. *P. T. Silva & O. Bertolami.* 599, 829 (2003)

COSMOLOGY: DARK MATTER

Intrinsic Degeneracy of Gravitational Lens Time Delays: The Case for a Simple Quadruple System in Λ Cold Dark Matter Cosmology. *HongSheng Zhao & Bo Qin.* 582, 2 (2003)

The *Microwave Anisotropy Probe* Mission. *C. L. Bennett, M. Bay, M. Halpern, G. Hinshaw, C. Jackson, N. Jarosik, A. Kogut, M. Limon, S. S. Meyer, L. Page, D. N. Spergel, G. S. Tucker, D. T. Wilkinson, E. Wollack, & E. L. Wright.* 583, 1 (2003)

Gravitational Lens Time Delays in Cold Dark Matter. *C. S. Kochanek.* 583, 49 (2003)

The Mean Number of Extra Microimage Pairs for Macrolensed Quasars. *Jonathan Granot, Paul L. Schechter, & Joachim Wambsganss.* 583, 575 (2003)

New Mass Estimators for Tracer Populations. *N. W. Evans, M. I. Wilkinson, K. M. Perrett, & T. J. Bridges.* 583, 752 (2003)

Exotic Lensing Corrections to the Microlensing Optical Depth. *J.-F. Glicenstein.* 584, 278 (2003)

The Structural Evolution of Substructure. *Eric Hayashi, Julio F. Navarro, James E. Taylor, Joachim Stadel, & Thomas Quinn.* 584, 541 (2003)

A Limit on the Cosmological Mass Density and Power Spectrum from the Rotation Curves of Low Surface Brightness Galaxies. *Stacy S. McGaugh, Michael K. Barker, & W. J. G. de Blok.* 584, 566 (2003)

Analytic Cross Sections for Substructure Lensing. *Charles R. Keeton.* 584, 664 (2003)

Modeling Intracluster Gas in Triaxial Dark Halos: An Analytic Approach. *Jounghun Lee & Yasushi Suto.* 585, 151 (2003)

The Cluster Mass Function from Early Sloan Digital Sky Survey Data: Cosmological Implications. *Neta A. Bahcall, Feng Dong, Paul Bode, Rita Kim, James Annis, Timothy A. McKay, Sarah Hansen, Josh Schroeder, James Gunn, Jeremiah P. Ostriker, Marc Postman, Robert C. Nichol, Chris Miller, Tomotsugu Goto, Jon Brinkmann, Gillian R. Knapp, Don Q. Lamb, Donald P. Schneider, Michael S. Vogeley, & Donald G. York.* 585, 182 (2003)

The Failure of Self-Interacting Dark Matter to Solve the Overabundance of Dark Satellites and the Soft Core Question. *Elena D'Onghia & Andreas Burkert.* 586, 12 (2003)

On the Spiral Structure of NGC 2915 and Dark Matter. *F. S. Masset & M. Bureau.* 586, 152 (2003)

Tree Particle-Mesh: An Adaptive, Efficient, and Parallel Code for Collisionless Cosmological Simulation. *Paul Bode & Jeremiah P. Ostriker.* 145, 1 (2003)

ROSAT HRI Investigation of the NGC 507 X-Ray Halo. *M. Paolillo, G. Fabbiano, G. Peres, & D.-W. Kim.* 586, 850 (2003)

A Dynamical Fossil in the Ursa Minor Dwarf Spheroidal Galaxy. *Jan T. Kleyna, Mark I. Wilkinson, Gerard Gilmore, & N. Wyn Evans.* 588, L21 (2003)

Mass-Temperature Relation of Galaxy Clusters: Implication from the Observed Luminosity-Temperature Relation and X-Ray Temperature Function. *Mamoru Shimizu, Tetsu Kitayama, Shin Sasaki, & Tasushi Suto.* 590, 197 (2003)

Modeling the Void H I Column Density Spectrum with Subgalactic Halos. *Curtis V. Manning.* 591, 79 (2003)

Microlensing Optical Depth toward the Galactic Bulge from Microlensing Observations during 2000 with Difference Image Analysis. *T. Sumi, F. Abe, I. A. Bond, R. J. Dodd, J. B. Hearnshaw, M. Honda, M. Honma, Y. Kan-ya, P. M. Kilmartin, K. Masuda, Y. Matsubara, Y. Muraki, T. Nakamura, R. Nishi, S. Noda, K. Ohnishi, O. K. L. Petterson, N. J. Rattenbury, M. Reid, To. Saito, Y. Saito, H. Sato, M. Sekiguchi, J. Skuljan, D. J. Sullivan, M. Takeuti, P. J. Tristram, S. Wilkinson, T. Yanagisawa, & P. C. M. Yock.* 591, 204 (2003)

Early Structure Formation and Reionization in a Warm Dark Matter Cosmology. *Naoki Yoshida, Aaron Sokasian, Lars Hernquist, & Volker Springel.* 591, L1 (2003)

Simulations of Galaxy Formation in a Λ Cold Dark Matter Universe. I. Dynamical and Photometric Properties of a Simulated Disk Galaxy. *Mario G. Abadi, Julio F. Navarro, Matthias Steinmetz, & Vincent R. Eke.* 591, 499 (2003)

Weak Gravitational Lensing by a Sample of X-Ray–luminous Clusters of Galaxies. III. Serendipitous Weak Lensing Detections of Dark and Luminous Mass Concentrations. *Haakon Dahle, Kristian Pedersen, Per B. Lilje, Steve J. Maddox, & Nick Kaiser.* 591, 662 (2003)

Direct Mapping of Massive Compact Objects in Extragalactic Dark Halos. *Kaiki Taro Inoue & Masashi Chiba.* 591, L83 (2003)

Unstable Cold Dark Matter and the Cuspy Halo Problem in Dwarf Galaxies. *F. J. Sánchez-Salcedo.* 591, L107 (2003)

Lensing Optical Depths for Substructure and Isolated Dark Matter Halos. *Jacqueline Chen, Andrey V. Kravtsov, & Charles R. Keeton.* 592, 24 (2003)

Stellar Contribution to the Galactic Bulge Microlensing Optical Depth. *Cheongho Han & Andrew Gould.* 592, 172 (2003)

Detection of Dark Matter Skewness in the VIRMOS-DESCART Survey: Implications for Ω_0. *Ue-Li Pen, Tongjie Zhang, Ludovic van Waerbeke, Yannick Mellier, Pengjie Zhang, & John Dubinski.* 592, 664 (2003)

On the Origin of the Inner Structure of Halos. *Alberto Manrique, Andreu Raig, Eduard Salvador-Solé, Teresa Sanchis, & José María Solanes.* 593, 26 (2003)

Mass-to-Light Ratios of 2dF Galaxies. *Tereasa G. Brainerd & Michael A. Specian.* 593, L7 (2003)

Primordial Black Holes as Dark Matter: The Power Spectrum and Evaporation of Early Structures. *N. Afshordi, P. McDonald, & D. N. Spergel.* 594, L71 (2003)

First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Preliminary Maps and Basic Results. *C. L. Bennett, M. Halpern, G. Hinshaw, N. Jarosik, A. Kogut, M. Limon, S. S. Meyer, L. Page, D. N. Spergel, G. S. Tucker, E. Wollack, E. L. Wright, C. Barnes, M. R. Greason, R. S. Hill, E. Komatsu, M. R. Nolta, N. Odegard, H. V. Peiris, L. Verde, & J. L. Weiland.* 148, 1 (2003)

A Model-Independent Determination of the Expansion and Acceleration Rates of the Universe as a Function of Redshift and Constraints on Dark Energy. *Ruth A. Daly & S. G. Djorgovski.* 597, 9 (2003)

Simulations of Galaxy Formation in a Λ Cold Dark Matter Universe. II. The Fine Structure of Simulated Galactic Disks. *Mario G. Abadi, Julio F. Navarro, Matthias Steinmetz, & Vincent R. Eke.* 597, 21 (2003)

Cosmic Shear Statistics in the Suprime-Cam 2.1 Square Degree Field: Constraints on Ω_m and Σ_8. *Takashi Hamana, Satoshi Miyazaki, Kazuhiro Shimasaku, Hisanori Furusawa, Mamoru Doi, Masaru Hamabe, Katsumi Imi, Masahiko Kimura, Yutaka Komiyama, Fumiaki Nakata, Norio Okada, Sadanori Okamura, Masami Ouchi, Maki Sekiguchi, Masafumi Yagi, & Naoki Yasuda.* 597, 98 (2003)

Optimal Weak-Lensing Skewness Measurements. *Tong-Jie Zhang, Ue-Li Pen, Pengji Zhang, & John Dubinski.* 598, 818 (2003)

Theory of Pixel Lensing toward M31. II. The Velocity Anisotropy and Flattening of the MACHO Distribution. *E. Kerins, J. An, N. W. Evans, P. Baillon, B. J. Carr, Y. Giraud-Héraud, A. Gould, P. Hewett, J. Kaplan, S. Paulin-Henriksson, S. J. Smartt, Y. Tsarpras, & D. Valls-Gabaud.* 598, 993 (2003)

The Wendelstein Calar Alto Pixellensing Project (WeCAPP): First MACHO Candidates. *Arno Riffeser, Jürgen Fliri, Ralf Bender, Stella Seitz, & Claus A. Gössl.* 599, L17 (2003)

Modified Newtonian Dynamics and the "Dearth of Dark Matter in Ordinary Elliptical Galaxies." *Mordehai Milgrom & Robert H. Sanders.* 599, L25 (2003)

The Richness-dependent Cluster Correlation Function: Early Sloan Digital Sky Survey Data. *Neta A. Bahcall, Feng Dong, Lei Hao, Paul Bode, Jim Annis, James E. Gunn, & Donald P. Schneider.* 599, 814 (2003)

Expected Constraints on the Generalized Chaplygin Equation of State from Future Supernova Experiments and Gravitational Lensing Statistics. *P. T. Silva & O. Bertolami.* 599, 829 (2003)

Limits on the Evolution of Galaxies from the Statistics of Gravitational Lenses. *Kyu-Hyun Chae & Shude Mao.* 599, L61 (2003)

COSMOLOGY: DIFFUSE RADIATION

Analysis of the Diffuse Near-Infrared Emission from Two-Micron All-Sky Survey Deep Integration Data: Foregrounds versus the Cosmic Infrared Background. *S. Odenwald, A. Kashlinsky, J. C. Mather, M. F. Skrutskie, & R. M. Cutri.* 583, 535 (2003)

Can Radiative Cooling and Nongravitational Heating Explain Simultaneously the Global X-Ray Properties of Clusters and the Unresolved Cosmic X-Ray Background? *Yan-Jie Xue & Xiang-Ping Wu.* 584, 34 (2003)

Faint Active Galactic Nuclei and the Ionizing Background. *Michael Schirber & James S. Bullock.* 584, 110 (2003)

An Empirical Decomposition of Near-Infrared Emission into Galactic and Extragalactic Components. *Richard G. Arendt & Eli Dwek.* 585, 305 (2003)

A Model for *SIRTF* Galaxy Counts. *Jeremy Mould.* 587, L93 (2003)

The Resolved Fraction of the Cosmic X-Ray Background. *A. Moretti, S. Campana, D. Lazzati, & G. Tagliaferri.* 588, 696 (2003)

The Far-Infrared Background Correlation with Cosmic Microwave Background Lensing. *Yong-Seon Song, Asantha Cooray, Lloyd Knox, & Matias Zaldarriaga.* 590, 664 (2003)

Has the Optical Extragalactic Background Light Been Detected? *K. Mattila.* 591, 119 (2003)

Extraplanar Emission-Line Gas in Edge-on Spiral Galaxies. II. Optical Spectroscopy. *Scott T. Miller & Sylvain Veilleux.* 592, 79 (2003)

Galactic Foreground Constraints from the Python V Cosmic Microwave Background Anisotropy Data. *Pia Mukherjee, Kim Coble, Mark Dragovan, Ken Ganga, John Kovac, Bharat Ratra, & Tarun Souradeep.* 592, 692 (2003)

Polarization Observations in a Low Synchrotron Emission Field at 1.4 GHz. *G. Bernardi, E. Carretti, S. Cortiglioni, R. J. Sault, M. J. Kesteven, & S. Poppi.* 594, L5 (2003)

Probing beyond the Epoch of Hydrogen Reionization with 21 Centimeter Radiation. *Benedetta Ciardi & Piero Madau.* 596, 1 (2003)

Optical Identification of the *ASCA* Medium Sensitivity Survey in the Northern Sky: Nature of Hard X-Ray–Selected Luminous Active Galactic Nuclei. *Masayuki Akiyama, Yoshihiro Ueda, Kouji Ohta, Tadayuki Takahashi, & Toru Yamada.* 148, 275 (2003)

Extraplanar Emission-Line Gas in Edge-On Spiral Galaxies. I. Deep Emission-Line Imaging. *Scott T. Miller & Sylvain Veilleux.* 148, 383 (2003)

On the Evolution of the Ionizing Emissivity of Galaxies and Quasars Required by the Hydrogen Reionization. *Jordi Miralda-Escudé.* 597, 66 (2003)

Hα Emission from High-Velocity Clouds and Their Distances. *M. E. Putman, J. Bland-Hawthorn, S. Veilleux, B. K. Gibson, K. C. Freeman, & P. R. Maloney.* 597, 948 (2003)

A *Hubble Space Telescope* Search for Lyman Continuum Emission from Galaxies at $1.1 < z < 1.4$. *Matthew Malkan, Wayne Webb, & Quinn Konopacky.* 598, 878 (2003)

Cosmological Evolution of the Hard X-Ray Active Galactic Nucleus Luminosity Function and the Origin of the Hard X-Ray Background. *Yoshihiro Ueda, Masayuki Akiyama, Kouji Ohta, & Takamitsu Miyaji.* 598, 886 (2003)

Mapping the Cosmic Web with Lyα Emission. *Steven R. Furlanetto, Joop Schaye, Volker Springel, & Lars Hernquist.* 599, L1 (2003)

COSMOLOGY: DISTANCE SCALE

Intrinsic Degeneracy of Gravitational Lens Time Delays: The Case for a Simple Quadruple System in Λ Cold Dark Matter Cosmology. *HongSheng Zhao & Bo Qin.* 582, 2 (2003)

Gravitational Lens Time Delays in Cold Dark Matter. *C. S. Kochanek.* 583, 49 (2003)

Gamma-Ray Burst Hubble Diagram to $z = 4.5$. *Bradley E. Schaefer.* 583, L67 (2003)

Constraints on Cardassian Expansion from Distant Type Ia Supernovae. *Zhong-Hong Zhu & Masa-Katsu Fujimoto.* 585, 52 (2003)

The Phase Coherence of Light from Extragalactic Sources: Direct Evidence against First-Order Planck-Scale Fluctuations in Time and Space. *Richard Lieu & Lloyd W. Hillman.* 585, L77 (2003)

Reconstructing Cepheid Light Curve with Fourier Techniques. I. The Fourier Expansion and Interrelations. *Chow-Choong Ngeow, Shashi M. Kanbur, Sergei Nikolaev, Nial R. Tanvir, & Martin A. Hendry.* 586, 959 (2003)

Chandra Observations of the Galaxy Cluster A478: The Interaction of Hot Gas and Radio Plasma in the Core, and an Improved Determination of the Compton y-Parameter. *M. Sun, C. Jones, S. S. Murray, S. W. Allen, A. C. Fabian, & A. C. Edge.* 587, 619 (2003)

Fundamental Properties and Distances of Large Magellanic Cloud Eclipsing Binaries. IV. HV 5936. *E. L. Fitzpatrick, I. Ribas, E. F. Guinan, F. P. Maloney, & A. Claret.* 587, 685 (2003)

The Cepheid Distance to NGC 5236 (M83) with the ESO Very Large Telescope. *Frank Thim, G. A. Tammann, A. Saha, A. Dolphin, Allan Sandage, E. Tolstoy, & Lukas Labhardt.* 590, 256 (2003)

Multicolor Light Curves of Type Ia Supernovae on the Color-Magnitude Diagram: A Novel Step toward More Precise Distance and Extinction Estimates. *Lifan Wang, Gerson Goldhaber, Greg Aldering, & Saul Perlmutter.* 590, 944 (2003)

SN 1979C VLBI: 22 Years of Almost Free Expansion. *Norbert Bartel & Michael F. Bietenholz.* 591, 301 (2003)

Probing Planck-Scale Physics with Extragalactic Sources? *Y. Jack Ng, W. A. Christiansen, & H. van Dam.* 591, L87 (2003)

Prospects for the Determination of H_0 through Observation of Multiply Imaged Supernovae in Galaxy Cluster Fields. *Adam S. Bolton & Scott Burles.* 592, 17 (2003)

A Bayesian Analysis of the Cepheid Distance Scale. *Thomas G. Barnes III, W. H. Jefferys, J. O. Berger, Peter J. Mueller, K. Orr, & R. Rodriguez.* 592, 539 (2003)

Constraints on the Equation of State of Dark Energy and the Hubble Constant from Stellar Ages and the Cosmic Microwave Background. *Raul Jimenez, Licia Verde, Tommaso Treu, & Daniel Stern.* 593, 622 (2003)

Cosmological Results from High-z Supernovae. *John L. Tonry, Brian P. Schmidt, Brian Barris, Pablo Candia, Peter Challis, Alejandro Clocchiatti, Alison L. Coil, Alexei V. Filippenko, Peter Garnavich, Craig Hogan, Stephen T. Holland, Saurabh Jha, Robert P. Kirshner, Kevin Krisciunas, Bruno Leibundgut, Weidong Li, Thomas Matheson, Mark M. Phillips, Adam G. Riess, Robert Schommer, R. Chris Smith, Jesper Sollerman, Jason Spyromilio, Christopher W. Stubbs, & Nicholas B. Suntzeff.* 594, 1 (2003)

The Cepheid Distance to NGC 1637: A Direct Test of the Expanding Photosphere Method Distance to SN 1999em. *Douglas C. Leonard, Shashi M. Kanbur, Choong C. Ngeow, & Nial R. Tanvir.* 594, 247 (2003)

Gamma-Ray Burst Energetics and the Gamma-Ray Burst Hubble Diagram: Promises and Limitations. *J. S. Bloom, D. A. Frail, & S. R. Kulkarni.* 594, 674 (2003)

An Estimate of Ω_m without Conventional Priors. *H. Feldman, R. Juszkiewicz, P. Ferreira, M. Davis, E. Gaztañaga, J. Fry, A. Jaffe, S. Chambers, L. da Costa, M. Bernardi, R. Giovanelli, M. Haynes, & G. Wegner.* 596, L131 (2003)

Probing Dark Energy with Baryonic Acoustic Oscillations from Future Large Galaxy Redshift Surveys. *Hee-Jong Seo & Daniel J. Eisenstein.* 598, 720 (2003)

The Hubble Constant from the Gravitational Lens B1608+656. *L. V. E. Koopmans, T. Treu, C. D. Fassnacht, R. D. Blandford, & G. Surpi.* 599, 70 (2003)

Optimal Moments for the Analysis of Peculiar Velocity Surveys. II. Testing. *Hume A. Feldman, Richard Watkins, Adrian L. Melott, & Scott W. Chambers.* 599, 820 (2003)

COSMOLOGY: EARLY UNIVERSE

The *Microwave Anisotropy Probe* Mission. *C. L. Bennett, M. Bay, M. Halpern, G. Hinshaw, C. Jackson, N. Jarosik, A. Kogut, M. Limon, S. S. Meyer, L. Page, D. N. Spergel, G. S. Tucker, D. T. Wilkinson, E. Wollack, & E. L. Wright.* 583, 1 (2003)

Probing the Reionization History of the Universe using the Cosmic Microwave Background Polarization. *Manoj Kaplinghat, Mike Chu, Zoltan Haiman, Gilbert P. Holder, Lloyd Knox, & Constantinos Skordis.* 583, 24 (2003)

Predictions for the Counts of Faint, High-Redshift Galaxies in the Mid-Infrared. *Zoltán Haiman, David N. Spergel, & Edwin L. Turner.* 585, 630 (2003)

Reionization of Hydrogen and Helium by Early Stars and Quasars. *J. Stuart B. Wyithe & Abraham Loeb.* 586, 693 (2003)

Subaru Deep Survey. IV. Discovery of a Large-Scale Structure at Redshift ≃5. *K. Shimasaku, M. Ouchi, S. Okamura, N. Kashikawa, M. Doi, H. Furusawa, M. Hamabe, T. Hayashino, K. Kawabata, M. Kimura, K. Kodaira, Y. Komiyama, Y. Matsuda, M. Miyazaki, S. Miyazaki, F. Nakata, K. Ohta, Y. Ohyama, M. Sekiguchi, Y. Shioya, H. Tamura, Y. Taniguchi, M. Yagi, T. Yamada, & N. Yasuda.* 586, L111 (2003)

On the Total Energy of Open Friedmann-Robertson-Walker Universes. *V. Faraoni & F. I. Cooperstock.* 587, 483 (2003)

Was the Universe Reionized by Massive Metal-free Stars? *J. Stuart B. Wyithe & Abraham Loeb.* 588, L69 (2003)

Decline of the Space Density of Quasars between $z = 2$ and $z = 4$. *M. Vigotti, R. Carballo, C. R. Benn, G. De Zotti, R. Fanti, J. I. Gonzalez Serrano, K.-H. Mack, & J. Holt.* 591, 43 (2003)

Early Structure Formation and Reionization in a Warm Dark Matter Cosmology. *Naoki Yoshida, Aaron Sokasian, Lars Hernquist, & Volker Springel.* 591, L1 (2003)

High-Redshift Candidates and the Nature of Small Galaxies in the Hubble Deep Field. *Lisa J. Storrie-Lombardi, Ray J. Weymann, & Rodger I. Thompson.* 591, 623 (2003)

Simulations of Early Structure Formation: Primordial Gas Clouds. *Naoki Yoshida, Tom Abel, Lars Hernquist, & Naoshi Sugiyama.* 592, 645 (2003)

The Ionizing Efficiency of the First Stars. *Aparna Venkatesan & James W. Truran.* 594, L1 (2003)

First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Preliminary Maps and Basic Results. *C. L. Bennett, M. Halpern, G. Hinshaw, N. Jarosik, A. Kogut, M. Limon, S. S. Meyer, L. Page, D. N. Spergel, G. S. Tucker, E. Wollack, E. L. Wright, C. Barnes, M. R. Greason, R. S. Hill, E. Komatsu, M. R. Nolta, N. Odegard, H. V. Peiris, L. Verde, & J. L. Weiland.* 148, 1 (2003)

Direct Wavelet Expansion of the Primordial Power Spectrum. *Pia Mukherjee & Yun Wang.* 598, 779 (2003)

COSMOLOGY: GRAVITATIONAL LENSING

Distances and Cosmology from Galaxy Cluster Cosmic Microwave Background Data. *Asantha Cooray.* 596, L127 (2003)

Optimal Weak-Lensing Skewness Measurements. *Tong-Jie Zhang, Ue-Li Pen, Pengji Zhang, & John Dubinski.* 598, 818 (2003)

COSMOLOGY: LARGE-SCALE STRUCTURE OF UNIVERSE

Subaru Deep Survey. II. Luminosity Functions and Clustering Properties of Lyα Emitters at $z = 4.86$ in the Subaru Deep Field. *Masami Ouchi, Kazuhiro Shimasaku, Hisanori Furusawa, Masayuki Miyazaki, Mamoru Doi, Masaru Hamabe, Tomoki Hayashino, Masahiko Kimura, Keiichi Kodaira, Yutaka Komiyama, Yuichi Matsuda, Satoshi Miyazaki, Fumiaki Nakata, Sadanori Okamura, Maki Sekiguchi, Yasuhiro Shioya, Hajime Tamura, Yoshiaki Taniguchi, Masafumi Yagi, & Naoki Yasuda.* 582, 60 (2003)

Cosmological Constraints from Compact Radio Sources Angular Size versus Redshift Data. *Gang Chen & Bharat Ratra.* 582, 586 (2003)

Linear Gas Dynamics in the Expanding Universe. *Nickolay Y. Gnedin, Emily J. Baker, Thomas J. Bethell, Meredith M. Drosback, A. Gayler Harford, Amalia K. Hicks, Adam G. Jensen, Brian A. Keeney, Christopher M. Kelso, Mark C. Neyrinck, Scott E. Pollack, & Timothy P. van Vliet.* 583, 525 (2003)

The Effect of Radiative Cooling on the Sunyaev-Zeldovich Cluster Counts and Angular Power Spectra: Analytic Treatment. *Yu-Ying Zhang & Xiang-Ping Wu.* 583, 529 (2003)

Analysis of the Diffuse Near-Infrared Emission from Two-Micron All-Sky Survey Deep Integration Data: Foregrounds versus the Cosmic Infrared Background. *S. Odenwald, A. Kashlinsky, J. C. Mather, M. F. Skrutskie, & R. M. Cutri.* 583, 535 (2003)

Angular Distribution of Gamma-Ray Bursts and Weak Lensing. *Liliya R. Williams & Natalie Frey.* 583, 594 (2003)

The Three-Point Correlation Function for Spin-2 Fields. *Masahiro Takada & Bhuvnesh Jain.* 583, L49 (2003)

Statistics of Smoothed Cosmic Fields in Perturbation Theory. I. Formation and Useful Formulae in Second-Order Perturbation Theory. *Takahiko Matsubara.* 584, 1 (2003)

Higher Order Moments of the Cosmic Shear and Other Spin-2 Fields. *Matias Zaldarriaga & Román Scoccimarro.* 584, 559 (2003)

Radio Galaxy Redshift–Angular Size Data Constraints on Dark Energy. *Silviu Podariu, Ruth A. Daly, Matthew P. Mory, & Bharat Ratra.* 584, 577 (2003)

Dipole Anisotropies of *IRAS* Galaxies and the Contribution of a Large-Scale Local Void. *Kenji Tomita.* 584, 580 (2003)

Analytic Cross Sections for Substructure Lensing. *Charles R. Keeton.* 584, 664 (2003)

Sample Variance Considerations for Cluster Surveys. *Wayne Hu & Andrey V. Kravtsov.* 584, 702 (2003)

One-Point Statistics of the Cosmic Density Field in Real and Redshift Spaces with a Multiresolutional Decomposition. *Hu Zhan & Li-Zhi Fang.* 585, 12 (2003)

Toward a Measurement of the Cosmological Geometry at $z \sim 2$: Predicting Lyα Forest Correlation in Three Dimensions and the Potential of Future Data Sets. *Patrick McDonald.* 585, 34 (2003)

Gamma Rays from Intergalactic Shocks. *Uri Keshet, Eli Waxman, Abraham Loeb, Volker Springel, & Lars Hernquist.* 585, 128 (2003)

Clusters of Galaxies in the Local Universe. *C. S. Kochanek, Martin White, J. Huchra, L. Macri, T. H. Jarrett, S. E. Schneider, & J. Mader.* 585, 161 (2003)

The Cluster Mass Function from Early Sloan Digital Sky Survey Data: Cosmological Implications. *Neta A. Bahcall, Feng Dong, Paul Bode, Rita Kim, James Annis, Timothy A. McKay, Sarah Hansen, Josh Schroeder, James Gunn, Jeremiah P. Ostriker, Marc Postman, Robert C. Nichol, Chris Miller, Tomotsugu Goto, Jon Brinkmann, Gillian R. Knapp, Don Q. Lamb, Donald P. Schneider, Michael S. Vogeley, & Donald G. York.* 585, 182 (2003)

Galaxy Clustering Evolution in the UH8K Weak-Lensing Fields. *Gillian Wilson.* 585, 191 (2003)

Bias and the Power Spectrum beyond the Turnover. *Ruth Durrer, Andrea Gabrielli, Michael Joyce, & Francesco Sylos Labini.* 585, L1 (2003)

The Overdensities of Galaxy Environments as a Function of Luminosity and Color. *David W. Hogg, Michael R. Blanton, Daniel J. Eisenstein, James E. Gunn, David J. Schlegel, Idit Zehavi, Neta A. Bahcall, Jon Brinkmann, Istvan Csabai, Donald P. Schneider, David H. Weinberg, & Donald G. York.* 585, L5 (2003)

A Massive Warm Baryonic Halo in the Coma Cluster. *Massimiliano Bonamente, Marshall K. Joy, & Richard Lieu.* 585, 722 (2003)

Imaging Large-Scale Structure in the X-Ray Sky. *Yuxuan Yang, R. F. Mushotzky, A. J. Barger, L. L. Cowie, D. B. Sanders, & A. T. Steffen.* 585, L85 (2003)

Tree Particle-Mesh: An Adaptive, Efficient, and Parallel Code for Collisionless Cosmological Simulation. *Paul Bode & Jeremiah P. Ostriker.* 145, 1 (2003)

Deprojecting Densities from Angular Cross-Correlations. *Daniel J. Eisenstein.* 586, 718 (2003)

Small-Scale Clustering in Isotropic Arrival Distribution of Ultra–High-Energy Cosmic Rays and Implications for Their Source Candidates. *Hiroyuki Yoshiguchi, Shigehiro Nagataki, Sin-ya Tsubaki, & Katsuhiko Sato.* 586, 1211 (2003)

Subaru Deep Survey. IV. Discovery of a Large-Scale Structure at Redshift $\simeq$5. *K. Shimasaku, M. Ouchi, S. Okamura, N. Kashikawa, M. Doi, H. Furusawa, M. Hamabe, T. Hayashino, K. Kawabata, M. Kimura, K. Kodaira, Y. Komiyama, Y. Matsuda, M. Miyazaki, S. Miyazaki, F. Nakata, K. Ohta, Y. Ohyama, M. Sekiguchi, Y. Shioya, H. Tamura, Y. Taniguchi, M. Yagi, T. Yamada, & N. Yasuda.* 586, L111 (2003)

The Influence of Ω_b on High-Redshift Structure. *Jeffrey P. Gardner, Neal Katz, Lars Hernquist, & David H. Weinberg.* 587, 1 (2003)

Intermittent Features of the Quasar Lyα Transmitted Flux: Results from Cosmological Hydrodynamic Simulations. *Long-Long Feng, Jesus Pando, & Li-Zhi Fang.* 587, 487 (2003)

Mass of Clusters in Simulations. *Andrea V. Macciò, Giuseppe Murante, & Silvio P. Bonometto.* 588, 35 (2003)

Detection of Strong Clustering of Red *K*-selected Galaxies at $2 < z_{\rm phot} < 4$ in the Hubble Deep Field–South. *E. Daddi, H. J. A. Röttgering, I. Labbé, G. Rudnick, M. Franx, A. F. M. Moorwood, H. W. Rix, P. P. van der Werf, & P. G. van Dokkum.* 588, 50 (2003)

Quasars Clustering at $z \approx 3$ on Scales $\lesssim 10\ h^{-1}$ Mpc. *L. Infante, J. Varela, M. Moles, G. Hertling, A. García, & F. Menanteau.* 588, 90 (2003)

Measuring Feedback Using the Intergalactic Medium State and Evolution Inferred from the Soft X-Ray Background. *Pengjie Zhang & Ue-Li Pen.* 588, 704 (2003)

Evolution of the Cosmological Density Distribution Function from the Local Collapse Model. *Yasuhiro Ohta, Issha Kayo, & Atsushi Taruya.* 589, 1 (2003)

New Velocity Distribution for Cold Dark Matter in the Context of the Eddington Theory. *J. D. Vergados & D. Owen.* 589, 17 (2003)

Correlation between Galaxies and Quasi-stellar Objects in the Sloan Digital Sky Survey: A Signal from Gravitational Lensing Magnification? *Enrique Gaztañaga.* 589, 82 (2003)

Inferring the Linear Power Spectrum from the Lyα Forest. *Matias Zaldarriaga, Román Scoccimarro, & Lam Hui.* 590, 1 (2003)

Technique for Detecting Warm-Hot Intergalactic Gas in Quasar Ultraviolet Spectra. *Luc Binette, Mario Rodríguez-Martínez, Sinhue Haro-Corzo, & Isidro Ballinas.* 590, 58 (2003)

Cluster Formation Rate in Models with Dark Energy. *Spyros Basilakos.* 590, 636 (2003)

Spatial and Dynamical Biases in Velocity Statistics of Galaxies. *Kohji Yoshikawa, Y. P. Jing, & Gerhard Börner.* 590, 654 (2003)

On the Spatial Correlations of Lyman Break Galaxies. *Evan Scannapieco & Robert J. Thacker.* 590, L69 (2003)

Measuring σ_8 with Cluster Lensing: Biases from Unrelaxed Clusters. *Graham P. Smith, Alastair C. Edge, Vincent R. Eke, Robert C. Nichol, Ian Smail, & Jean-Paul Kneib.* 590, L79 (2003)

Karhunen-Loève Estimation of the Power Spectrum Parameters from the Angular Distribution of Galaxies in Early Sloan Digital Sky Survey Data. *Alexander S. Szalay, Bhuvnesh Jain, Takahiko Matsubara, Ryan Scranton, Michael S. Vogeley, Andrew Connelly, Scott Dodelson, Daniel Eisenstein, Joshua A. Frieman, James E. Gunn, Lam Hui, David Johnston, Stephen Kent, Martin Kerscher, Jon Loveday, Avery Meiksin, Vijay Narayanan, Robert C. Nichol, Liam O'Connell, Adrian Pope, Roman Scoccimarro, Ravi K. Sheth, Albert Stebbins, Michael A. Strauss, István Szapudi, Max Tegmark, Idit Zehavi, James Annis, Neta Bahcall, Jon Brinkmann, István Csabai, Masataka Fukugita, Greg Hennessy, Zeljko Ivezic, Gillian R. Knapp, Peter A. Kunszt, Don Q. Lamb, Brian C. Lee, Robert H. Lupton, Jeffrey A. Munn, John Peoples, Jeffrey R. Pier, Constance Rockosi, David*

Schlegel, Christopher Stoughton, Douglas L. Tucker, Brian Yanny, & Donald G. York. 591, 1 (2003)

Eccentricity Evolution in Simulated Galaxy Clusters. *Stephan N. Floor, Adrian L. Melott, Christopher J. Miller, & Greg L. Bryan.* 591, 741 (2003)

Early Quintessence in Light of the *Wilkinson Microwave Anisotropy Probe*. *Robert R. Caldwell, Michael Doran, Christian M. Müller, Gregor Schäfer, & Christof Wetterich.* 591, L75 (2003)

Phase Correlations in Non-Gaussian Fields. *Takahiko Matsubara.* 591, L79 (2003)

Arrival Distribution of Ultra–High-Energy Cosmic Rays: Prospects for the Future. *Hiroyuki Yoshiguchi, Shigehiro Nagataki, & Katsuhiko Sato.* 592, 311 (2003)

Detection of Dark Matter Skewness in the VIRMOS-DESCART Survey: Implications for Ω_0. *Ue-Li Pen, Tongjie Zhang, Ludovic van Waerbeke, Yannick Mellier, Pengjie Zhang, & John Dubinski.* 592, 664 (2003)

Peculiar Velocity Limits from Measurements of the Spectrum of the Sunyaev-Zeldovich Effect in Six Clusters of Galaxies. *B. A. Benson, S. E. Church, P. A. R. Ade, J. J. Bock, K. M. Ganga, J. R. Hinderks, P. D. Mauskopf, B. Philhour, M. C. Runyan, & K. L. Thompson.* 592, 674 (2003)

Simulating Weak Lensing by Large-Scale Structure. *Chris Vale & Martin White.* 592, 699 (2003)

Tracing the Large-Scale Structure in the *Chandra* Deep Field South. *R. Gilli, A. Cimatti, E. Daddi, G. Hasinger, P. Rosati, G. Szokoly, P. Tozzi, J. Bergeron, S. Borgani, R. Giacconi, L. Kewley, V. Mainieri, M. Mignoli, M. Nonino, C. Norman, J. Wang, G. Zamorani, W. Zheng, & A. Zirm.* 592, 721 (2003)

The Halo Occupation Distribution and the Physics of Galaxy Formation. *Andreas A. Berlind, David H. Weinberg, Andrew J. Benson, Carlton M. Baugh, Shaun Cole, Romeel Davé, Carlos S. Frenk, Adrian Jenkins, Neal Katz, & Cedric G. Lacey.* 593, 1 (2003)

Cosmological Shock Waves and Their Role in the Large-Scale Structure of the Universe. *Dongsu Ryu, Hyesung Kang, Eric Hallman, & T. W. Jones.* 593, 599 (2003)

Galaxy Bias in Quintessence Cosmological Models. *S. Basilakos & M. Plionis.* 593, L61 (2003)

Measuring the Deviation from the Linear and Deterministic Bias through Cosmic Gravitational Lensing Effects. *Zuhui Fan.* 594, 33 (2003)

X-Ray Absorption by the Low-Redshift Intergalactic Medium: A Numerical Study of the Λ Cold Dark Matter Model. *Xuelei Chen, David H. Weinberg, Neal Katz, & Romeel Davé.* 594, 42 (2003)

Galaxy Alignments as a Probe of the Dynamical State of Clusters. *M. Plionis, C. Benoist, S. Maurogordato, C. Ferrari, & S. Basilakos.* 594, 144 (2003)

Probing Dark Energy Using Baryonic Oscillations in the Galaxy Power Spectrum as a Cosmological Ruler. *Chris Blake & Karl Glazebrook.* 594, 665 (2003)

Primordial Black Holes as Dark Matter: The Power Spectrum and Evaporation of Early Structures. *N. Afshordi, P. McDonald, & D. N. Spergel.* 594, L71 (2003)

The Nature and Origin of the Nonvoid Lyα Cloud Population. *Curtis V. Manning.* 595, 19 (2003)

Angular Clustering with Photometric Redshifts in the Sloan Digital Sky Survey: Bimodality in the Clustering Properties of Galaxies. *Tamás Budavári, Andrew J. Connolly, Alexander S. Szalay, István Szapudi, István Csabai, Ryan Scranton, Neta A. Bahcall, Jon Brinkmann, Daniel J. Eisenstein, Joshua A. Frieman, Masataka Fukugita, James E. Gunn, David Johnston, Stephen Kent, Jon N. Loveday, Robert H. Lupton, Max Tegmark, Aniruddha R. Thakar, Brian Yanny, Donald G. York, & Idit Zehavi.* 595, 59 (2003)

First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Tests of Gaussianity. *E. Komatsu, A. Kogut, M. R. Nolta, C. L. Bennett, M. Halpern, G. Hinshaw, N. Jarosik, M. Limon, S. S. Meyer, L. Page, D. N. Spergel, G. S. Tucker, L. Verde, E. Wollack, & E. L. Wright.* 148, 119 (2003)

First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: The Angular Power Spectrum. *G. Hinshaw, D. N. Spergel, L. Verde, R. S. Hill, S. S. Meyer, C. Barnes, C. L. Bennett, M. Halpern, N. Jarosik, A. Kogut, E. Komatsu, M. Limon, L. Page, G. S. Tucker, J. L. Weiland, E. Wollack, & E. L. Wright.* 148, 135 (2003)

First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Interpretation of the TT and TE Angular Power Spectrum Peaks. *L. Page, M. R. Nolta, C. Barnes, C. L. Bennett, M. Halpern, G. Hinshaw, N. Jarosik, A. Kogut, M. Limon, S. S. Meyer, H. V. Peiris, D. N. Spergel, G. S. Tucker, E. Wollack, & E. L. Wright.* 148, 233 (2003)

Optimal Weighting Scheme in Redshift-Space Power Spectrum Analysis and a Prospect for Measuring the Cosmic Equation of State. *Kazuhiro Yamamoto.* 595, 577 (2003)

Constrained Simulations of the Real Universe: The Local Supercluster. *Anatoly Klypin, Yehuda Hoffman, Andrey V. Kravtsov, & Stefan Gottlöber.* 596, 19 (2003)

Future Evolution of Cosmic Structure in an Accelerating Universe. *Michael T. Busha, Fred C. Adams, Risa H. Wechsler, & August E. Evrard.* 596, 713 (2003)

A New Method for Calculating Arrival Distribution of Ultra–High-Energy Cosmic Rays above 10^{19} eV with Modifications by the Galactic Magnetic Field. *Hiroyuki Yoshiguchi, Shigehiro Nagataki, & Katsuhiko Sato.* 596, 1044 (2003)

Distances and Cosmology from Galaxy Cluster Cosmic Microwave Background Data. *Asantha Cooray.* 596, L127 (2003)

An Estimate of Ω_m without Conventional Priors. *H. Feldman, R. Juszkiewicz, P. Ferreira, M. Davis, E. Gaztañaga, J. Fry, A. Jaffe, S. Chambers, L. da Costa, M. Bernardi, R. Giovanelli, M. Haynes, & G. Wegner.* 596, L131 (2003)

A Merged Catalog of Clusters of Galaxies from Early Sloan Digital Sky Survey Data. *Neta A. Bahcall, Timothy A. McKay, James Annis, Rita S. J. Kim, Feng Dong, Sarah Hansen, Tomo Goto, James E. Gunn, Chris Miller, R. C. Nichol, Marc Postman, Don Schneider, Josh Schroeder, Wolfgang Voges, Jon Brinkmann, & Masataka Fukugita.* 148, 243 (2003)

The Probability Distribution Function of Light in the Universe: Results from Hydrodynamic Simulations. *Jeremiah P. Ostriker, Kentaro Nagamine, Renyue Cen, & Masataka Fukugita.* 597, 1 (2003)

Lyman Break Galaxies and Reionization of the Universe. *A. Gayler Harford & Nickolay Y. Gnedin.* 597, 74 (2003)

Observational Estimates of the Initial Power Spectrum at Small Scale from Lyα Absorbers. *M. Demianski & A. Doroshkevich.* 597, 81 (2003)

Red Galaxy Clustering in the NOAO Deep Wide-Field Survey. *Michael J. I. Brown, Arjun Dey, Buell T. Jannuzi, Tod R. Lauer, Glenn P. Tiede, & Valerie J. Mikles.* 597, 225 (2003)

Decaying Cold Dark Matter and the Evolution of the Cluster Abundance. *Masamune Oguri, Keitaro Takahashi, Hiroshi Ohno, & Kei Kotake.* 597, 645 (2003)

The Clustering of Intergalactic Metals. *Christophe Pichon, Evan Scannapieco, Bastien Aracil, Patrick Petitjean, Dominique Aubert, Jacqueline Bergeron, & Stéphane Colombi.* 597, L97 (2003)

Hydrogen Clouds before Reionization: A Lognormal Model Approach. *Hongguang Bi, Li-Zhi Fang, Longlong Feng, & Yipeng Jing.* 598, 1 (2003)

Early Structure Formation and Reionization in a Cosmological Model with a Running Primordial Power Spectrum. *Naoki Yoshida, Aaron Sokasian, Lars Hernquist, & Volker Springel.* 598, 73 (2003)

Identifying Lenses with Small-Scale Structure. I. Cusp Lenses. *Charles R. Keeton, B. Scott Gaudi, & A. O. Petters.* 598, 138 (2003)

The Clustering Dipole of the Local Universe from the Two Micron All Sky Survey. *Ariyeh H. Maller, Daniel H. McIntosh, Neal Katz, & Martin D. Weinberg.* 598, L1 (2003)

The Effects of Relativistic Corrections on Cosmological Parameter Estimations from Sunyaev-Zel'dovich Effect Cluster Surveys. *Zuhui Fan & Yanling Wu.* 598, 713 (2003)

Probing Dark Energy with Baryonic Acoustic Oscillations from Future Large Galaxy Redshift Surveys. *Hee-Jong Seo & Daniel J. Eisenstein.* 598, 720 (2003)

Metallicity Evolution of Damped Lyα Systems in ΛCDM Cosmology. *Renyue Cen, Jeremiah P. Ostriker, Jason X. Prochaska, & Arthur M. Wolfe.* 598, 741 (2003)

COBE DMR–normalized Dark Energy Cosmogony. *Pia Mukherjee, A. J. Banday, Alain Riazuelo, Krzysztof M. Górski, & Bharat Ratra.* 598, 767 (2003)

Optimal Weak-Lensing Skewness Measurements. *Tong-Jie Zhang, Ue-Li Pen, Pengji Zhang, & John Dubinski.* 598, 818 (2003)

Improvements in the *M-T* Relation, Mass Function, and Measured Value of Ω_m through Cluster Evolution. *A. Del Popolo.* 599, 723 (2003)

The Richness-dependent Cluster Correlation Function: Early Sloan Digital Sky Survey Data. *Neta A. Bahcall, Feng Dong, Lei Hao, Paul Bode, Jim Annis, James E. Gunn, & Donald P. Schneider.* 599, 814 (2003)

Optimal Moments for the Analysis of Peculiar Velocity Surveys. II. Testing. *Hume A. Feldman, Richard Watkins, Adrian L. Melott, & Scott W. Chambers.* 599, 820 (2003)

Cosmological Magnetic Field Generation by the Weibel Instability. *R. Schlickeiser & P. K. Shukla.* 599, L57 (2003)

COSMOLOGY: MISCELLANEOUS

The Sources of Gamma-Ray Bursts and Their Connections with QSOs and Active Galaxies. *G. R. Burbidge.* 585, 112 (2003)

Neutron-fed Afterglows of Gamma-Ray Bursts. *Andrei M. Beloborodov.* 585, L19 (2003)

The Sloan Digital Sky Survey: The Cosmic Spectrum and Star Formation History. *Karl Glazebrook, Ivan K. Baldry, Michael R. Blanton, Jon Brinkmann, Andrew Connolly, István Csabai, Masataka Fukugita, Željko Ivezić, Jon Loveday, Avery Meiksin, Robert Nichol, Eric Peng, Don Schneider, Mark SubbaRao, Christy Tremonti, & Donald G. York.* 587, 55 (2003)

Disk-Bulge-Halo Models for the Andromeda Galaxy. *Lawrence M. Widrow, Kathryn M. Perrett, & Sherry H. Suyu.* 588, 311 (2003)

The Initial Helium Content of Galactic Globular Cluster Stars from the *R*-Parameter: Comparison with the Cosmic Microwave Background Constraint. *Santi Cassisi, Maurizio Salaris, & Alan W. Irwin.* 588, 862 (2003)

Chemical Composition of the Early Universe. *Martin Harwit & Marco Spaans.* 589, 53 (2003)

The Redshift and the Host Galaxy of GRB 980613: A Gammay-Ray Burst from a Merger-induced Starburst? *S. G. Djorgovski, J. S. Bloom, & S. R. Kulkarni.* 591, L13 (2003)

Gamma-Ray Bursts as X-Ray Depth Gauges of the Universe. *P. Mészáros & M. J. Rees.* 591, L91 (2003)

Asymmetric Deviation of the Scattering Cross Section around Lyα Atomic Hydrogen. *Hee-Won Lee.* 594, 637 (2003)

Gamma-Ray Burst Energetics and the Gamma-Ray Burst Hubble Diagram: Promises and Limitations. *J. S. Bloom, D. A. Frail, & S. R. Kulkarni.* 594, 674 (2003)

Mass and Redshift Dependence of Dark Halo Structure. *D. H. Zhao, Y. P. Jing, H. J. Mo, & G. Börner.* 597, L9 (2003)

Effects of a Decaying Cosmological Term on the Formation of Molecules and First Objects. *M. Hashimoto, T. Kamikawa, & K. Arai.* 598, 13 (2003)

COSMOLOGY: OBSERVATIONS

The Canada–United Kingdom Deep Submillimeter Survey. V. The Submillimeter Properties of Lyman Break Galaxies. *T. M. Webb, S. Eales, S. Foucaud, S. J. Lilly, H. McCracken, K. Adelberger, C. Steidel, A. Shapley, D. L. Clements, L. Dunne, O. Le Fèvre, M. Brodwin, & W. Gear.* 582, 6 (2003)

Subaru Deep Survey. II. Luminosity Functions and Clustering Properties of Lyα Emitters at $z = 4.86$ in the Subaru Deep Field. *Masami Ouchi, Kazuhiro Shimasaku, Hisanori Furusawa, Masayuki Miyazaki, Mamoru Doi, Masaru Hamabe, Tomoki Hayashino, Masahiko Kimura, Keiichi Kodaira, Yutaka Komiyama, Yuichi Matsuda, Satoshi Miyazaki, Fumiaki Nakata, Sadanori Okamura, Maki Sekiguchi, Yasuhiro Shioya, Hajime Tamura, Yoshiaki Taniguchi, Masafumi Yagi, & Naoki Yasuda.* 582, 60 (2003)

Tracing the Warm-Hot Intergalactic Medium at Low Redshift: X-Ray Forest Observations toward H1821+643. *Smita Mathur, David H. Weinberg, & Xuelei Chen.* 582, 82 (2003)

Cosmological Implications of the BIMA 30 GHz Sunyaev-Zeldovich Effect Galaxy Cluster Survey. *Yen-Ting Lin & Joseph J. Mohr.* 582, 574 (2003)

Cosmological Constraints from Compact Radio Sources Angular Size versus Redshift Data. *Gang Chen & Bharat Ratra.* 582, 586 (2003)

Metal Abundances and Kinematics of Quasar Absorbers. II. Absorption Systems toward Q0347−3819 and APM BR J0307−4945. *S. A. Levshakov, I. I. Agafonova, S. D'Odorico, A. M. Wolfe, & M. Dessauges-Zavadsky.* 582, 596 (2003)

The Topology of a Weak Lensing Field in the Neighborhood of MS 1054−03. *Jun'ichi Sato, Keiichi Umetsu, Toshifumi Futamase, & Toru Yamada.* 582, L67 (2003)

The *Microwave Anisotropy Probe* Mission. *C. L. Bennett, M. Bay, M. Halpern, G. Hinshaw, C. Jackson, N. Jarosik, A. Kogut, M. Limon, S. S. Meyer, L. Page, D. N. Spergel, G. S. Tucker, D. T. Wilkinson, E. Wollack, & E. L. Wright.* 583, 1 (2003)

An Instrument for Investigating the Large Angular Scale Polarization of the Cosmic Microwave Background. *Brian G. Keating, Christopher W. O'Dell, Joshua O. Gundersen, Lucio Piccirillo, Nate C. Stebor, & Peter T. Timbie.* 144, 1 (2003)

Analysis of the Diffuse Near-Infrared Emission from Two-Micron All-Sky Survey Deep Integration Data: Foregrounds versus the Cosmic Infrared Background. *S. Odenwald, A. Kashlinsky, J. C. Mather, M. F. Skrutskie, & R. M. Cutri.* 583, 535 (2003)

A SCUBA Galaxy in the Protocluster around 53W002 at $z = 2.4$. *Ian Smail, R. J. Ivison, D. G. Gilbank, J. S. Dunlop, W. C. Keel, K. Motohara, & J. A. Stevens.* 583, 551 (2003)

Sunyaev-Zeldovich Effect Imaging of MACS Galaxy Clusters at $z > 0.5$. *Samuel J. LaRoque, Marshall Joy, John E. Carlstrom, Harald Ebeling, Massimiliano Bonamente, Kyle S. Dawson, Alastair Edge, William L. Holzapfel, Amber D. Miller, Daisuke Nagai, Sandeep K. Patel, & Erik D. Reese.* 583, 559 (2003)

Gamma-Ray Burst Hubble Diagram to $z = 4.5$. *Bradley E. Schaefer.* 583, L67 (2003)

The Hawaii+Anglo-Australian Observatory *K*-Band Galaxy Redshift Survey. I. The Local *K*-Band Luminosity Function. *J.-S. Huang, K. Glazebrook, L. L. Cowie, & C. Tinney.* 584, 203 (2003)

A Limit on the Cosmological Mass Density and Power Spectrum from the Rotation Curves of Low Surface Brightness Galaxies. *Stacy S. McGaugh, Michael K. Barker, & W. J. G. de Blok.* 584, 566 (2003)

Radio Galaxy Redshift–Angular Size Data Constraints on Dark Energy. *Silviu Podariu, Ruth A. Daly, Matthew P. Mory, & Bharat Ratra.* 584, 577 (2003)

Dipole Anisotropies of *IRAS* Galaxies and the Contribution of a Large-Scale Local Void. *Kenji Tomita.* 584, 580 (2003)

Cosmic Microwave Background Anisotropy Measurement from Python V. *K. Coble, S. Dodelson, M. Dragovan, K. Ganga, L. Knox, J. Kovac, B. Ratra, & T. Souradeep.* 584, 585 (2003)

Constraints on the Cluster Environments and Hot Spot Magnetic Field Strengths of the Radio Sources 3C 280 and 3C 254. *Megan Donahue, Ruth A. Daly, & Donald J. Horner.* 584, 643 (2003)

On the Incidence of Strong Gravitational Lensing by Clusters in the Las Campanas Distant Cluster Survey. *Dennis Zaritsky & Anthony H. Gonzalez.* 584, 691 (2003)

The Redshift Evolution of the 2–8 keV X-Ray Luminosity Function. *L. L. Cowie, A. J. Barger, M. Bautz, W. N. Brandt, & G. P. Garmire.* 584, L57 (2003)

Very High Redshift X-Ray–selected Active Galactic Nuclei in the *Chandra* Deep Field–North. *A. J. Barger, L. L. Cowie, P. Capak, D. M. Alexander, F. E. Bauer, W. N. Brandt, G. P. Garmire, & A. E. Hornschemeier.* 584, L61 (2003)

The Properties of Microjansky Radio Sources in the Hubble Deep Field–North, SSA 13, and SSA 22 Fields. *S. C. Chapman, A. J. Barger, L. L. Cowie, D. Scott, C. Borys, P. Capak, E. B. Fomalont, G. F. Lewis, E. A. Richards, A. T. Steffen, G. Wilson, & M. Yun.* 585, 57 (2003)

The Infrared Counterparts of the Optically Unidentified Chandra Deep Field–South 1 Ms Sources. *Haojing Yan, Rogier A. Windhorst, Huub J. A. Röttgering, Seth H. Cohen, Stephen C. Odewahn, Scott C. Chapman, & William C. Keel.* 585, 67 (2003)

The Cluster Mass Function from Early Sloan Digital Sky Survey Data: Cosmological Implications. *Neta A. Bahcall, Feng Dong, Paul Bode, Rita Kim, James Annis, Timothy A. McKay, Sarah Hansen, Josh Schroeder, James Gunn, Jeremiah P. Ostriker, Marc Postman, Robert C. Nichol, Chris Miller, Tomotsugu Goto, Jon Brinkmann, Gillian R. Knapp, Don Q. Lamb, Donald P. Schneider, Michael S. Vogeley, & Donald G. York.* 585, 182 (2003)

Galaxy Clustering Evolution in the UH8K Weak-Lensing Fields. *Gillian Wilson.* 585, 191 (2003)

The Mass Profile of Galaxy Clusters out to $\sim 2r_{200}$. *Andrea Biviano & Marisa Girardi.* 585, 205 (2003)

The Optical Design and Characterization of the *Microwave Anisotropy Probe*. *L. Page, C. Jackson, C. Barnes, C. Bennett, M. Halpern, G. Hinshaw, N. Jarosik, A. Kogut, M. Limon, S. S. Meyer, D. N. Spergel, G. S. Tucker, D. T. Wilkinson, E. Wollack, & E. L. Wright.* 585, 566 (2003)

Corrective Lenses for High-Redshift Supernovae. *Neal Dalal, Daniel E. Holz, Xuelei Chen, & Joshua A. Frieman.* 585, L11 (2003)

Predictions for Cosmological Infrared Surveys from Space with the Multiband Imaging Photometer for *SIRTF*. *H. Dole, G. Lagache, & J.-L. Puget.* 585, 617 (2003)

Heavy-Element Abundances and Dust Depletions in the Host Galaxies of Three Gamma-Ray Bursts. *Sandra Savaglio, S. Michael Fall, & Fabrizio Fiore.* 585, 638 (2003)

Average Spectra of Massive Galaxies in the Sloan Digital Sky Survey. *Daniel J. Eisenstein, David W. Hogg, Masataka Fukugita, Osamu Nakamura, Mariangela Bernardi, Douglas P. Finkbeiner, David J. Schlegel, J. Brinkmann, Andrew J. Connolly, István Csabai, James E. Gunn, Željko Ivezić, Don Q. Lamb, Jon Loveday, Jeffrey A. Munn, Robert C. Nichol, Donald P. Schneider, Michael A. Strauss, Alex Szalay, & Don G. York.* 585, 694 (2003)

Continued Radio Monitoring of the Gamma-Ray Burst 991208. *T. J. Galama, D. A. Frail, R. Sari, E. Berger, G. B. Taylor, & S. R. Kulkarni.* 585, 899 (2003)

Gravitational Potential Reconstruction from Peculiar Velocity and Weak Lensing Measurements. *Olivier Doré, Lloyd Knox, & Alan Peel.* 585, L81 (2003)

Imaging Large-Scale Structure in the X-Ray Sky. *Yuxuan Yang, R. F. Mushotzky, A. J. Barger, L. L. Cowie, D. B. Sanders, & A. T. Steffen.* 585, L85 (2003)

Searching for $z \simeq 6$ Objects with the *Hubble Space Telescope* Advanced Camera for Surveys: Preliminary Analysis of a Deep Parallel Field. *Haojing Yan, Rogier A. Windhorst, & Seth H. Cohen.* 585, L93 (2003)

The Las Campanas Infrared Survey. IV. The Photometric Redshift Survey and the Rest-Frame *R*-Band Galaxy Luminosity Function at $0.5 \leq z \leq 1.5$. *Hsiao-Wen Chen, Ronald O. Marzke, Patrick J. McCarthy, P. Martini, R. G. Carlberg, S. E. Persson, A. Bunker, C. R. Bridge, & R. G. Abraham.* 586, 745 (2003)

Subaru Deep Survey. IV. Discovery of a Large-Scale Structure at Redshift $\simeq$5. *K. Shimasaku, M. Ouchi, S. Okamura, N. Kashikawa, M. Doi, H. Furusawa, M. Hamabe, T. Hayashino, K. Kawabata, M. Kimura, K. Kodaira, Y. Komiyama, Y. Matsuda, M. Miyazaki, S. Miyazaki, F. Nakata, K. Ohta, Y. Ohyama, M. Sekiguchi, Y. Shioya, H. Tamura, Y. Taniguchi, M. Yagi, T. Yamada, & N. Yasuda.* 586, L111 (2003)

The Canada-UK Deep Submillimeter Survey. VI. The 3 Hour Field. *T. M. Webb, S. A. Eales, S. J. Lilly, D. L. Clements, L. Dunne, W. K. Gear, R. J. Ivison, H. Flores, & M. Yun.* 587, 41 (2003)

The Sloan Digital Sky Survey: The Cosmic Spectrum and Star Formation History. *Karl Glazebrook, Ivan K. Baldry, Michael R. Blanton, Jon Brinkmann, Andrew Connolly, István Csabai, Masataka Fukugita, Željko Ivezić, Jon Loveday, Avery Meiksin, Robert Nichol, Eric Peng, Don Schneider, Mark SubbaRao, Christy Tremonti, & Donald G. York.* 587, 55 (2003)

The Kinematic State of the Local Volume. *Alan B. Whiting.* 587, 186 (2003)

Chandra X-Ray Analysis of the Massive High-Redshift Galaxy Clusters Cl J1113.1−2615 and Cl J0152.7−1357. *B. J. Maughan, L. R. Jones, H. Ebeling, E. Perlman, P. Rosati, C. Frye, & C. R. Mullis.* 587, 589 (2003)

Strong Gravitational Lensing and Galactic Bulges. *Da-Ming Chen.* 587, L55 (2003)

Iron Emission in $z \approx 6$ QSOs. *Wolfram Freudling, Michael R. Corbin, & Kirk T. Korista.* 587, L67 (2003)

The Rate and the Origin of Type Ia Supernovae in Radio Galaxies. *Massimo Della Valle & Nino Panagia.* 587, L71 (2003)

Spectroscopic Confirmation of a Substantial Population of Luminous Red Galaxies at Redshifts $z \gtrsim 2$. *Pieter G. van Dokkum, Natascha M. Förster Schreiber, Marijn Franx, Emanuele Daddi, Garth D. Illingworth, Ivo Labbé, Alan Moorwood, Hans-Walter Rix, Huub Röttgering, Gregory Rudnick, Arjen van der Wel, Paul van der Werf, & Lottie van Starkenburg.* 587, L83 (2003)

Detection of Strong Clustering of Red *K*-selected Galaxies at $2 < z_{\rm phot} < 4$ in the Hubble Deep Field–South. *E. Daddi, H. J. A. Röttgering, I. Labbé, G. Rudnick, M. Franx, A. F. M. Moorwood, H. W. Rix, P. P. van der Werf, & P. G. van Dokkum.* 588, 50 (2003)

Rest-Frame Ultraviolet Spectra of $z \sim 3$ Lyman Break Galaxies. *Alice E. Shapley, Charles C. Steidel, Max Pettini, & Kurt L. Adelberger.* 588, 65 (2003)

A Submillimeter and Radio Survey of Gamma-Ray Burst Host Galaxies: A Glimpse into the Future of Star Formation Studies. *E. Berger, L. L. Cowie, S. R. Kulkarni, D. A. Frail, H. Aussel, & A. J. Barger.* 588, 99 (2003)

Probing Dark Energy with the Cosmic Microwave Background: Projected Constraints from the *Wilkinson Microwave Anisotropy Probe* and *Planck*. *Amedeo Balbi, C. Baccigalupi, F. Perrotta, S. Matarrese, & N. Vittorio.* 588, L5 (2003)

Cosmological Acceleration through Transition to Constant Scalar Curvature. *Leonard Parker, William Komp, & Daniel A. T. Vanzella.* 588, 663 (2003)

The Resolved Fraction of the Cosmic X-Ray Background. *A. Moretti, S. Campana, D. Lazzati, & G. Tagliaferri.* 588, 696 (2003)

Correlation between Galaxies and Quasi-stellar Objects in the Sloan Digital Sky Survey: A Signal from Gravitational Lensing Magnification? *Enrique Gaztañaga.* 589, 82 (2003)

Chandra Discovery of the Intracluster Medium around UM 425 at a Redshift of 1.47. *Smita Mathur & Rik J. Williams.* 589, L1 (2003)

Discovery of Two Distant Type Ia Supernovae in the Hubble Deep Field–North with the Advanced Camera for Surveys. *John P. Blakeslee, Zlatan I. Tsvetanov, Adam G. Riess, Holland C. Ford, Garth D. Illingworth, Daniel Magee, John L. Tonry, Narciso Benítez, Mark Clampin, George F. Hartig, Gerhardt R. Meurer, Marco Sirianni, David R. Ardila, Frank Bartko, Rychard Bouwens, Tom Broadhurst, Nicholas Cross, P. D. Feldman, Marijn Franx, David A. Golimowski, Caryl Gronwall, Randy Kimble, John Krist, André R. Martel, Felipe Menanteau, George Miley, Marc Postman, Piero Rosati, William Sparks, L.-G. Strolger, Hien D. Tran, Richard L. White, & Wei Zheng.* 589, 693 (2003)

Emission-Line Galaxies in the STIS Parallel Survey. II. Star Formation Density. *Harry I. Teplitz, Nicholas R. Collins, Jonathan P. Gardner, Robert S. Hill, & Jason Rhodes.* 589, 704 (2003)

The Far-Infrared Background Correlation with Cosmic Microwave Background Lensing. *Yong-Seon Song, Asantha Cooray, Lloyd Knox, & Matias Zaldarriaga.* 590, 664 (2003)

Non-Gaussianity of the Derived Maps from the First-Year *Wilkinson Microwave Anisotropy Probe* Data. *Lung-Yih Chiang, Pavel D. Naselsky, Oleg V. Verkhodanov, & Michael J. Way.* 590, L65 (2003)

Measuring σ_8 with Cluster Lensing: Biases from Unrelaxed Clusters. *Graham P. Smith, Alastair C. Edge, Vincent R. Eke, Robert C. Nichol, Ian Smail, & Jean-Paul Kneib.* 590, L79 (2003)

Emission-Line Galaxies in the Space Telescope Imaging Spectrograph Parallel Survey. I. Observations and Data Analysis. *Harry I. Teplitz, Nicholas R. Collins, Jonathan P. Gardner, Robert S. Hill, Sara R. Heap, Don J. Lindler, Jason Rhodes, & Bruce E. Woodgate.* 146, 209 (2003)

Decline of the Space Density of Quasars between $z = 2$ and $z = 4$. *M. Vigotti, R. Carballo, C. R. Benn, G. De Zotti, R. Fanti, J. I. Gonzalez Serrano, K.-H. Mack, & J. Holt.* 591, 43 (2003)

The Redshift and the Host Galaxy of GRB 980613: A Gammay-Ray Burst from a Merger-induced Starburst? *S. G. Djorgovski, J. S. Bloom, & S. R. Kulkarni.* 591, L13 (2003)

The Anisotropy of the Microwave Background to $l = 3500$: Deep Field Observatons with the Cosmic Background Imager. *B. S. Mason, T. J. Pearson, A. C. S. Readhead, M. C. Shepherd, J. Sievers, P. S. Udomprasert, J. K. Cartwright, A. J. Farmer, S. Padin, S. T. Myers, J. R. Bond, C. R. Contaldi, U. Pen, S. Prunet, D. Pogosyan, J. E. Carlstrom, J. Kovac, E. M. Leitch, C. Pryke, N. W. Halverson, W. L. Holzapfel, P. Altamirano, L. Bronfman, S. Casassus, J. May, & M. Joy.* 591, 540 (2003)

The Anisotropy of the Microwave Background to $l = 3500$: Mosaic Observations with the Cosmic Background Imager. *T. J. Pearson, B. S. Mason, A. C. S. Readhead, M. C. Shepherd, J. L. Sievers, P. S. Udomprasert, J. K. Cartwright, A. J. Farmer, S. Padin, S. T. Myers, J. R. Bond, C. R. Contaldi, U.-L. Pen, S. Prunet, D. Pogosyan, J. E. Carlstrom, J. Kovac, E. M. Leitch, C. Pryke, N. W. Halverson, W. L. Holzapfel, P. Altamirano, L. Bronfman, S. Casassus, J. May, & M. Joy.* 591, 556 (2003)

Cosmological Parameters from Cosmic Background Imager Observations and Comparisons with BOOMERANG, DASI, and MAXIMA. *J. L. Sievers, J. R. Bond, J. K. Cartwright, C. R. Contaldi, B. S. Mason, S. T. Myers, S. Padin, T. J. Pearson, U.-L. Pen, D. Pogosyan, S. Prunet, A. C. S. Readhead, M. C. Shepherd, P. S. Udomprasert, L. Bronfman, W. L. Holzapfel, & J. May.* 591, 599 (2003)

High-Redshift Candidates and the Nature of Small Galaxies in the Hubble Deep Field. *Lisa J. Storrie-Lombardi, Ray J. Weymann, & Rodger I. Thompson.* 591, 623 (2003)

The Low-Frequency Radio Counterpart of the *XMM* Large-Scale Structure Survey. *A. S. Cohen, H. J. A. Roettgering, N. E. Kassim, W. D. Cotton, R. A. Perley, R. Wilman, P. Best, M. Pierre, M. Birkinshaw, M. Bremer, & A. Zanichelli.* 591, 640 (2003)

Weak Gravitational Lensing by a Sample of X-Ray–luminous Clusters of Galaxies. III. Serendipitous Weak Lensing Detections of Dark and

Luminous Mass Concentrations. *Haakon Dahle, Kristian Pedersen, Per B. Lilje, Steve J. Maddox, & Nick Kaiser.* 591, 662 (2003)

Near-Infrared Properties of Galaxy Clusters: Luminosity as a Binding Mass Predictor and the State of Cluster Baryons. *Yen-Ting Lin, Joseph J. Mohr, & S. A. Stanford.* 591, 749 (2003)

Barred Galaxies at $z > 0.7$: NICMOS Hubble Deep Field–North Observations. *Kartik Sheth, Michael W. Regan, Nicholas Z. Scoville, & Linda E. Strubbe.* 592, L13 (2003)

Detection of Dark Matter Skewness in the VIRMOS-DESCART Survey: Implications for Ω_0. *Ue-Li Pen, Tongjie Zhang, Ludovic van Waerbeke, Yannick Mellier, Pengjie Zhang, & John Dubinski.* 592, 664 (2003)

Peculiar Velocity Limits from Measurements of the Spectrum of the Sunyaev-Zeldovich Effect in Six Clusters of Galaxies. *B. A. Benson, S. E. Church, P. A. R. Ade, J. J. Bock, K. M. Ganga, J. R. Hinderks, P. D. Mauskopf, B. Philhour, M. C. Runyan, & K. L. Thompson.* 592, 674 (2003)

Galactic Foreground Constraints from the Python V Cosmic Microwave Background Anisotropy Data. *Pia Mukherjee, Kim Coble, Mark Dragovan, Ken Ganga, John Kovac, Bharat Ratra, & Tarun Souradeep.* 592, 692 (2003)

On the Assembly History of Early-Type Galaxies in the Hubble Deep Field–North. *Pieter van Dokkum & Richard S. Ellis.* 592, L53 (2003)

Luminous Lyman Break Galaxies at $z > 5$ and the Source of Reionization. *Matthew D. Lehnert & Malcolm Bremer.* 593, 630 (2003)

Iron Abundance in the Intracluster Medium at High Redshift. *P. Tozzi, P. Rosati, S. Ettori, S. Borgani, V. Mainieri, & C. Norman.* 593, 705 (2003)

Cosmological Results from High-z Supernovae. *John L. Tonry, Brian P. Schmidt, Brian Barris, Pablo Candia, Peter Challis, Alejandro Clocchiatti, Alison L. Coil, Alexei V. Filippenko, Peter Garnavich, Craig Hogan, Stephen T. Holland, Saurabh Jha, Robert P. Kirshner, Kevin Krisciunas, Bruno Leibundgut, Weidong Li, Thomas Matheson, Mark M. Phillips, Adam G. Riess, Robert Schommer, R. Chris Smith, Jesper Sollerman, Jason Spyromilio, Christopher W. Stubbs, & Nicholas B. Suntzeff.* 594, 1 (2003)

Beyond the Hubble Deep Field Limiting Magnitude: Faint Galaxy Number Counts from Surface Brightness Fluctuations. *A. Marín-Franch & A. Aparicio.* 594, 63 (2003)

Gamma-Ray Burst Energetics and the Gamma-Ray Burst Hubble Diagram: Promises and Limitations. *J. S. Bloom, D. A. Frail, & S. R. Kulkarni.* 594, 674 (2003)

The Redshift Distribution of Flat-Spectrum Radio Sources. *J. A. Muñoz, E. E. Falco, C. S. Kochanek, J. Lehár, & E. Mediavilla.* 594, 684 (2003)

The C IV Mass Density of the Universe at Redshift 5. *Max Pettini, Piero Madau, Michael Bolte, Jason X. Prochaska, Sara L. Ellison, & Xiaohui Fan.* 594, 695 (2003)

The Spectrum of the Cosmic Microwave Background Anisotropy from the Combined *COBE* FIRAS and *WMAP* Observations. *D. J. Fixsen.* 594, L67 (2003)

Primordial Black Holes as Dark Matter: The Power Spectrum and Evaporation of Early Structures. *N. Afshordi, P. McDonald, & D. N. Spergel.* 594, L71 (2003)

Have the Elusive Progenitors of Type Ia Supernovae Been Discovered? *Mario Livio & Adam G. Riess.* 594, L93 (2003)

Angular Clustering with Photometric Redshifts in the Sloan Digital Sky Survey: Bimodality in the Clustering Properties of Galaxies. *Tamás Budavári, Andrew J. Connolly, Alexander S. Szalay, István Szapudi, István Csabai, Ryan Scranton, Neta A. Bahcall, Jon Brinkmann, Daniel J. Eisenstein, Joshua A. Frieman, Masataka Fukugita, James E. Gunn, David Johnston, Stephen Kent, Jon N. Loveday, Robert H. Lupton, Max Tegmark, Aniruddha R. Thakar, Brian Yanny, Donald G. York, & Idit Zehavi.* 595, 59 (2003)

K_s Number Counts in the Groth and Coppi Fields. *David Cristóbal-Hornillos, Marc Balcells, Mercedes Prieto, Rafael Guzmán, Jesús Gallego, Nicolás Cardiel, Ángel Serrano, & Roser Pelló.* 595, 71 (2003)

Multiband Optical Follow-up Observations of GRB 020813 at the Kiso and Bisei Observatories. *Y. Urata, S. Nishiura, T. Miyata, H. Mito, T. Kawabata, Y. Nakada, T. Aoki, T. Soyano, K. Tarusawa, A. Yoshida, T. Tamagawa, & K. Makishima.* 595, L21 (2003)

Millimeter Observations of GRB 030329: Continued Evidence for a Two-Component Jet. *Kartik Sheth, Dale A. Frail, Stephen White, Mousumi Das, Frank Bertoldi, Fabian Walter, Shri R. Kulkarni, & Edo Berger.* 595, L33 (2003)

First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Preliminary Maps and Basic Results. *C. L. Bennett, M. Halpern, G. Hinshaw, N. Jarosik, A. Kogut, M. Limon, S. S. Meyer, L. Page, D. N. Spergel, G. S. Tucker, E. Wollack, E. L. Wright, C. Barnes, M. R. Greason, R. S. Hill, E. Komatsu, M. R. Nolta, N. Odegard, H. V. Peiris, L. Verde, & J. L. Weiland.* 148, 1 (2003)

First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: On-Orbit Radiometer Characterization. *N. Jarosik, C. Barnes, C. L. Bennett, M. Halpern, G. Hinshaw, A. Kogut, M. Limon, S. S. Meyer, L. Page, D. N. Spergel, G. S. Tucker, J. L. Weiland, E. Wollack, & E. L. Wright.* 148, 29 (2003)

First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Beam Profiles and Window Functions. *L. Page, C. Barnes, G. Hinshaw, D. N. Spergel, J. L. Weiland, E. Wollack, C. L. Bennett, M. Halpern, N. Jarosik, A. Kogut, M. Limon, S. S. Meyer, G. S. Tucker, & E. L. Wright.* 148, 39 (2003)

First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Galactic Signal Contamination from Sidelobe Pickup. *C. Barnes, R. S. Hill, G. Hinshaw, L. Page, C. L. Bennett, M. Halpern, N. Jarosik, A. Kogut, M. Limon, S. S. Meyer, G. S. Tucker, E. Wollack, & E. L. Wright.* 148, 51 (2003)

First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Data Processing Methods and Systematic Errors Limits. *G. Hinshaw, C. Barnes, C. L. Bennett, M. R. Greason, M. Halpern, R. S. Hill, N. Jarosik, A. Kogut, M. Limon, S. S. Meyer, N. Odegard, L. Page, D. N. Spergel, G. S. Tucker, J. L. Weiland, E. Wollack, & E. L. Wright.* 148, 63 (2003)

First-Year *Wilkinson Microwave Anisotrophy Probe* (*WMAP*) Observations: Foreground Emission. *C. L. Bennett, R. S. Hill, G. Hinshaw, M. R. Nolta, N. Odegard, L. Page, D. N. Spergel, J. L. Weiland, E. L. Wright, M. Halpern, N. Jarosik, A. Kogut, M. Limon, S. S. Meyer, G. S. Tucker, & E. Wollack.* 148, 97 (2003)

First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Tests of Gaussianity. *E. Komatsu, A. Kogut, M. R. Nolta, C. L. Bennett, M. Halpern, G. Hinshaw, N. Jarosik, M. Limon, S. S. Meyer, L. Page, D. N. Spergel, G. S. Tucker, L. Verde, E. Wollack, & E. L. Wright.* 148, 119 (2003)

First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: The Angular Power Spectrum. *G. Hinshaw, D. N. Spergel, L. Verde, R. S. Hill, S. S. Meyer, C. Barnes, C. L. Bennett, M. Halpern, N. Jarosik, A. Kogut, E. Komatsu, M. Limon, L. Page, G. S. Tucker, J. L. Weiland, E. Wollack, & E. L. Wright.* 148, 135 (2003)

First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Temperature-Polarization Correlation. *A. Kogut, D. N. Spergel, C. Barnes, C. L. Bennett, M. Halpern, G. Hinshaw, N. Jarosik, M. Limon, S. S. Meyer, L. Page, G. S. Tucker, E. Wollack, & E. L. Wright.* 148, 161 (2003)

First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Determination of Cosmological Parameters. *D. N. Spergel, L. Verde, H. V. Peiris, E. Komatsu, M. R. Nolta, C. L. Bennett, M. Halpern, G. Hinshaw, N. Jarosik, A. Kogut, M. Limon, S. S. Meyer, L. Page, G. S. Tucker, J. L. Weiland, E. Wollack, & E. L. Wright.* 148, 175 (2003)

First-Year *Wilkinson Microwave Anisotrophy Probe* (*WMAP*) Observations: Parameter Estimation Methodology. *L. Verde, H. V. Peiris, D. N. Spergel, M. R. Nolta, C. L. Bennett, M. Halpern, G. Hinshaw, N. Jarosik, A. Kogut, M. Limon, S. S. Meyer, L. Page, G. S. Tucker, E. Wollack, & E. L. Wright.* 148, 195 (2003)

First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Implications for Inflation. *H. V. Peiris, E. Komatsu, L. Verde, D. N. Spergel, C. L. Bennett, M. Halpern, G. Hinshaw, N. Jarosik, A. Kogut, M. Limon, S. S. Meyer, L. Page, G. S. Tucker, E. Wollack, & E. L. Wright.* 148, 213 (2003)

First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Interpretation of the TT and TE Angular Power Spectrum Peaks. *L. Page, M. R. Nolta, C. Barnes, C. L. Bennett, M. Halpern, G. Hinshaw, N. Jarosik, A. Kogut, M. Limon, S. S. Meyer, H. V. Peiris, D. N. Spergel, G. S. Tucker, E. Wollack, & E. L. Wright.* 148, 233 (2003)

The Munich Near-Infrared Cluster Survey. II. The *K*-Band Luminosity Function of Field Galaxies to $z \sim 1.2$. *N. Drory, R. Bender, G. Feulner, U. Hopp, C. Maraston, J. Snigula, & G. J. Hill.* 595, 698 (2003)

GRB 021004: A Possible Shell Nebula around a Wolf-Rayet Star Gamma-Ray Burst Progenitor. *N. Mirabal, J. P. Halpern, Ryan Chornock, Alexei V. Filippenko, D. M. Terndrup, E. Armstrong, J. Kemp, J. R. Thorstensen, M. Tavarez, & C. Espaillat.* 595, 935 (2003)

Discovery of a Clustered Quasar Pair at $z \approx 5$: Biased Peaks in Early Structure Formation. *S. G. Djorgovski, D. Stern, A. A. Mahabal, & R. Brunner.* 596, 67 (2003)

The Changing Active Galactic Nucleus Population. *A. T. Steffen, A. J. Barger, L. L. Cowie, R. F. Mushotzky, & Y. Yang.* 596, L23 (2003)

Normal Parameters for an Analytic Description of the Cosmic Microwave Background Cosmological Parameter Likelihood. *Mike Chu, Manoj Kaplinghat, & Lloyd Knox.* 596, 725 (2003)

Massive Star Formation in a Gravitationally Lensed H II Galaxy at $z = 3.357$. *R. A. E. Fosbury, M. Villar-Martín, A. Humphrey, M. Lombardi, P. Rosati, D. Stern, R. N. Hook, B. P. Holden, S. A. Stanford, G. K. Squires, M. Rauch, & W. L. W. Sargent.* 596, 797 (2003)

An Estimate of Ω_m without Conventional Priors. *H. Feldman, R. Juszkiewicz, P. Ferreira, M. Davis, E. Gaztañaga, J. Fry, A. Jaffe, S. Chambers, L. da Costa, M. Bernardi, R. Giovanelli, M. Haynes, & G. Wegner.* 596, L131 (2003)

Advanced Camera for Surveys Photometry of the Cluster RDCS 1252.9−2927: The Color-Magnitude Relation at $z = 1.24$. *John P. Blakeslee, Marijn Franx, Marc Postman, Piero Rosati, Brad P. Holden, G. D. Illingworth, H. C. Ford, N. J. G. Cross, Caryl Gronwall, N. Benítez, R. J. Bouwens, T. J. Broadhurst, M. Clampin, R. Demarco, D. A. Golimowski, G. F. Hartig, L. Infante, A. R. Martel, G. K. Miley, F. Menanteau, G. R. Meurer, M. Sirianni, & R. L. White.* 596, L143 (2003)

A Merged Catalog of Clusters of Galaxies from Early Sloan Digital Sky Survey Data. *Neta A. Bahcall, Timothy A. McKay, James Annis, Rita S. J. Kim, Feng Dong, Sarah Hansen, Tomo Goto, James E. Gunn, Chris Miller, R. C. Nichol, Marc Postman, Don Schneider, Josh Schroeder, Wolfgang Voges, Jon Brinkmann, & Masataka Fukugita.* 148, 243 (2003)

A Model-Independent Determination of the Expansion and Acceleration Rates of the Universe as a Function of Redshift and Constraints on Dark Energy. *Ruth A. Daly & S. G. Djorgovski.* 597, 9 (2003)

Observational Estimates of the Initial Power Spectrum at Small Scale from Lyα Absorbers. *M. Demianski & A. Doroshkevich.* 597, 81 (2003)

Cosmic Shear Statistics in the Suprime-Cam 2.1 Square Degree Field: Constraints on Ω_m and Σ_8. *Takashi Hamana, Satoshi Miyazaki, Kazuhiro Shimasaku, Hisanori Furusawa, Mamoru Doi, Masaru Hamabe, Katsumi Imi, Masahiko Kimura, Yutaka Komiyama, Fumiaki Nakata, Norio Okada, Sadanori Okamura, Masami Ouchi, Maki Sekiguchi, Masafumi Yagi, & Naoki Yasuda.* 597, 98 (2003)

Red Galaxy Clustering in the NOAO Deep Wide-Field Survey. *Michael J. I. Brown, Arjun Dey, Buell T. Jannuzi, Tod R. Lauer, Glenn P. Tiede, & Valerie J. Mikles.* 597, 225 (2003)

Measuring the Statistical Isotropy of the Cosmic Microwave Background Anisotropy. *Amir Hajian & Tarun Souradeep.* 597, L5 (2003)

The Canada-UK Deep Submillimeter Survey. VII. Optical and Near-Infrared Identifications for the 14 Hour Field. *T. M. A. Webb, S. J. Lilly, D. L. Clements, S. Eales, M. Yun, M. Brodwin, L. Dunne, & W. K. Gear.* 597, 680 (2003)

Very High Column Density and Small Reddening toward GRB 020124 at $z = 3.20$. *J. Hjorth, P. Moller, J. Gorosabel, J. P. U. Fynbo, S. Toft, A. O. Jaunsen, A. A. Kaas, T. Pursimo, K. Torii, T. Kato, H. Yamaoka, A. Yoshida, B. Thomsen, M. I. Anderson, I. Burud, J. M. Castro Ceron, A. J. Castro-Tirado, A. S. Fruchter, L. Kaper, C. Kouveliotou, N. Masetti, E. Palazzi, H. Pedersen, E. Pian, J. Rhoads, E. Rol, N. R. Tanvir, P. M. Vreeswijk, R. A. M. J. Wijers, & E. P. J. van den Heuvel.* 597, 699 (2003)

Detection of the Integrated Sachs-Wolfe and Sunyaev-Zel'dovich Effects from the Cosmic Microwave Background–Galaxy Correlation. *Pablo Fosalba, Enrique Gaztañaga, & Francisco J. Castander.* 597, L89 (2003)

The Clustering of Intergalactic Metals. *Christophe Pichon, Evan Scannapieco, Bastien Aracil, Patrick Petitjean, Dominique Aubert, Jacqueline Bergeron, & Stéphane Colombi.* 597, L97 (2003)

Interferometric Observations of Powerful CO Emission from Three Submillimeter Galaxies at $z = 2.39$, 2.51, and 3.35. *R. Neri, R. Genzel, R. J. Ivison, F. Bertoldi, A. W. Blain, S. C. Chapman, P. Cox, T. R. Greve, A. Omont, & D. T. Frayer.* 597, L113 (2003)

The MAT/TOCO Measurement of the Angular Power Spectrum of the Cosmic Microwave Background at 30 and 40 GHz. *M. R. Nolta, M. J. Devlin, W. B. Dorwart, A. D. Miller, L. A. Page, J. Puchalla, E. Torbet, & H. T. Tran.* 598, 97 (2003)

New Constraints on Ω_M, Ω_Λ, and w from an Independent Set of 11 High-Redshift Supernovae Observed with the *Hubble Space Telescope*. *R. A. Knop, G. Aldering, R. Amanullah, P. Astier, G. Blanc, M. S. Burns, A. Conley, S. E. Deustua, M. Doi, R. Ellis, S. Fabbro, G. Folatelli, A. S. Fruchter, G. Garavini, S. Garmond, K. Garton, R. Gibbons, G. Goldhaber, A. Goobar, D. E. Groom, D. Hardin, I. Hook, D. A. Howell, A. G. Kim, B. C. Lee, C. Lidman, J. Mendez, S. Nobili, P. E. Nugent, R. Pain, N. Panagia, C. R. Pennypacker, S. Perlmutter, R. Quimby, J. Raux, N. Regnault, P. Ruiz-Lapuente, G. Sainton, B. Schaefer, K. Schahmaneche, E. Smith, A. L. Wood-Vasey, & N. Yasuda.* 598, 102 (2003)

The Mass, Baryonic Fraction, and X-Ray Temperature of the Luminous, High-Redshift Cluster of Galaxies MS 0451.6−0305. *Megan Donahue, Jessica A. Gaskin, Sandeep K. Patel, Marshall Joy, Doug Clowe, & John P. Hughes.* 598, 190 (2003)

The Cosmological Baryon Density from the Deuterium-to-Hydrogen Ratio in QSO Absorption Systems: D/H toward Q1243+3047. *David Kirkman, David Tytler, Nao Suzuki, John M. O'Meara, & Dan Lubin.* 149, 1 (2003)

COBE DMR–normalized Dark Energy Cosmogony. *Pia Mukherjee, A. J. Banday, Alain Riazuelo, Krzysztof M. Górski, & Bharat Ratra.* 598, 767 (2003)

A Wide-Field *Hubble Space Telescope* Study of the Cluster Cl 0024+1654 at $z = 0.4$. II. The Cluster Mass Distribution. *Jean-Paul Kneib, Patrick Hudelot, Richard S. Ellis, Tommaso Treu, Graham Smith, Phil Marshall, Oliver Czoske, Ian Smail, & Priyamvada Natarajan.* 598, 804 (2003)

Optimal Weak-Lensing Skewness Measurements. *Tong-Jie Zhang, Ue-Li Pen, Pengji Zhang, & John Dubinski.* 598, 818 (2003)

Cosmic Gravitational Shear from the *Hubble Space Telescope* Medium Deep Survey. *Stefano Casertano, Kavan U. Ratnatunga, & Richard E. Griffiths.* 598, L71 (2003)

Triple Experiment Spectrum of the Sunyaev-Zel'dovich Effect in the Coma Cluster: H_0. *E. S. Battistelli, M. De Petris, L. Lamagna, G. Luzzi, R. Maoli, A. Melchiorri, F. Melchiorri, A. Orlando, E. Palladino, G. Savini, Y. Rephaeli, M. Shimon, M. Signore, & S. Colafrancesco.* 598, L75 (2003)

Hubble Space Telescope Images of Submillimeter Sources: Large Irregular Galaxies at High Redshift. *S. C. Chapman, R. Windhorst, S. Odewahn, H. Yan, & C. Conselice.* 599, 92 (2003)

The Deuterium-to-Oxygen Ratio in the Interstellar Medium. *Guillaume Hébrard & H. Warren Moos.* 599, 296 (2003)

Estimates of Cosmological Parameters Using the Cosmic Microwave Background Angular Power Spectrum of ACBAR. *J. H. Goldstein, P. A. R. Ade, J. J. Bock, J. R. Bond, C. Cantalupo, C. R. Contaldi, M. D. Daub, W. L. Holzapfel, C. Kuo, A. E. Lange, M. Lueker, M. Newcomb, J. B. Peterson, D. Pogosyan, J. E. Ruhl, M. C. Runyan, & E. Torbet.* 599, 773 (2003)

Improved Measurement of the Angular Power Spectrum of Temperature Anisotropy in the Cosmic Microwave Background from Two New Analyses of BOOMERANG Observations. *J. E. Ruhl, P. A. R. Ade, J. J. Bock, J. R. Bond, J. Borrill, A. Boscaleri, C. R. Contaldi, B. P. Crill, P. de Bernardis, G. De Troia, K. Ganga, M. Giacometti, E. Hivon, V. V. Hristov, A. Iacoangeli, A. H. Jaffe, W. C. Jones, A. E. Lange, S. Masi, P. Mason, P. D. Mauskopf, A. Melchiorri, T. Montroy, C. B. Netterfield, E. Pascale, F. Piacentini, D. Pogosyan, G. Polenta, S. Prunet, & G. Romeo.* 599, 786 (2003)

Stochastic Gravitational Wave Background: Upper Limits in the 10^{-6} to 10^{-3} Hz Band. *J. W. Armstrong, L. Iess, P. Tortora, & B. Bertotti.* 599, 806 (2003)

The Richness-dependent Cluster Correlation Function: Early Sloan Digital Sky Survey Data. *Neta A. Bahcall, Feng Dong, Lei Hao, Paul Bode, Jim Annis, James E. Gunn, & Donald P. Schneider.* 599, 814 (2003)

Optimal Moments for the Analysis of Peculiar Velocity Surveys. II. Testing. *Hume A. Feldman, Richard Watkins, Adrian L. Melott, & Scott W. Chambers.* 599, 820 (2003)

Phase Cross-Correlation of the *Wilkinson Microwave Anisotropy Probe* Internal Linear Combination Map and Foregrounds. *Pavel D. Naselsky, Andrey G. Doroshkevich, & Oleg V. Verkhodanov.* 599, L53 (2003)

COSMOLOGY: THEORY

The Assembly and Merging of Supermassive Black Holes in Hierarchical Models of Galaxy Formation. *Marta Volonteri, Francesco Haardt, & Piero Madau.* 582, 559 (2003)

The Effect of Bandpass Uncertainities on Component Separation. *Sarah Church, Lloyd Knox, & Martin White.* 582, L63 (2003)

Probing the Reionization History of the Universe using the Cosmic Microwave Background Polarization. *Manoj Kaplinghat, Mike Chu, Zoltan Haiman, Gilbert P. Holder, Lloyd Knox, & Constantinos Skordis.* 583, 24 (2003)

The Multiband Magnification Bias for Gravitational Lenses. *J. Stuart B. Wyithe, Joshua N. Winn, & David Rusin.* 583, 58 (2003)

Cosmological Perturbation Theory Using the Schrödinger Equation. *István Szapudi & Nick Kaiser.* 583, L1 (2003)

Linear Gas Dynamics in the Expanding Universe. *Nickolay Y. Gnedin, Emily J. Baker, Thomas J. Bethell, Meredith M. Drosback, A. Gayler Harford, Amalia K. Hicks, Adam G. Jensen, Brian A. Keeney, Christopher M. Kelso, Mark C. Neyrinck, Scott E. Pollack, & Timothy P. van Vliet.* 583, 525 (2003)

The Effect of Radiative Cooling on the Sunyaev-Zeldovich Cluster Counts and Angular Power Spectra: Analytic Treatment. *Yu-Ying Zhang & Xiang-Ping Wu.* 583, 529 (2003)

How Sensitive Are Weak Lensing Statistics to Dark Energy Content? *Dipak Munshi & Yun Wang.* 583, 566 (2003)

Gravitational Lensing Magnification and Time Delay Statistics for Distant Supernovae. *Masamune Oguri, Yasushi Suto, & Edwin L. Turner.* 583, 584 (2003)

The Three-Point Correlation Function for Spin-2 Fields. *Masahiro Takada & Bhuvnesh Jain.* 583, L49 (2003)

Statistics of Smoothed Cosmic Fields in Perturbation Theory. I. Formation and Useful Formulae in Second-Order Perturbation Theory. *Takahiko Matsubara.* 584, 1 (2003)

Can Radiative Cooling and Nongravitational Heating Explain Simultaneously the Global X-Ray Properties of Clusters and the Unresolved Cosmic X-Ray Background? *Yan-Jie Xue & Xiang-Ping Wu.* 584, 34 (2003)

The Structural Evolution of Substructure. *Eric Hayashi, Julio F. Navarro, James E. Taylor, Joachim Stadel, & Thomas Quinn.* 584, 541 (2003)

Higher Order Moments of the Cosmic Shear and Other Spin-2 Fields. *Matias Zaldarriaga & Román Scoccimarro.* 584, 559 (2003)

Cosmological Effects of the First Stars: Evolving Spectra of Population III. *Jason Tumlinson, J. Michael Shull, & Aparna Venkatesan.* 584, 608 (2003)

Evolving Spectra of Population III Stars: Consequences for Cosmological Reionization. *Aparna Venkatesan, Jason Tumlinson, & J. Michael Shull.* 584, 621 (2003)

Analytic Cross Sections for Substructure Lensing. *Charles R. Keeton.* 584, 664 (2003)

Sample Variance Considerations for Cluster Surveys. *Wayne Hu & Andrey V. Kravtsov.* 584, 702 (2003)

Inhomogeneities in the Microwave Background Radiation Interpreted within the Framework of the Quasi–Steady State Cosmology. *J. V. Narlikar, R. G. Vishwakarma, Amir Hajian, Tarun Souradeep, G. Burbridge, & F. Hoyle.* 585, 1 (2003)

One-Point Statistics of the Cosmic Density Field in Real and Redshift Spaces with a Multiresolutional Decomposition. *Hu Zhan & Li-Zhi Fang.* 585, 12 (2003)

Toward a Measurement of the Cosmological Geometry at $z \sim 2$: Predicting Lyα Forest Correlation in Three Dimensions and the Potential of Future Data Sets. *Patrick McDonald.* 585, 34 (2003)

Constraints on Cardassian Expansion from Distant Type Ia Supernovae. *Zhong-Hong Zhu & Masa-Katsu Fujimoto.* 585, 52 (2003)

Modeling Intracluster Gas in Triaxial Dark Halos: An Analytic Approach. *Jounghun Lee & Yasushi Suto.* 585, 151 (2003)

Clusters of Galaxies in the Local Universe. *C. S. Kochanek, Martin White, J. Huchra, L. Macri, T. H. Jarrett, S. E. Schneider, & J. Mader.* 585, 161 (2003)

The Cluster Mass Function from Early Sloan Digital Sky Survey Data: Cosmological Implications. *Neta A. Bahcall, Feng Dong, Paul Bode, Rita Kim, James Annis, Timothy A. McKay, Sarah Hansen, Josh Schroeder, James Gunn, Jeremiah P. Ostriker, Marc Postman, Robert C. Nichol, Chris Miller, Tomotsugu Goto, Jon Brinkmann, Gillian R. Knapp, Don Q. Lamb, Donald P. Schneider, Michael S. Vogeley, & Donald G. York.* 585, 182 (2003)

Bias and the Power Spectrum beyond the Turnover. *Ruth Durrer, Andrea Gabrielli, Michael Joyce, & Francesco Sylos Labini.* 585, L1 (2003)

Corrective Lenses for High-Redshift Supernovae. *Neal Dalal, Daniel E. Holz, Xuelei Chen, & Joshua A. Frieman.* 585, L11 (2003)

Importance of Cluster Structural Evolution in Using X-Ray and Sunyaev-Zeldovich Effect Galaxy Cluster Surveys to Study Dark Energy. *Subhabrata Majumdar & Joseph J. Mohr.* 585, 603 (2003)

On the Baryometric Status of ^{3}He. *Elisabeth Vangioni-Flam, Keith A. Olive, Brian D. Fields, & Michel Cassé.* 585, 611 (2003)

Predictions for the Counts of Faint, High-Redshift Galaxies in the Mid-Infrared. *Zoltán Haiman, David N. Spergel, & Edwin L. Turner.* 585, 630 (2003)

Gravitational Potential Reconstruction from Peculiar Velocity and Weak Lensing Measurements. *Olivier Doré, Lloyd Knox, & Alan Peel.* 585, L81 (2003)

Three Epochs of Star Formation in the High-Redshift Universe. *Jonathan Mackey, Volker Bromm, & Lars Hernquist.* 586, 1 (2003)

The Failure of Self-Interacting Dark Matter to Solve the Overabundance of Dark Satellites and the Soft Core Question. *Elena D'Onghia & Andreas Burkert.* 586, 12 (2003)

Reionization of Hydrogen and Helium by Early Stars and Quasars. *J. Stuart B. Wyithe & Abraham Loeb.* 586, 693 (2003)

Ionization History of the Cosmic Plasma in the Light of the Recent Cosmic Background Imager and Future *Planck* Data. *A. G. Doroshkevich, I. P. Naselsky, P. D. Naselsky, & I. D. Novikov.* 586, 709 (2003)

Surveys of Galaxy Clusters with the Sunyaev-Zel'dovich Effect. *A. E. Schulz & Martin White.* 586, 723 (2003)

The Influence of Ω_b on High-Redshit Structure. *Jeffrey P. Gardner, Neal Katz, Lars Hernquist, & David H. Weinberg.* 587, 1 (2003)

Numerical Simulations of High-Redshift Star Formation in Dwarf Galaxies. *Konstantinos Tassis, Tom Abel, Greg L. Bryan, & Michael L. Norman.* 587, 13 (2003)

On the Total Energy of Open Friedmann-Robertson-Walker Universes. *V. Faraoni & F. I. Cooperstock.* 587, 483 (2003)

Intermittent Features of the Quasar Lyα Transmitted Flux: Results from Cosmological Hydrodynamic Simulations. *Long-Long Feng, Jesus Pando, & Li-Zhi Fang.* 587, 487 (2003)

Cold Fronts in Cold Dark Matter Clusters. *Daisuke Nagai & Andrey V. Kravtsov.* 587, 514 (2003)

Effect of Internal Flows on Sunyaev-Zeldovich Measurements of Cluster Peculiar Velocities. *Daisuke Nagai, Andrey V. Kravtsov, & Arthur Kosowsky.* 587, 524 (2003)

Strong Gravitational Lensing and Galactic Bulges. *Da-Ming Chen.* 587, L55 (2003)

Observational Constraints on Cardassian Expansion. *S. Sen & A. A. Sen.* 588, 1 (2003)

Cluster Morphology as a Test of Different Cosmological Models. *Tamon Suwa, Asao Habe, Kohji Yoshikawa, & Takashi Okamoto.* 588, 7 (2003)

Metal Absorption Lines as Probes of the Intergalactic Medium Prior to the Reionization Epoch. *Steven R. Furlanetto & Abraham Loeb.* 588, 18 (2003)

Mass of Clusters in Simulations. *Andrea V. Macciò, Giuseppe Murante, & Silvio P. Bonometto.* 588, 35 (2003)

Probing Dark Energy with the Cosmic Microwave Background: Projected Constraints from the *Wilkinson Microwave Anisotropy Probe* and *Planck*. *Amedeo Balbi, C. Baccigalupi, F. Perrotta, S. Matarrese, & N. Vittorio.* 588, L5 (2003)

Cosmological Acceleration through Transition to Constant Scalar Curvature. *Leonard Parker, William Komp, & Daniel A. T. Vanzella.* 588, 663 (2003)

Structure of Dark Matter Halos from Hierarchical Clustering. II. Dependence of Cosmological Models in Cluster-sized Halos. *Toshiyuki Fukushige & Junichiro Makino.* 588, 674 (2003)

Dark Halo Cusp: Asymptotic Convergence. *Avishai Dekel, Itai Arad, Jonathan Devor, & Yuval Birnboim.* 588, 680 (2003)

Was the Universe Reionized by Massive Metal-free Stars? *J. Stuart B. Wyithe & Abraham Loeb.* 588, L69 (2003)

Evolution of the Cosmological Density Distribution Function from the Local Collapse Model. *Yasuhiro Ohta, Issha Kayo, & Atsushi Taruya.* 589, 1 (2003)

New Velocity Distribution for Cold Dark Matter in the Context of the Eddington Theory. *J. D. Vergados & D. Owen.* 589, 17 (2003)

Cosmological Origin of the Stellar Velocity Dispersions in Massive Early-Type Galaxies. *Abraham Loeb & P. J. E. Peebles.* 589, 29 (2003)

The Detectability of the First Stars and Their Cluster Enrichment Signatures. *Evan Scannapieco, Raffaella Schneider, & Andrea Ferrara.* 589, 35 (2003)

Observational Strategies of Cosmic Microwave Background Temperature and Polarization Interferometry Experiments. *Chan-Gyung Park, Kin-Wang Ng, Changbom Park, Guo-Chin Liu, & Keiichi Umetsu.* 589, 67 (2003)

Formation of the First Stars by Accretion. *Kazuyuki Omukai & Francesco Palla.* 589, 677 (2003)

Universal Behavior of Phase Correlations in Nonlinear Gravitational Clustering. *Peter Watts, Peter Coles, & Adrian Melott.* 589, L61 (2003)

Inferring the Linear Power Spectrum from the Lyα Forest. *Matias Zaldarriaga, Román Scoccimarro, & Lam Hui.* 590, 1 (2003)

Autocorrelation Function of the Soft X-Ray Background Produced by Warm-Hot Gas in Dark Halos. *Xiang-Ping Wu & Yan-Jie Xue.* 590, 8 (2003)

Mass-Temperature Relation of Galaxy Clusters: Implication from the Observed Luminosity-Temperature Relation and X-Ray Temperature Function. *Mamoru Shimizu, Tetsu Kitayama, Shin Sasaki, & Tasushi Sato.* 590, 197 (2003)

On the Origin of the Global Schmidt Law of Star Formation. *Andrey V. Kravtsov.* 590, L1 (2003)

Cluster Formation Rate in Models with Dark Energy. *Spyros Basilakos.* 590, 636 (2003)

The Far-Infrared Background Correlation with Cosmic Microwave Background Lensing. *Yong-Seon Song, Asantha Cooray, Lloyd Knox, & Matias Zaldarriaga.* 590, 664 (2003)

Low-Frequency Gravitational Waves from Massive Black Hole Binaries: Predictions for *LISA* and Pulsar Timing Arrays. *J. Stuart B. Wyithe & Abraham Loeb.* 590, 691 (2003)

Karhunen-Loève Estimation of the Power Spectrum Parameters from the Angular Distribution of Galaxies in Early Sloan Digital Sky Survey Data. *Alexander S. Szalay, Bhuvnesh Jain, Takahiko Matsubara, Ryan Scranton, Michael S. Vogeley, Andrew Connelly, Scott Dodelson, Daniel Eisenstein, Joshua A. Frieman, James E. Gunn, Lam Hui, David Johnston, Stephen Kent, Martin Kerscher, Jon Loveday, Avery Meiksin, Vijay Narayanan, Robert C. Nichol, Liam O'Connell, Adrian Pope, Roman Scoccimarro, Ravi K. Sheth, Albert Stebbins, Michael A. Strauss, István Szapudi, Max Tegmark, Idit Zehavi, James Annis, Neta Bahcall, Jon Brinkmann, István Csabai, Masataka Fukugita, Greg Hennessy, Zeljko Ivezic, Gillian R. Knapp, Peter A. Kunszt, Don Q. Lamb, Brian C. Lee, Robert H. Lupton, Jeffrey A. Munn, John Peoples, Jeffrey R. Pier, Constance Rockosi, David Schlegel, Christopher Stoughton, Douglas L. Tucker, Brian Yanny, & Donald G. York.* 591, 1 (2003)

The Universe Was Reionized Twice. *Renyue Cen.* 591, 12 (2003)

Feedback from the First Supernovae in Protogalaxies: The Fate of the Generated Metals. *Keiichi Wada & Aparna Venkatesan.* 591, 38 (2003)

Early Structure Formation and Reionization in a Warm Dark Matter Cosmology. *Naoki Yoshida, Aaron Sokasian, Lars Hernquist, & Volker Springel.* 591, L1 (2003)

Simulations of Galaxy Formation in a Λ Cold Dark Matter Universe. I. Dynamical and Photometric Properties of a Simulated Disk Galaxy. *Mario G. Abadi, Julio F. Navarro, Matthias Steinmetz, & Vincent R. Eke.* 591, 499 (2003)

Cluster Sunyaev-Zeldovich Effect Scaling Relations. *Ian G. McCarthy, Arif Babul, Gilbert P. Holder, & Michael L. Balogh.* 591, 515 (2003)

The Sunyaev-Zeldovich Effect Signature of Excess Entropy in Distant, Massive Clusters. *Ian G. McCarthy, Gilbert P. Holder, Arif Babul, & Michael L. Balogh.* 591, 526 (2003)

Phase Correlations in Non-Gaussian Fields. *Takahiko Matsubara.* 591, L79 (2003)

Relativistic Cosmology Number Counts and the Luminosity Function. *Marcelo B. Ribeiro & William R. Stoeger.* 592, 1 (2003)

Lensing Optical Depths for Substructure and Isolated Dark Matter Halos. *Jacqueline Chen, Andrey V. Kravtsov, & Charles R. Keeton.* 592, 24 (2003)

Simulations of Early Structure Formation: Primordial Gas Clouds. *Naoki Yoshida, Tom Abel, Lars Hernquist, & Naoshi Sugiyama.* 592, 645 (2003)

Detection of Dark Matter Skewness in the VIRMOS-DESCART Survey: Implications for Ω_0. *Ue-Li Pen, Tongjie Zhang, Ludovic van Waerbeke, Yannick Mellier, Pengjie Zhang, & John Dubinski.* 592, 664 (2003)

Simulating Weak Lensing by Large-Scale Structure. *Chris Vale & Martin White.* 592, 699 (2003)

The Halo Occupation Distribution and the Physics of Galaxy Formation. *Andreas A. Berlind, David H. Weinberg, Andrew J. Benson, Carlton M. Baugh, Shaun Cole, Romeel Davé, Carlos S. Frenk, Adrian Jenkins, Neal Katz, & Cedric G. Lacey.* 593, 1 (2003)

On the Origin of the Inner Structure of Halos. *Alberto Manrique, Andreu Raig, Eduard Salvador-Solé, Teresa Sanchis, & José María Solanes.* 593, 26 (2003)

Wavelet Band Powers of the Primordial Power Spectrum from Cosmic Microwave Background Data. *Pia Mukherjee & Yun Wang.* 593, 38 (2003)

On the Origin of Intracluster Entropy. *G. Mark Voit, Michael L. Balogh, Richard G. Bower, Cedric G. Lacey, & Greg L. Bryan.* 593, 272 (2003)

Star Formation at the Twilight of the Dark Ages: Which Stars Reionized the Universe? *Rachel S. Somerville & Mario Livio.* 593, 611 (2003)

The Epoch of Reionization in Models with Reduced Small-Scale Power. *Rachel S. Somerville, James S. Bullock, & Mario Livio.* 593, 616 (2003)

Constraints on the Equation of State of Dark Energy and the Hubble Constant from Stellar Ages and the Cosmic Microwave Background. *Raul Jimenez, Licia Verde, Tommaso Treu, & Daniel Stern.* 593, 622 (2003)

The Formation of Galaxy Stellar Cores by the Hierarchical Merging of Supermassive Black Holes. *Marta Volonteri, Piero Madau, & Francesco Haardt.* 593, 661 (2003)

Galaxy Bias in Quintessence Cosmological Models. *S. Basilakos & M. Plionis.* 593, L61 (2003)

Future Type Ia Supernova Data as Tests of Dark Energy from Modified Friedmann Equations. *Yun Wang, Katherine Freese, Paolo Gondolo, & Matthew Lewis.* 594, 25 (2003)

Measuring the Deviation from the Linear and Deterministic Bias through Cosmic Gravitational Lensing Effects. *Zuhui Fan.* 594, 33 (2003)

X-Ray Absorption by the Low-Redshift Intergalactic Medium: A Numerical Study of the Λ Cold Dark Matter Model. *Xuelei Chen, David H. Weinberg, Neal Katz, & Romeel Davé.* 594, 42 (2003)

Jets in Gamma-Ray Bursts: Tests and Predictions for the Structured Jet Model. *Rosalba Perna, Re'em Sari, & Dale Frail.* 594, 379 (2003)

The Ionizing Efficiency of the First Stars. *Aparna Venkatesan & James W. Truran.* 594, L1 (2003)

Primordial Black Holes as Dark Matter: The Power Spectrum and Evaporation of Early Structures. *N. Afshordi, P. McDonald, & D. N. Spergel.* 594, L71 (2003)

Signatures of Galaxy Formation in the Intracluster Medium. *G. Mark Voit & Trevor J. Ponman.* 594, L75 (2003)

The Reionization History at High Redshifts. I. Physical Models and New Constraints from Cosmic Microwave Background Polarization. *Zoltán Haiman & Gilbert P. Holder.* 595, 1 (2003)

The Reionization History at High Redshifts. II. Estimating the Optical Depth to Thomson Scattering from Cosmic Microwave Background Polarization. *Gilbert P. Holder, Zoltán Haiman, Manoj Kaplinghat, & Lloyd Knox.* 595, 13 (2003)

Optimal Weighting Scheme in Redshift-Space Power Spectrum Analysis and a Prospect for Measuring the Cosmic Equation of State. *Kazuhiro Yamamoto.* 595, 577 (2003)

Probing beyond the Epoch of Hydrogen Reionization with 21 Centimeter Radiation. *Benedetta Ciardi & Piero Madau.* 596, 1 (2003)

The Thermal Memory of Reionization History. *Lam Hui & Zoltán Haiman.* 596, 9 (2003)

Constrained Simulations of the Real Universe: The Local Supercluster. *Anatoly Klypin, Yehuda Hoffman, Andrey V. Kravtsov, & Stefan Gottlöber.* 596, 19 (2003)

Formation of the First Supermassive Black Holes. *Volker Bromm & Abraham Loeb.* 596, 34 (2003)

Galaxy Formation: Cold Dark Matter, Feedback, and the Hubble Sequence. *Jesper Sommer-Larsen, Martin Götz, & Laura Portinari.* 596, 47 (2003)

Future Evolution of Cosmic Structure in an Accelerating Universe. *Michael T. Busha, Fred C. Adams, Risa H. Wechsler, & August E. Evrard.* 596, 713 (2003)

Normal Parameters for an Analytic Description of the Cosmic Microwave Background Cosmological Parameter Likelihood. *Mike Chu, Manoj Kaplinghat, & Lloyd Knox.* 596, 725 (2003)

Distances and Cosmology from Galaxy Cluster Cosmic Microwave Background Data. *Asantha Cooray.* 596, L127 (2003)

An Estimate of Ω_m without Conventional Priors. *H. Feldman, R. Juszkiewicz, P. Ferreira, M. Davis, E. Gaztañaga, J. Fry, A. Jaffe, S. Chambers, L. da Costa, M. Bernardi, R. Giovanelli, M. Haynes, & G. Wegner.* 596, L131 (2003)

The First Supernova Explosions in the Universe. *Volker Bromm, Naoki Yoshida, & Lars Hernquist.* 596, L135 (2003)

A Merged Catalog of Clusters of Galaxies from Early Sloan Digital Sky Survey Data. *Neta A. Bahcall, Timothy A. McKay, James Annis, Rita S. J. Kim, Feng Dong, Sarah Hansen, Tomo Goto, James E. Gunn, Chris Miller, R. C. Nichol, Marc Postman, Don Schneider, Josh Schroeder, Wolfgang Voges, Jon Brinkmann, & Masataka Fukugita.* 148, 243 (2003)

The Probability Distribution Function of Light in the Universe: Results from Hydrodynamic Simulations. *Jeremiah P. Ostriker, Kentaro Nagamine, Renyue Cen, & Masataka Fukugita.* 597, 1 (2003)

A Model-Independent Determination of the Expansion and Acceleration Rates of the Universe as a Function of Redshift and Constraints on Dark Energy. *Ruth A. Daly & S. G. Djorgovski.* 597, 9 (2003)

Angular Momentum Distribution of Hot Gas and Implications for Disk Galaxy Formation. *D. N. Chen, Y. P. Jing, & Kohji Yoshikawa.* 597, 35 (2003)

On Nonprimordial Deuterium Production by Accelerated Particles. *Tijana Prodanović & Brian D. Fields.* 597, 48 (2003)

High-Resolution Simulations of Non-Gaussian Cosmic Microwave Background Maps in Spherical Coordinates. *M. Liguori, S. Matarrese, & L. Moscardini.* 597, 57 (2003)

On the Evolution of the Ionizing Emissivity of Galaxies and Quasars Required by the Hydrogen Reionization. *Jordi Miralda-Escudé.* 597, 66 (2003)

Lyman Break Galaxies and Reionization of the Universe. *A. Gayler Harford & Nickolay Y. Gnedin.* 597, 74 (2003)

Galaxies inside Strömgren Spheres of Luminous Quasars at $z > 6$: Detection of the First Galaxies. *Renyue Cen.* 597, L13 (2003)

Decaying Cold Dark Matter and the Evolution of the Cluster Abundance. *Masamune Oguri, Keitaro Takahashi, Hiroshi Ohno, & Kei Kotake.* 597, 645 (2003)

Studying Clusters with *Planck*. *Martin White.* 597, 650 (2003)

Hydrogen Clouds before Reionization: A Lognormal Model Approach. *Hongguang Bi, Li-Zhi Fang, Longlong Feng, & Yipeng Jing.* 598, 1 (2003)

Effects of a Decaying Cosmological Term on the Formation of Molecules and First Objects. *M. Hashimoto, T. Kamikawa, & K. Arai.* 598, 13 (2003)

Halo Substructure and the Power Spectrum. *Andrew R. Zentner & James S. Bullock.* 598, 49 (2003)

Early Structure Formation and Reionization in a Cosmological Model with a Running Primordial Power Spectrum. *Naoki Yoshida, Aaron Sokasian, Lars Hernquist, & Volker Springel.* 598, 73 (2003)

Identifying Lenses with Small-Scale Structure. I. Cusp Lenses. *Charles R. Keeton, B. Scott Gaudi, & A. O. Petters.* 598, 138 (2003)

The Effects of Relativistic Corrections on Cosmological Parameter Estimations from Sunyaev-Zel'dovich Effect Cluster Surveys. *Zuhui Fan & Yanling Wu.* 598, 713 (2003)

Probing Dark Energy with Baryonic Acoustic Oscillations from Future Large Galaxy Redshift Surveys. *Hee-Jong Seo & Daniel J. Eisenstein.* 598, 720 (2003)

Metallicity Evolution of Damped Lyα Systems in ΛCDM Cosmology. *Renyue Cen, Jeremiah P. Ostriker, Jason X. Prochaska, & Arthur M. Wolfe.* 598, 741 (2003)

Small-Scale Cosmic Microwave Background Temperature and Polarization Anisotropies due to Patchy Reionization. *Mário G. Santos, Asantha Cooray, Zoltán Haiman, Lloyd Knox, & Chung-Pei Ma.* 598, 756 (2003)

Optimal Weak-Lensing Skewness Measurements. *Tong-Jie Zhang, Ue-Li Pen, Pengji Zhang, & John Dubinski.* 598, 818 (2003)

Constraining Evolution in the Halo Model Using Galaxy Redshift Surveys. *Renbin Yan, Darren S. Madgwick, & Martin White.* 598, 848 (2003)

Model-Independent Reconstruction of the Primordial Power Spectrum from *Wilkinson Microwave Anisotropy Probe* Data. *Pia Mukherjee & Yun Wang.* 599, 1 (2003)

Model-Independent Reconstruction of the Primordial Power Spectrum from *Wilkinson Microwave Anisotropy Probe* Data. *Pia Mukherjee & Yun Wang.* 599, 1 (2003)

Arc Statistics in Triaxial Dark Matter Halos: Testing the Collisionless Cold Dark Matter Paradigm. *Masamune Oguri, Jounghun Lee, & Yasasushi Suto.* 599, 7 (2003)

Modeling Dynamical Dark Energy. *R. Mainini, A. V. Macciò, S. A. Bonometto, & A. Klypin.* 599, 24 (2003)

Halo Properties in Models with Dynamical Dark Energy. *A. Klypin, A. V. Macciò, R. Mainini, & S. A. Bonometto.* 599, 31 (2003)

Mapping the Cosmic Web with Lyα Emission. *Steven R. Furlanetto, Joop Schaye, Volker Springel, & Lars Hernquist.* 599, L1 (2003)

Improvements in the *M-T* Relation, Mass Function, and Measured Value of Ω_m through Cluster Evolution. *A. Del Popolo.* 599, 723 (2003)

Observing H_2 Emission in Forming Galaxies. *Kazuyuki Omukai & Tetsu Kitayama.* 599, 738 (2003)

The Mass Spectrum of Metal-free Stars Resulting from Photodissociation Feedback: A Scenario for the Formation of Low-Mass Population III Stars. *Kazuyuki Omukai & Yuzuru Yoshii.* 599, 746 (2003)

Combining *Wilkinson Microwave Anisotropy Probe* and Sloan Digital Sky Survey Quasar Data on Reionization Constrains Cosmological Parameters and Star Formation Efficiency. *Weihsueh A. Chiu, Xiaohui Fan, & Jeremiah P. Ostriker.* 599, 759 (2003)

The Richness-dependent Cluster Correlation Function: Early Sloan Digital Sky Survey Data. *Neta A. Bahcall, Feng Dong, Lei Hao, Paul Bode, Jim Annis, James E. Gunn, & Donald P. Schneider.* 599, 814 (2003)

Optimal Moments for the Analysis of Peculiar Velocity Surveys. II. Testing. *Hume A. Feldman, Richard Watkins, Adrian L. Melott, & Scott W. Chambers.* 599, 820 (2003)

Cosmological Magnetic Field Generation by the Weibel Instability. *R. Schlickeiser & P. K. Shukla.* 599, L57 (2003)

Limits on the Evolution of Galaxies from the Statistics of Gravitational Lenses. *Kyu-Hyun Chae & Shude Mao.* 599, L61 (2003)

DARK MATTER

The Mass Profile of Galaxy Clusters out to $\sim 2r_{200}$. *Andrea Biviano & Marisa Girardi.* 585, 205 (2003)

The Optical Design and Characterization of the *Microwave Anisotropy Probe*. *L. Page, C. Jackson, C. Barnes, C. Bennett, M. Halpern, G. Hinshaw, N. Jarosik, A. Kogut, M. Limon, S. S. Meyer, D. N. Spergel, G. S. Tucker, D. T. Wilkinson, E. Wollack, & E. L. Wright.* 585, 566 (2003)

Corrective Lenses for High-Redshift Supernovae. *Neal Dalal, Daniel E. Holz, Xuelei Chen, & Joshua A. Frieman.* 585, L11 (2003)

Chandra Observations of A2029: The Dark Matter Profile Down to below $0.01r_{\rm vir}$ in an Unusually Relaxed Cluster. *Aaron D. Lewis, David A. Buote, & John T. Stocke.* 586, 135 (2003)

Cluster-Cluster Microlensing as a Probe of Intracluster Stars, MACHOs, and Remnants of the First-Generation Stars. *Tomonori Totani.* 586, 735 (2003)

The Kinematic State of the Local Volume. *Alan B. Whiting.* 587, 186 (2003)

Mass of Clusters in Simulations. *Andrea V. Macciò, Giuseppe Murante, & Silvio P. Bonometto.* 588, 35 (2003)

Structure of Dark Matter Halos from Hierarchical Clustering. II. Dependence of Cosmological Models in Cluster-sized Halos. *Toshiyuki Fukushige & Junichiro Makino.* 588, 674 (2003)

Rapid Brightness Fluctuations in Q0957+561A,B: Microlensing or Seeing? *Wesley N. Colley, Irwin I. Shapiro, Jennifer Pegg, Edwin L. Turner, Tomislav Kundić, Karen Loomis, N. C. Hastings, & Russet McMillan.* 588, 711 (2003)

Evolution of the Cosmological Density Distribution Function from the Local Collapse Model. *Yasuhiro Ohta, Issha Kayo, & Atsushi Taruya.* 589, 1 (2003)

New Velocity Distribution for Cold Dark Matter in the Context of the Eddington Theory. *J. D. Vergados & D. Owen.* 589, 17 (2003)

A Search for Stellar Obscuration Events Due to Dark Clouds. *A. J. Drake & K. H. Cook.* 589, 281 (2003)

Dense Gas Clouds and the Unidentified EGRET Sources. *Mark Walker, Masaki Mori, & Michiko Ohishi.* 589, 810 (2003)

Nanolensing of Gamma-Ray Bursts. *Mark A. Walker & Geraint F. Lewis.* 589, 844 (2003)

Measuring the Deviation from the Linear and Deterministic Bias through Cosmic Gravitational Lensing Effects. *Zuhui Fan.* 594, 33 (2003)

The Nature and Origin of the Nonvoid Lyα Cloud Population. *Curtis V. Manning.* 595, 19 (2003)

Relaxation of a Collisionless System and the Transition to a New Equilibrium Velocity Distribution. *Thomas E. C. Merrall & Richard N. Henriksen.* 595, 43 (2003)

Astrometric Microlensing by Finite-Size Lenses. *Rohta Takahashi.* 595, 418 (2003)

Galaxy Formation: Cold Dark Matter, Feedback, and the Hubble Sequence. *Jesper Sommer-Larsen, Martin Götz, & Laura Portinari.* 596, 47 (2003)

Constraints of the Clumpiness of Dark Matter Halos through Heating of the Disk Galaxies. *Eliani Ardi, Toshio Tsuchiya, & Andreas Burkert.* 596, 204 (2003)

Constraints on Cold Dark Matter in the Gamma-Ray Halo of NGC 253. *R. Enomoto, T. Yoshida, S. Yanagita, & C. Itoh.* 596, 216 (2003)

Future Evolution of Cosmic Structure in an Accelerating Universe. *Michael T. Busha, Fred C. Adams, Risa H. Wechsler, & August E. Evrard.* 596, 713 (2003)

High-Resolution Measurements of the Dark Matter Halo of NGC 2976: Evidence for a Shallow Density Profile. *Joshua D. Simon, Alberto D. Bolatto, Adam Leroy, & Leo Blitz.* 596, 957 (2003)

Angular Momentum Distribution of Hot Gas and Implications for Disk Galaxy Formation. *D. N. Chen, Y. P. Jing, & Kohji Yoshikawa.* 597, 35 (2003)

Decaying Cold Dark Matter and the Evolution of the Cluster Abundance. *Masamune Oguri, Keitaro Takahashi, Hiroshi Ohno, & Kei Kotake.* 597, 645 (2003)

Lensing Effects of Misaligned Disks in Dark Matter Halos. *Ryan Quadri, Ole Möller, & Priyamvada Natarajan.* 597, 659 (2003)

Mass and Dust in the Disk of a Spiral Lens Galaxy. *Joshua N. Winn, Patrick B. Hall, & Paul L. Schechter.* 597, 672 (2003)

The Effects of Non-Gaussian Initial Conditions on the Structure and Substructure of Cold Dark Matter Halos. *Vladimir Avila-Reese, Pedro Colín, Gabriella Piccinelli, & Claudio Firmani.* 598, 36 (2003)

Halo Substructure and the Power Spectrum. *Andrew R. Zentner & James S. Bullock.* 598, 49 (2003)

Identifying Lenses with Small-Scale Structure. I. Cusp Lenses. *Charles R. Keeton, B. Scott Gaudi, & A. O. Petters.* 598, 138 (2003)

Observing the Dark Matter Density Profile of Isolated Galaxies. *Francisco Prada, Mayrita Vitvitska, Anatoly Klypin, Jon A. Holtzman, David J. Schlegel, Eva K. Grebel, H.-W. Rix, J. Brinkmann, T. A. McKay, & I. Csabai.* 598, 260 (2003)

A Wide-Field *Hubble Space Telescope* Study of the Cluster Cl 0024+1654 at $z = 0.4$. II. The Cluster Mass Distribution. *Jean-Paul Kneib, Patrick Hudelot, Richard S. Ellis, Tommaso Treu, Graham Smith, Phil Marshall, Oliver Czoske, Ian Smail, & Priyamvada Natarajan.* 598, 804 (2003)

Arc Statistics in Triaxial Dark Matter Halos: Testing the Collisionless Cold Dark Matter Paradigm. *Masamune Oguri, Jounghun Lee, & Yasasushi Suto.* 599, 7 (2003)

Modeling Dynamical Dark Energy. *R. Mainini, A. V. Macciò, S. A. Bonometto, & A. Klypin.* 599, 24 (2003)

Halo Properties in Models with Dynamical Dark Energy. *A. Klypin, A. V. Macciò, R. Mainini, & S. A. Bonometto.* 599, 31 (2003)

DENSE MATTER

The Critical Rotation of Strange Stars and Rapidly Rotating Pulsars. *Xiaoping Zheng, Shuhua Yang, & Jiarong Li.* 585, L135 (2003)

Gamma-Ray Bursts from Delayed Collapse of Neutron Stars to Quark Matter Stars. *Z. Berezhiani, I. Bombaci, A. Drago, F. Frontera, & A. Lavagno.* 586, 1250 (2003)

Enhancement of Resonant Thermonuclear Reaction Rates in Extremely Dense Stellar Plasmas. *Naoki Itoh, Nami Tomizawa, Shinya Wanajo, & Satoshi Nozawa.* 586, 1436 (2003)

Nuclear Composition of Gamma-Ray Burst Fireballs. *Andrei M. Beloborodov.* 588, 931 (2003)

The Crustal Rigidity of a Neutron Star, and Implications for PSR 1828−11 and Other Precession Candidates. *Curt Cutler, Greg Ushomirsky, & Bennett Link.* 588, 975 (2003)

Low-Mass Neutron Stars and the Equation of State of Dense Matter. *J. Carriere, C. J. Horowitz, & J. Piekarewicz.* 593, 463 (2003)

Thermal Structure and Cooling of Superfluid Neutron Stars with Accreted Magnetized Envelopes. *Alexander Y. Potekhin, Dmitry G. Yakovlev, Gilles Chabrier, & Oleg Y. Gnedin.* 594, 404 (2003)

Surface Photon Emissivity of Bare Strange Stars. *K. S. Cheng & T. Harko.* 596, 451 (2003)

Solid Quark Stars? *Renxin Xu.* 596, L59 (2003)

DIFFUSION

The Myriad-Source Model of Cosmic Rays. I. Steady State Age and Path Length Distributions. *J. C. Higdon & R. E. Lingenfelter.* 582, 330 (2003)

Voyager 1 and 2 Observations of Magnetic Fields and Associated Cosmic-Ray Variations from 2000 through 2001: 60–87 AU. *L. F. Burlaga, N. F. Ness, F. B. McDonald, J. D. Richardson, & C. Wang.* 582, 540 (2003)

Fast Reconnection in a Two-Stage Process. *Fabian Heitsch & Ellen G. Zweibel.* 583, 229 (2003)

Our Sun. IV. The Standard Model and Helioseismology: Consequences of Uncertainties in Input Physics and in Observed Solar Parameters. *Arnold I. Boothroyd & I.-Juliana Sackmann.* 583, 1004 (2003)

Diffusive Nuclear Burning in Neutron Star Envelopes. *Philip Chang & Lars Bildsten.* 585, 464 (2003)

Toward an ab Initio Theory of the Solar Modulation of Cosmic Rays. *S. Parhi, J. W. Bieber, W. H. Matthaeus, & R. A. Burger.* 585, 502 (2003)

Challenging Cosmic-Ray Propagation with Antiprotons: Evidence for a "Fresh" Nuclei Component? *Igor V. Moskalenko, Andrew W. Strong, Stepan G. Mashnik, & Jonathan F. Ormes.* 586, 1050 (2003)

A Local One-Zone Model of Magnetohydrodynamic Turbulence in Dwarf Nova Disks. *Takayoshi Sano & James M. Stone.* 586, 1297 (2003)

On the Coupling between Helium Settling and Rotation-induced Mixing in Stellar Radiative Zones. I. Analytical Approach. *Sylvie Vauclair & Sylvie Théado.* 587, 777 (2003)

On the Coupling between Helium Settling and Rotation-induced Mixing in Stellar Radiative Zones. II. Numerical Approach. *Sylvie Théado & Sylvie Vauclair.* 587, 784 (2003)

On the Coupling between Helium Settling and Rotation-induced Mixing in Stellar Radiative Zones. III. Applications to Light Elements in Population I Main-Sequence Stars. *Sylvie Théado & Sylvie Vauclair.* 587, 795 (2003)

Suppression of Fast Reconnection by Magnetic Shear. *Fabian Heitsch & Ellen G. Zweibel.* 590, 291 (2003)

Nonlinear Collisionless Perpendicular Diffusion of Charged Particles. *W. H. Matthaeus, G. Qin, J. W. Bieber, & G. P. Zank.* 590, L53 (2003)

Monte Carlo Study of Supernova Neutrino Spectra Formation. *Mathias Th. Keil, Georg G. Raffelt, & Hans-Thomas Janka.* 590, 971 (2003)

Atomic Spectral Features during Thermonuclear Flashes on Neutron Stars. *Lars Bildsten, Philip Chang, & Frits Paerels.* 591, L29 (2003)

Cosmos: A Radiation-Chemo-Hydrodynamics Code for Astrophysical Problems. *Peter Anninos, P. Chris Fragile, & Stephen D. Murray.* 147, 177 (2003)

Solar Wind Effects on the Transport of 3–10 MeV Cosmic-Ray Electrons from Solar Minimum to Solar Maximum. *S. E. S. Ferreira, M. S. Potgieter, D. M. Moeketsi, B. Heber, & H. Fichtner.* 594, 552 (2003)

Perpendicular Transport of Solar Energetic Particles in Heliospheric Magnetic Fields. *Ming Zhang, J. R. Jokipii, & R. B. McKibben.* 595, 493 (2003)

A Reevaluation of the Super–Lithium-rich Star in NGC 6633. *Chris Laws & Guillermo Gonzalez.* 595, 1148 (2003)

Trapping of Solar Energetic Particles by the Small-Scale Topology of Solar Wind Turbulence. *D. Ruffolo, W. H. Matthaeus, & P. Chuychai.* 597, L169 (2003)

EARLY UNIVERSE

The Optical Design and Characterization of the *Microwave Anisotropy Probe*. *L. Page, C. Jackson, C. Barnes, C. Bennett, M. Halpern, G. Hinshaw, N. Jarosik, A. Kogut, M. Limon, S. S. Meyer, D. N. Spergel, G. S. Tucker, D. T. Wilkinson, E. Wollack, & E. L. Wright.* 585, 566 (2003)

The Phase Coherence of Light from Extragalactic Sources: Direct Evidence against First-Order Planck-Scale Fluctuations in Time and Space. *Richard Lieu & Lloyd W. Hillman.* 585, L77 (2003)

Three Epochs of Star Formation in the High-Redshift Universe. *Jonathan Mackey, Volker Bromm, & Lars Hernquist.* 586, 1 (2003)

Numerical Simulations of High-Redshift Star Formation in Dwarf Galaxies. *Konstantinos Tassis, Tom Abel, Greg L. Bryan, & Michael L. Norman.* 587, 13 (2003)

The Evolution of the Global Stellar Mass Density at $0 < z < 3$. *Mark Dickinson, Casey Papovich, Henry C. Ferguson, & Tamás Budavári.* 587, 25 (2003)

Chemical Composition of the Early Universe. *Martin Harwit & Marco Spaans.* 589, 53 (2003)

Formation of the First Stars by Accretion. *Kazuyuki Omukai & Francesco Palla.* 589, 677 (2003)

Low-Frequency Gravitational Waves from Massive Black Hole Binaries: Predictions for *LISA* and Pulsar Timing Arrays. *J. Stuart B. Wyithe & Abraham Loeb.* 590, 691 (2003)

Luminous Lyman Break Galaxies at $z > 5$ and the Source of Reionization. *Matthew D. Lehnert & Malcolm Bremer.* 593, 630 (2003)

First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Tests of Gaussianity. *E. Komatsu, A. Kogut, M. R. Nolta, C. L. Bennett, M. Halpern, G. Hinshaw, N. Jarosik, M. Limon, S. S. Meyer, L. Page, D. N. Spergel, G. S. Tucker, L. Verde, E. Wollack, & E. L. Wright.* 148, 119 (2003)

First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: The Angular Power Spectrum. *G. Hinshaw, D. N. Spergel, L. Verde, R. S. Hill, S. S. Meyer, C. Barnes, C. L. Bennett, M. Halpern, N. Jarosik, A. Kogut, E. Komatsu, M. Limon, L. Page, G. S. Tucker, J. L. Weiland, E. Wollack, & E. L. Wright.* 148, 135 (2003)

First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Determination of Cosmological Parameters. *D. N. Spergel, L. Verde, H. V. Peiris, E. Komatsu, M. R. Nolta, C. L. Bennett, M. Halpern, G. Hinshaw, N. Jarosik, A. Kogut, M. Limon, S. S. Meyer, L. Page, G. S. Tucker, J. L. Weiland, E. Wollack, & E. L. Wright.* 148, 175 (2003)

First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Implications for Inflation. *H. V. Peiris, E. Komatsu, L. Verde, D. N. Spergel, C. L. Bennett, M. Halpern, G. Hinshaw, N. Jarosik, A. Kogut, M. Limon, S. S. Meyer, L. Page, G. S. Tucker, E. Wollack, & E. L. Wright.* 148, 213 (2003)

Star Formation History and Other Properties of the Northern Hubble Deep Field. *Rodger I. Thompson.* 596, 748 (2003)

The Metallicity of Pregalactic Globular Clusters: The Observational Consequences of the First Stars. *Michael A. Beasley, Daisuke Kawata, Frazer R. Pearce, Duncan A. Forbes, & Brad K. Gibson.* 596, L187 (2003)

Early Structure Formation and Reionization in a Cosmological Model with a Running Primordial Power Spectrum. *Naoki Yoshida, Aaron Sokasian, Lars Hernquist, & Volker Springel.* 598, 73 (2003)

Small-Scale Cosmic Microwave Background Temperature and Polarization Anisotropies due to Patchy Reionization. *Mário G. Santos, Asantha Cooray, Zoltán Haiman, Lloyd Knox, & Chung-Pei Ma.* 598, 756 (2003)

Dust in the Early Universe: Dust Formation in the Ejecta of Population III Supernovae. *Takaya Nozawa, Takashi Kozasa, Hideyuki Umeda, Keiichi Maeda, & Ken'ichi Nomoto.* 598, 785 (2003)

EARTH

Our Sun. V. A Bright Young Sun Consistent with Helioseismology and Warm Temperatures on Ancient Earth and Mars. *I.-Juliana Sackmann & Arnold I. Boothroyd.* 583, 1024 (2003)

Ozone Depletion from Nearby Supernovae. *Neil Gehrels, Claude M. Laird, Charles H. Jackman, John K. Cannizzo, Barbara J. Mattson, & Wan Chen.* 585, 1169 (2003)

ECLIPSES

Method for Spot Detection on Solar-like Stars. *Adriana V. R. Silva.* 585, L147 (2003)

On the Detection of the Signature of Silicon Nanoparticle Dust Grains in Coronal Holes. *Shadia Rifai Habbal, Martina Belz Arndt, Munir H. Nayfeh, Jean Arnaud, Judd Johnson, Steve Hegwer, Richard Woo, Alexandru Ene, & Feras Habbal.* 592, L87 (2003)

Microlensing of Large Sources. *Eric Agol.* 594, 449 (2003)

Infrared Observations During the Secondary Eclipse of HD 209458b. II. Strong Limits on the Infrared Spectrum near 2.2 Microns. *L. Jeremy Richardson, Drake Deming, & Sara Seager.* 597, 581 (2003)

Electron Temperature and Speed Measurements in the Low Solar Corona: Results From the 2001 June Eclipse. *Nelson L. Reginald, O. C. St. Cyr, Joseph M. Davila, & Jeffrey W. Brosius.* 599, 596 (2003)

EDITORIALS, NOTICES

Editorial: Editorial Transitions. *Robert C. Kennicutt, Jr.* 582, 1 (2003)

Editorial: ApJ Letters Transitions. *Alexander Dalgarno.* 582, L1 (2003)

Editorial: ApJ Letters Transitions. *Christopher Sneden.* 582, L3 (2003)

ELEMENTARY PARTICLES

Challenging Cosmic-Ray Propagation with Antiprotons: Evidence for a "Fresh" Nuclei Component? *Igor V. Moskalenko, Andrew W. Strong, Stepan G. Mashnik, & Jonathan F. Ormes.* 586, 1050 (2003)

Electron Neutrino Pair Annihilation: A New Source for Muon and Tau Neutrinos in Supernovae. *Robert Buras, Hans-Thomas Janka, Mathias Th. Keil, Georg G. Raffelt, & Markus Rampp.* 587, 320 (2003)

Large Mixing Angle Oscillations as a Probe of the Deep Solar Interior. *C. Burgess, N. S. Dzhalilov, M. Maltoni, T. I. Rashba, V. B. Semikoz, M. A. Tórtola, & J. W. F. Valle.* 588, L65 (2003)

New Velocity Distribution for Cold Dark Matter in the Context of the Eddington Theory. *J. D. Vergados & D. Owen.* 589, 17 (2003)

Solar Particle Transport in a Dynamical Quasi-linear Theory. *Wolfgang Dröge.* 589, 1027 (2003)

Pion Production in the Inner Disk Around Cygnus X-1. *Cesar Meirelles Filho, Celso L. Lima, Hideaki Miyake, & Varese Timoteo.* 595, 322 (2003)

High-Energy Neutrinos from Magnetars. *Bing Zhang, Z. G. Dai, P. Mészáros, E. Waxman, & A. K. Harding.* 595, 346 (2003)

Surface Photon Emissivity of Bare Strange Stars. *K. S. Cheng & T. Harko.* 596, 451 (2003)

Solid Quark Stars? *Renxin Xu.* 596, L59 (2003)

The Influence of Electron Impact Ionization in the Relativistic Pickup of Interstellar Neutrals. *R. Schlickeiser, M. Pohl, & R. Vainio.* 596, 840 (2003)

EQUATION OF STATE

Equation of State and Opacities for Hydrogen Atmospheres of Neutron Stars with Strong Magnetic Fields. *Alexander Y. Potekhin & Gilles Chabrier.* 585, 955 (2003)

Gamma-Ray Bursts from Delayed Collapse of Neutron Stars to Quark Matter Stars. *Z. Berezhiani, I. Bombaci, A. Drago, F. Frontera, & A. Lavagno.* 586, 1250 (2003)

Probing Dark Energy with the Cosmic Microwave Background: Projected Constraints from the *Wilkinson Microwave Anisotropy Probe* and *Planck*. *Amedeo Balbi, C. Baccigalupi, F. Perrotta, S. Matarrese, & N. Vittorio.* 588, L5 (2003)

Eddington-limited X-Ray Bursts as Distance Indicators. I. Systematic Trends and Spherical Symmetry in Bursts from 4U 1728−34. *Duncan K. Galloway, Dimitrios Psaltis, Deepto Chakrabarty, & Michael P. Muno.* 590, 999 (2003)

The Formation of Stellar Clusters in Turbulent Molecular Clouds: Effects of the Equation of State. *Yuexing Li, Ralf S. Klessen, & Mordecai-Mark Mac Low.* 592, 975 (2003)

Low-Mass Neutron Stars and the Equation of State of Dense Matter. *J. Carriere, C. J. Horowitz, & J. Piekarewicz.* 593, 463 (2003)

The Distance and Radius of the Neutron Star PSR B0656+14. *Walter F. Brisken, S. E. Thorsett, A. Golden, & W. M. Goss.* 593, L89 (2003)

Implications of the *Wilkinson Microwave Anisotropy Probe* Age Measurement for Stellar Evolution and Dark Energy. *Lawrence M. Krauss.* 596, L1 (2003)

A Model-Independent Determination of the Expansion and Acceleration Rates of the Universe as a Function of Redshift and Constraints on Dark Energy. *Ruth A. Daly & S. G. Djorgovski.* 597, 9 (2003)

Expected Constraints on the Generalized Chaplygin Equation of State from Future Supernova Experiments and Gravitational Lensing Statistics. *P. T. Silva & O. Bertolami.* 599, 829 (2003)

ERRATA, ADDENDA

The Dynamical Simulations of the Planets Orbiting GJ 876: Erratum (ApJ, 572, 1041 [2002]). *Jianghui Ji, Guangyu Li, & Lin Liu.* 582, 558 (2003) (Orig. paper in 572, 1041 (2002))

Detection of a Super–Star Cluster as the Ionizing Source in the Low-Luminosity Active Galactic Nucleus NGC 4303: Erratum (ApJ, 579, 545 [2002]). *Luis Colina, Rosa Gonzalez Delgado, J. Miguel Mas-Hesse, Claus Leitherer, & Elena Jiménez Bailón.* 582, 1269 (2003) (Orig. paper in 579, 545 (2002))

Absolute Proper Motions to $B \sim 22.5$. V. Detection of Sagittarius Dwarf Spheroidal Debris in the Direction of the Galactic Anticenter: Erratum (ApJ, 575, L67 [2002]). *Dana I. Dinescu, Steven R. Majewski, Terrence M. Girard, René A. Méndez, Allan Sandage, Michael H. Siegel, William E. Kunkel, John P. Subasavage, & Jamie Ostheimer.* 582, L125 (2003)

Molecular Gas in Spiral Galaxies: A New Warm Phase at Large Galactocentric Distances?: Erratum (ApJ, 579, 270 [2002]). *P. P. Papadopoulos, W.-F. Thi, & S. Viti.* 583, 524 (2003) (Orig. paper in 579, 270 (2002))

The Independence of Active Galactic Nucleus Black Hole Mass and Radio Loudness: Erratum (ApJ, 581, L5 [2002]). *Jong-Hak Woo & C. Megan Urry.* 583, L47 (2003)

The Radio Properties of Composite LINER/H II Galaxies: Erratum (ApJS, 142, 223 [2002]). *Mercedes E. Filho, Peter D. Barthel, & Luis C. Ho.* 144, 211 (2003) (Orig. paper in 142, 223 (2002))

Fragmentation of Magnetically Subcritical Clouds into Multiple Supercritical Cores and the Formation of Small Stellar Groups: Erratum (ApJ, 578, 256 [2002]). *Zhi-Yun Li & Fumitaka Nakamura.* 583, 1063 (2003) (Orig. paper in 578, 256 (2002))

The *ROSAT* All-Sky Survey: A Catalog of Clusters of Galaxies in a Region of 1 Steradian around the South Galactic Pole: Erratum (ApJS, 140, 239 [2002]). *R. Cruddace, W. Voges, H. Böhringer, C. Collins, D. Yentis, & H. MacGillivray.* 144, 299 (2003) (Orig. paper in 140, 239 (2002))

The Dynamics of M15: Observations of the Velocity Dispersion Profile and Fokker-Planck Models: Addendum (ApJ, 481, 267 [1997]). *J. D. Dull, H. N. Cohn, P. M. Lugger, B. W. Murphy, P. O. Seitzer, P. J. Callanan, R. G. M. Rutten, & P. A. Charles.* 585, 598 (2003) (Orig. paper in 481, 267 (1997))

X-Ray Properties of Young Stellar Objects in OMC-2 and OMC-3 from the *Chandra X-Ray Observatory*: Erratum (ApJ, 566, 974 [2002]). *Masahiro Tsujimoto, Katsuji Koyama, Yohko Tsuboi, Miwa Goto, & Naoto Kobayashi.* 585, 602 (2003) (Orig. paper in 566, 974 (2002))

Detection of a Super–Star Cluster as the Ionizing Source in the Low-Luminosity Active Galactic Nucleus NGC 4303: Erratum (ApJ, 582, 1269 [2003]). *Luis Colina, Rosa Gonzalez-Delgado, J. Miguel Mas-Hesse, Claus Leitherer, & Elena Jiménez-Bailón.* 586, 692 (2003) (Orig. paper in 582, 1269 (2003))

Chandra Observations of Variable Embedded X-Ray Sources in Orion. I. Resolving the Orion Trapezium: Erratum (ApJ, 549, 441 [2001]). *N. S. Schulz, C. Canizares, D. Huenemoerder, J. H. Kastner, S. C. Taylor, & E. J. Bergstrom.* 586, 1441 (2003) (Orig. paper in 549, 441 (2001))

On Pressure Gradients and Rapid Migration of Solids in a Nonuniform Solar Nebula: Erratum (ApJ, 583, 996 [2003]). *Nader Haghighipour & Alan P. Boss.* 586, 1442 (2003) (Orig. paper in 583, 996 (2003))

A Dynamical Fossil in the Ursa Minor Dwarf Spheroidal Galaxy: Erratum (ApJ, 588, L21 [2003]). *Jan T. Kleyna, Mark I. Wilkinson, Gerard Gilmore, & N. Wyn Evans.* 589, L59 (2003) (Orig. paper in 588, L21 (2003))

On a Mechanism for Enhancing Magnetic Activity in Tidally Interacting Binaries: Erratum (ApJ, 579, 810 [2002]). *T. Zaqarashvili, G. Javakhishvili, & G. Belvedere.* 591, 498 (2003) (Orig. paper in 579, 810 (2002))

Accurate Laboratory Wavelengths of the Vacuum Ultraviolet $A(v' = 3)$–$X(v'' = 0)$ Band of $^{12}C^{17}O$ and $^{12,18}O$: Erratum (ApJ, 590, L123 [2003]). *Christine M. Steinmann, Erich G. Rohwer, & Herbert Stafast.* 591, L167 (2003) (Orig. paper in 590, L123 (2003))

The Transformation of Galaxies within the Large-Scale Structure around a $z = 0.41$ Cluster: Erratum (ApJ, 562, L9 [2001]). *T. Kodama, Ian Smail, F. Nakata, S. Okamura, & R. G. Bower.* 591, L169 (2003) (Orig. paper in 562, L9 (2001))

Optical and Near-Infrared Imaging of the *IRAS* 1 Jy Sample of Ultraluminous Infrared Galaxies. I. The Atlas: Addendum (ApJS, 143, 277 [2002]). *D.-C. Kim, S. Veilleux, & D. B. Sanders.* 147, 221 (2003) (Orig. paper in 143, 277 (2002))

Optical and Near-Infrared Imaging of the *IRAS* 1 Jy Sample of Ultraluminous Infrared Galaxies. II. The Analysis: Addendum (ApJS, 143, 315 [2002]). *S. Veilleux, D.-C. Kim, & D. B. Sanders.* 147, 223 (2003) (Orig. paper in 143, 315 (2002))

A Grid of Non-LTE Line-blanketed Model Atmospheres of O-Type Stars: Erratum (ApJS, 146, 417 [2003]). *Thierry Lanz & Ivan Hubeny.* 147, 225 (2003) (Orig. paper in 146, 417 (2003))

Surveys for $z > 3$ Damped Lyα Absorption Systems: The Evolution of Neutral Gas: Erratum (ApJ, 543, 552 [2000]). *Lisa J. Storrie-Lombardi & Arthur M. Wolfe.* 592, 1263 (2003) (Orig. paper in 543, 552 (2000))

Ultraviolet Continuum, Physical Conditions and Filling Factor in Active Galactic Nuclei: Erratum (ApJ, 587, 562 [2003]). *Lucimara P. Martins, Sueli M. Viegas, & Ruth Gruenwald.* 592, 1264 (2003) (Orig. paper in 587, 562 (2003))

Analysis of the Temperature and Emission Measure of Solar Coronal Arcades and Test of a Scaling Law of Flare/Arcade Loop Length: Erratum (ApJ, 579, L45 [2002]). *Tetsuya T. Yamamoto, Daikou Shiota, Takuma Sakajiri, Sachiko Akiyama, Hiroaki Isobe, & Kazunari Shibata.* 592, L107 (2003) (Orig. paper in 579, L45 (2002))

Optically Thick Gyrosynchrotron Emission from Anisotropic Electron Distributions: Erratum (ApJ, 584, 1071 [2003]). *G. D. Fleishman & V. F. Melnikov.* 593, 597 (2003) (Orig. paper in 584, 1071 (2003))

Gyrosynchrotron Emission from Anisotropic Electron Distributions: Erratum (ApJ, 587, 823 [2003]). *G. D. Fleishman & V. F. Melnikov.* 593, 598 (2003) (Orig. paper in 587, 823 (2003))

Constraints on the Origin of Manganese from the Composition of the Sagittarius Dwarf Galaxy and the Galactic Bulge: Erratum (ApJ, 592, L21 [2003]). *Andrew McWilliam, R. Michael Rich, & Tammy A. Smecker-Hane.* 593, L145 (2003) (Orig. paper in 592, L21 (2003))

Fixed Delay Interferometry for Doppler Extrasolar Planet Detection: Erratum (ApJ, 571, L165 [2002]). *Jian Ge.* 593, L147 (2003) (Orig. paper in 571, L165 (2002))

An Ultra–High-Resolution Survey of the Interstellar $^7Li/^6Li$ Isotope Ratio in the Solar Neighborhood: Erratum (ApJ, 586, 268 [2003]). *David C. Knauth, S. R. Federman, & David L. Lambert.* 594, 664 (2003) (Orig. paper in 586, 268 (2003))

Modeling the Formation of Clouds in Brown Dwarf Atmospheres: Erratum (ApJ, 586, 1320 [2003]). *Curtis S. Cooper, David Sudarsky, John A. Milsom, Jonathan I. Lunine, & Adam Burrows.* 595, 573 (2003) (Orig. paper in 586, 1320 (2003))

Three-Dimensional Simulations of Parker, Magneto-Jeans, and Swing Instabilities in Shearing Galactic Gas Disks: Erratum (ApJ, 581, 1080 [2002]). *Woong-Tae Kim, Eve C. Ostriker, & James M. Stone.* 595, 574 (2003) (Orig. paper in 581, 1080 (2002))

The Lyα Forest Flux Distribution at $z \sim 5.2$ and the Evolution of the Ionizing Background: Erratum (ApJ, 549, L11 [2001]). *Patrick McDonald & Jordi Miralda-Escudé.* 595, L67 (2003) (Orig. paper in 549, L11 (2001))

Oscillations in Arcturus from *WIRE* Photometry: Erratum (ApJ, 591, L151 [2003]). *Alon Retter, Timothy R. Bedding, Derek L. Buzasi, Hans Kjeldsen, & László L. Kiss.* 596, L125 (2003) (Orig. paper in 591, L151 (2003))

Secular Evolution of Hierarchical Planetary Systems: Erratum (ApJ, 592, 1201 [2003]). *Man Hoi Lee & S. J. Peale.* 597, 644 (2003) (Orig. paper in 592, 1201 (2003))

CO Molecular Gas in Infrared Luminous Galaxies: Erratum (ApJ, 588, 771 [2003]). *Lihong Yao, E. R. Seaquist, Nario Kuno, & Loretta Dunne.* 597, 1271 (2003) (Orig. paper in 588, 771 (2003))

A Measurement of the Temperature-Density Relation in the Intergalactic Medium Using a New Lyα Absorption Line Fitting Method: Erratum (ApJ, 562, 52 [2001]). *Patrick McDonald, Jordi Miralda-Escudé, Michael Rauch, Wallace L. W. Sargent, Tom A. Barlow, & Renyue Cen.* 598, 712 (2003) (Orig. paper in 562, 52 (2001))

The Smallest Mass Ratio Young Star Spectroscopic Binaries: Erratum (ApJ, 569, 863 [2002]). *L. Prato, M. Simon, T. Mazeh, I. S. McLean, D. Norman, & S. Zucker.* 598, 1409 (2003)

Discovery of a Possible Anomalous X-Ray Pulsar in the Small Magellanic Cloud: Addenudum (ApJ, 574, L29 [2002]). *R. C. Lamb, D. W. Fox, D. J. Macomb, & T. A. Prince.* 599, L115 (2003) (Orig. paper in 574, L29 (2002))

Near-Infrared, Adaptive Optics Observations of the T Tauri Multiple-Star System: Erratum (ApJ, 596, L87 [2003]). *Elise Furlan, William J. Forrest, Dan M. Watson, Keven I. Uchida, Bernhard R. Brandl, Luke D. Keller, & Terry L. Herter.* 599, L117 (2003) (Orig. paper in 596, L87 (2003))

EXTRATERRESTRIAL INTELLIGENCE

Target Selection for SETI. I. A Catalog of Nearby Habitable Stellar Systems. *Margaret C. Turnbull & Jill C. Tarter.* 145, 179 (2003)

Early-Type Stars: Most Favorable Targets for Astrometrically Detectable Planets in the Habitable Zone. *Andrew Gould, Eric B. Ford, & Debra A. Fischer.* 591, L155 (2003)

Searches for Fast Radio Transients. *J. M. Cordes & M. A. McLaughlin.* 596, 1142 (2003)

Photon Orbital Angular Momentum in Astrophysics. *Martin Harwit.* 597, 1266 (2003)

Target Selection for SETI. II. Tycho-2 Dwarfs, Old Open Clusters, and the Nearest 100 Stars. *Margaret C. Turnbull & Jill C. Tarter.* 149, 423 (2003)

GALAXIES: ABUNDANCES

CG J1720−67.8: A Detailed Analysis of Optical and Infrared Properties of a New Ultracompact Group of Galaxies. *S. Temporin, R. Weinberger, G. Galaz, & F. Kerber.* 584, 239 (2003)

The Chemical Composition of the 30 Doradus Nebula Derived from Very Large Telescope Echelle Spectrophotometry. *Antonio Peimbert.* 584, 735 (2003)

Average Spectra of Massive Galaxies in the Sloan Digital Sky Survey. *Daniel J. Eisenstein, David W. Hogg, Masataka Fukugita, Osamu Nakamura, Mariangela Bernardi, Douglas P. Finkbeiner, David J. Schlegel, J. Brinkmann, Andrew J. Connolly, István Csabai, James E. Gunn, Željko Ivezić, Don Q. Lamb, Jon Loveday, Jeffrey A. Munn, Robert C. Nichol, Donald P. Schneider, Michael A. Strauss, Alex Szalay, & Don G. York.* 585, 694 (2003)

Measurement of $^3He/^4He$ in the Local Interstellar Medium: The Collisa Experiment on *Mir*. *E. Salerno, F. Bühler, P. Bochsler, H. Busemann, M. L. Bassi, G. N. Zastenker, Yu. N. Agafonov, & N. A. Eismont.* 585, 840 (2003)

The Magnesium–Velocity Dispersion Relation and the Genesis of Early-Type Galaxies. *Guy Worthey & Maela Collobert.* 586, 17 (2003)

Measurement of the Europium Isotope Ratio for the Extremely Metal-poor, r-Process–enhanced Star CS 31082-001. *Wako Aoki, Satoshi Honda, Timothy C. Beers, & Christopher Sneden.* 586, 506 (2003)

Chandra X-Ray Observations of NGC 1316 (Fornax A). *Dong-Woo Kim & G. Fabbiano.* 586, 826 (2003)

Spectroscopy of Dwarf Galaxies in the Virgo Cluster. I. Data, Chemical Abundances, and Ionization Structure. *José M. Vílchez & Jorge Iglesias-Páramo.* 145, 225 (2003)

The Near-Infrared Ca II Triplet–σ Relation for Bulges of Spiral Galaxies. *Jesús Falcón-Barroso, Reynier F. Peletier, Alexandre Vazdekis, & Marc Balcells.* 588, L17 (2003)

Quasar Elemental Abundances at High Redshifts. *M. Dietrich, F. Hamann, J. C. Shields, A. Constantin, J. Heidt, K. Jäger, M. Vestergaard, & S. J. Wagner.* 589, 722 (2003)

High Resolution X-Ray Spectroscopic Constraints on Cooling-Flow Models for Clusters of Galaxies. *J. R. Peterson, S. M. Kahn, F. B. S. Paerels, J. S. Kaastra, T. Tamura, J. A. M. Bleeker, C. Ferrigno, & J. G. Jernigan.* 590, 207 (2003)

Chandra ACIS-S Observations of Three Quasars with Low-Redshift Damped Lyα Absorption: Constraints on the Cosmic Neutral Gas-Phase Metallicity at Redshift $z \approx 0.4$. *David A. Turnshek, Sandhya M. Rao, Andrew F. Ptak, Richard E. Griffiths, & Eric M. Monier.* 590, 730 (2003)

On Variations in the Peak Luminosity of Type Ia Supernovae. *F. X. Timmes, Edward F. Brown, & J. W. Truran.* 590, L83 (2003)

Differences in Carbon and Nitrogen Abundances between Field and Cluster Early-Type Galaxies. *P. Sánchez-Blázquez, J. Gorgas, N. Cardiel, J. Cenarro, & J. J. González.* 590, L91 (2003)

The Composition Gradient in M101 Revisited. II. Electron Temperatures and Implications for the Nebular Abundance Scale. *Robert C. Kennicutt, Jr., Fabio Bresolin, & Donald R. Garnett.* 591, 801 (2003)

The Effect of Collisional Enhancement of Balmer Lines on the Determination of the Primordial Helium Abundance. *V. Luridiana, A. Peimbert, M. Peimbert, & M. Cervino.* 592, 846 (2003)

The Ages and Abundances of a Sample of Globular Clusters in M49 (NGC 4472). *Judith G. Cohen, J. P. Blakeslee, & P. Côté.* 592, 866 (2003)

Chemical Substructure in the Milky Way Halo: A New Population of Old Stars. *Inese I. Ivans, Christopher Sneden, C. Renée James, George W. Preston, Jon P. Fulbright, Peter A. Höflich, Bruce W. Carney, & J. Craig Wheeler.* 592, 906 (2003)

Discovery of Eight New Extremely Metal-poor Galaxies in the Sloan Digital Sky Survey. *Alexei Y. Kniazev, Eva K. Grebel, Lei Hao, Michael A. Strauss, Jonathan Brinkmann, & Masataka Fukugita.* 593, L73 (2003)

The Complete *Far Ultraviolet Spectroscopic Explorer* Spectrum of the Small Magellanic Cloud Star Sk 108. *Christoforos Mallouris.* 147, 265 (2003)

Elemental Abundances in NGC 3516. *T. J. Turner, S. B. Kraemer, R. F. Mushotzky, I. M. George, & J. R. Gabel.* 594, 128 (2003)

Role of Clusters of Galaxies in the Evolution of the Metal Budget in the Universe. *A. Finoguenov, A. Burkert, & H. Böhringer.* 594, 136 (2003)

Damped Lyα Gas Metallicities at Redshifts $z = 0.9$–2.0 from Sloan Digital Sky Survey Spectra. *Daniel B. Nestor, Sandhya M. Rao, David A. Turnshek, & Daniel Vanden Berk.* 595, L5 (2003)

The Age-Metallicity Relation of the Universe in Neutral Gas: The First 100 Damped Lyα Systems. *Jason X. Prochaska, Eric Gawiser, Arthur M. Wolfe, Sandra Castro, & S. G. Djorgovski.* 595, L9 (2003)

A Relation between Supermassive Black Hole Mass and Quasar Metallicity? *Craig Warner, Fred Hamann, & Matthias Dietrich.* 596, 72 (2003)

Hierarchical Structure Formation and Chemical Evolution of Damped Lyα Systems. *Yong-Zhong Qian & G. J. Wasserburg.* 596, L9 (2003)

Massive Star Formation in a Gravitationally Lensed H II Galaxy at $z = 3.357$. *R. A. E. Fosbury, M. Villar-Martín, A. Humphrey, M. Lombardi, P. Rosati, D. Stern, R. N. Hook, B. P. Holden, S. A. Stanford, G. K. Squires, M. Rauch, & W. L. W. Sargent.* 596, 797 (2003)

Fe II/Mg II Emission-Line Ratio in High-Redshift Quasars. *M. Dietrich, F. Hamann, I. Appenzeller, & M. Vestergaard.* 596, 817 (2003)

New Damped Lyα Metallicities from ESI Spectroscopy of Five Palomar Sky Survey Quasars. *Jason X. Prochaska, Sandra Castro, & S. G. Djorgovski.* 148, 317 (2003)

Very High Column Density and Small Reddening toward GRB 020124 at $z = 3.20$. *J. Hjorth, P. Møller, J. Gorosabel, J. P. U. Fynbo, S. Toft, A. O. Jaunsen, A. A. Kaas, T. Pursimo, K. Torii, T. Kato, H. Yamaoka, A. Yoshida, B. Thomsen, M. I. Anderson, I. Burud, J. M. Castro Ceron, A. J. Castro-Tirado, A. S. Fruchter, L. Kaper, C. Kouveliotou, N. Masetti, E. Palazzi, H. Pedersen, E. Pian, J. Rhoads, E. Rol, N. R. Tanvir, P. M. Vreeswijk, R. A. M. J. Wijers, & E. P. J. van den Heuvel.* 597, 699 (2003)

The Metallicities of Star-forming Galaxies at Intermediate Redshifts $0.47 < z < 0.92$. *Simon J. Lilly, C. Marcella Carollo, & Alan N. Stockton.* 597, 730 (2003)

The DEEP Groth Strip Survey. VII. The Metallicity of Field Galaxies at $0.26 < z < 0.82$ and the Evolution of the Luminosity-Metallicity Relation. *Henry A. Kobulnicky, Christopher N. A. Willmer, Andrew C. Phillips, David C. Koo, S. M. Faber, Benjamin J. Weiner, Vicki L. Sarajedini, Luc Simard, & Nicole P. Vogt.* 599, 1006 (2003)

Measuring Global Galaxy Metallicities Using Emission-Line Equivalent Widths. *Henry A. Kobulnicky & Andrew C. Phillips.* 599, 1031 (2003)

GALAXIES: ACTIVE

Accretion of Low Angular Momentum Material onto Black Holes: Two-dimensional Hydrodynamical Inviscid Case. *Daniel Proga & Mitchell C. Begelman.* 582, 69 (2003)

Tracing the Warm-Hot Intergalactic Medium at Low Redshift: X-Ray Forest Observations toward H1821+643. *Smita Mathur, David H. Weinberg, & Xuelei Chen.* 582, 82 (2003)

The Kinematics and Physical Conditions of the Ionized Gas in Markarian 509. I. *Chandra* High Energy Grating Spectroscopy. *Tahir Yaqoob, Barry McKernan, Steven B. Kraemer, D. Michael Crenshaw, Jack R. Gabel, Ian M. George, & T. Jane Turner.* 582, 105 (2003)

The Kinematics and Physical Conditions of the Ionized Gas in Markarian 509. II. STIS Echelle Observations. *S. B. Kraemer, D. M. Crenshaw, T. Yaqoob, B. McKernan, J. R. Gabel, I. M. George, T. J. Turner, & J. P. Dunn.* 582, 125 (2003)

Accretion onto the Supermassive Black Hole in M87. *Tiziana Di Matteo, Steven W. Allen, Andrew C. Fabian, Andrew S. Wilson, & Andrew J. Young.* 582, 133 (2003)

The Discovery of H_2O Maser Emission in Seven Active Galactic Nuclei and at High Velocities in the Circinus Galaxy. *L. J. Greenhill, P. T. Kondrakto, J. E. J. Lovell, T. B. H. Kuiper, J. M. Moran, D. L. Jauncey, & G. P. Baines.* 582, L11 (2003)

The Mass of Quasar Broad Emission Line Regions. *J. A. Baldwin, G. J. Ferland, K. T. Korista, F. Hamann, & M. Dietrich.* 582, 590 (2003)

SHEEP: The Search for the High-Energy Extragalactic Population. *K. Nandra, I. Georgantopoulos, A. Ptak, & T. J. Turner.* 582, 615 (2003)

The *ASCA* X-Ray Spectrum of Arp 102B and Evaluation of Simple Models for Its Associated, Metastable Fe II Absorber. *Michael Eracleous, Jules P. Halpern, & Jane C. Charlton.* 582, 633 (2003)

What Do the *Hubble Space Telescope* and *Chandra* Tell Us about the Jet and the Nuclear Region of the Radio Galaxy 3C 270? *Marco Chiaberge, Roberto Gilli, F. Duccio Macchetto, William B. Sparks, & Alessandro Capetti.* 582, 645 (2003)

Protoquasars: Physical States and Observable Properties. *Nozomu Kawakatu, Masayuki Umemura, & Masao Mori.* 583, 85 (2003)

The Black Hole–Bulge Relationship in Quasars. *Gregory A. Shields, Karl Gebhardt, Sarah Salviander, Beverley J. Wills, Bingrong Xie, Michael S. Brotherton, Juntao Yuan, & Matthias Dietrich.* 583, 124 (2003)

The Black Hole Masses and Host Galaxies of BL Lacertae Objects. *Aaron J. Barth, Luis C. Ho, & Wallace L. W. Sargent.* 583, 134 (2003)

Chandra Snapshot Observations of Low-Luminosity Active Galactic Nuclei with a Compact Radio Source. *Yuichi Terashima & Andrew S. Wilson.* 583, 145 (2003)

A Search for "Dwarf" Seyfert Nuclei. VI. Properties of Emission-Line Nuclei in Nearby Galaxies. *Luis C. Ho, Alexei V. Filippenko, & Wallace L. W. Sargent.* 583, 159 (2003)

The Ionized Gas and Nuclear Environment in NGC 3783. II. Averaged *Hubble Space Telescope*/STIS and *Far Ultraviolet Spectroscopic Explorer* Spectra. *Jack R. Gabel, D. Michael Crenshaw, Steven B. Kraemer, W. N. Brandt, Ian M. George, Frederick W. Hamann, Mary Elizabeth Kaiser, Shai Kaspi, Gerard A. Kriss, Smita Mathur, Richard F. Mushotzky, Kirpal Nandra, Hagai Netzer, Bradley M. Peterson, Joseph C. Shields, T. J. Turner, & Wei Zheng.* 583, 178 (2003)

The Largest Balck Holes and the Most Luminous Galaxies. *Hagai Netzer.* 583, L5 (2003)

The Unified Model and Evolution of Active Galaxies: Implications from a Spectropolarimetric Study. *Hien D. Tran.* 583, 632 (2003)

Chemical Abundances in Broad Emission Line Regions: The "Nitrogen-loud" Quasi-Stellar Object Q0353−383. *J. A. Baldwin, F. Hamann, K. T. Korista, G. J. Ferland, M. Dietrich, & C. Warner.* 583, 649 (2003)

COLA. II. Radio and Spectroscopic Diagnostics of Nuclear Activity in Galaxies. *E. A. Corbett, L. Kewley, P. N. Appleton, V. Charmandaris, M. A. Dopita, C. A. Heisler, R. P. Norris, A. Zezas, & A. Marston.* 583, 670 (2003)

The Infrared Spectral Energy Distribution of the Seyfert 2 Prototype NGC 5252. *M. Almudena Prieto & J. A. Acosta-Pulido.* 583, 689 (2003)

Faint Active Galactic Nuclei and the Ionizing Background. *Michael Schirber & James S. Bullock.* 584, 110 (2003)

X-Ray Luminous Galaxies. I. *Chandra* Observations of IRAS 00317−2142. *I. Georgantopoulos, A. Zezas, & M. J. Ward.* 584, 129 (2003)

4C +12.50: A Superluminal Precessing Jet in the Recent Merger System IRAS 13451+1232. *M. L. Lister, K. I. Kellermann, R. C. Vermeulen, M. H. Cohen, J. A. Zensus, & E. Ros.* 584, 135 (2003)

SDSS J094857.3+002225: A Very Radio Loud, Narrow-Line Quasar with Relativistic Jets? *Hong-Yan Zhou, Ting-Gui Wang, Xiao-Bo Dong, You-Yuan Zhou, & Cheng Li.* 584, 147 (2003)

Implications of Variability Patterns Observed in TeV Blazars on the Structure of the Inner Jet. *Chiharu Tanihata, Tadayuki Takahashi, Jun Kataoka, & Greg M. Madejski.* 584, 153 (2003)

Emission and Absorption in the M87 LINER. *Bassem M. Sabra, Joseph C. Shields, Luis C. Ho, Aaron J. Barth, & Alexei V. Filippenko.* 584, 164 (2003)

Long-Term Continuous Monitoring of the Broad-Line Radio Galaxies 3C 390.3 and 3C 120 with the *Rossi X-Ray Timing Explorer*. *Mario Gliozzi, Rita M. Sambruna, & Michael Eracleous.* 584, 176 (2003)

Spatially Resolved Millimeter Interferometry of SMM J02399−0136: A Very Massive Galaxy at $z = 2.8$. *Reinhard Genzel, Andrew J. Baker, Linda J. Tacconi, Dieter Lutz, Pierre Cox, Stéphane Guilloteau, & Alain Omont.* 584, 633 (2003)

Constraints on the Cluster Environments and Hot Spot Magnetic Field Strengths of the Radio Sources 3C 280 and 3C 254. *Megan Donahue, Ruth A. Daly, & Donald J. Horner.* 584, 643 (2003)

Correlated Long-Term Optical and X-Ray Variations in NGC 5548. *Philip Uttley, Rick Edelson, Ian M. McHardy, Bradley M. Peterson, & Alex Markowitz.* 584, L53 (2003)

The Redshift Evolution of the 2–8 keV X-Ray Luminosity Function. *L. L. Cowie, A. J. Barger, M. Bautz, W. N. Brandt, & G. P. Garmire.* 584, L57 (2003)

Very High Redshift X-Ray–selected Active Galactic Nuclei in the *Chandra* Deep Field–North. *A. J. Barger, L. L. Cowie, P. Capak, D. M. Alexander, F. E. Bauer, W. N. Brandt, G. P. Garmire, & A. E. Hornschemeier.* 584, L61 (2003)

Massive Elliptical Galaxies at High Redshift: NICMOS Imaging of $z \approx 1$ Radio Galaxies. *Andrew W. Zirm, Mark Dickinson, & Arjun Dey.* 585, 90 (2003)

Black Hole Masses in Three Seyfert Galaxies. *C. A. Onken, B. M. Peterson, M. Dietrich, A. Robinson, & I. M. Salamanca.* 585, 121 (2003)

No X-Ray–bright Type II Quasars among the Lyα Emitters. *S. Malhotra, J. X. Wang, J. E. Rhoads, T. M. Heckman, & C. A. Norman.* 585, L25 (2003)

Does the Narrow [O III] λ5007 Line Reflect the Stellar Velocity Dispersion in Active Galactic Nuclei. *Todd A. Boroson.* 585, 647 (2003)

An *Extreme Ultraviolet Explorer* Atlas of Seyfert Galaxy Light Curves: Search for Periodicity. *J. P. Halpern, K. M. Leighly, & H. L. Marshall.* 585, 665 (2003)

The Nuclear Accretion in the FR I Radio Galaxy IC 4296 from *Chandra* and Very Long Baseline Array Observations. *S. Pellegrini, T. Venturi, A. Comastri, G. Fabbiano, F. Fiore, C. Vignali, R. Morganti, & G. Trinchieri.* 585, 677 (2003)

Black Hole Mass and Spin Coevolution by Mergers. *Scott A. Hughes & Roger D. Blandford.* 585, L101 (2003)

The Host Galaxies of Optically Bright Quasi-stellar Objects: Molecular Gas in $z \leq 0.1$ Palomar-Green Quasi-stellar Objects. *N. Z. Scoville, D. T. Frayer, E. Schinnerer, & M. Christopher.* 585, L105 (2003)

Radio/X-Ray Offsets of Large-Scale Jets Caused by Synchrotron Time Lags. *J. M. Bai & Myung Gyoon Lee.* 585, L113 (2003)

Pearson-Readhead Survey Sources. II. The Long-Term Centimeter-Band Total Flux and Linear Polarization Properties of a Complete Radio Sample. *M. F. Aller, H. D. Aller, & P. A. Hughes.* 586, 33 (2003)

The Baldwin Effect and Black Hole Accretion: A Spectral Principal Component Analysis of a Complete Quasar Sample. *Zhaohui Shang, Beverley J. Wills, Edward L. Robinson, D. Wills, Ari Laor, Bingrong Xie, & Juntao Yuan.* 586, 52 (2003)

Neutral Beams from Blazar Jets. *Armen M. Atoyan & Charles D. Dermer.* 586, 79 (2003)

Using Multiwavelength Observations to Determine the Black Hole Mass and Accretion Rate in the Type 1 Seyfert Galaxy NGC 5548. *James Chiang & Omer Blaes.* 586, 97 (2003)

Clear Evidence for Intranight Optical Variability in Radio-quiet Quasars. *Gopal-Krishna, C. S. Stalin, Ram Sagar, & Paul J. Wiita.* 586, L25 (2003)

Variability of Sagittarius A*: Flares at 1 Millimeter. *Jun-Hui Zhao, K. H. Young, R. M. Herrnstein, P. T. P. Ho, T. Tsutsumi, K. Y. Lo, W. M. Goss, & G. C. Bower.* 586, L29 (2003)

The *XMM-Newton* View of the Nucleus of NGC 4261. *R. M. Sambruna, M. Gliozzi, M. Eracleous, W. N. Brandt, & R. Mushotzky.* 586, L37 (2003)

Flaring X-Ray Emission from HST-1, a Knot in the M87 Jet. *D. E. Harris, J. A. Biretta, W. Junor, E. S. Perlman, W. B. Sparks, & A. S. Wilson.* 586, L41 (2003)

A Search for Correlations of TeV Gamma Rays with Ultra–High-Energy Cosmic Rays. *C. W. Akerlof, S. Biller, P. Boyle, J. Buckley, D. A. Carter-Lewis, M. Catanese, M. F. Cawley, V. Connaughton, D. J. Fegan, J. Finley, J. Gaidos, A. M. Hillas, F. Krennrich, R. C. Lamb, R. Lessard, J. McEnery, G. Mohanty, N. A. Porter, J. Quinn, A. Rodgers, H. J. Rose, F. Samuelson, M. S. Schubnell, G. Sembroski, R. Srinivasan, T. C. Weekes, & J. Zweerink.* 586, 1232 (2003)

An Intrinsic Baldwin Effect in the Hβ Broad Emission Line in the Spectrum of NGC 5548. *Karoline M. Gilbert & Bradley M. Peterson.* 587, 123 (2003)

Ultraviolet Continuum, Physical Conditions, and Filling Factor in Active Galactic Nuclei. *Lucimara P. Martins, Sueli M. Viegas, & Ruth Gruenwald.* 587, 562 (2003)

Spectra from a Magnetic Reconnection–heated Corona in Active Galactic Nuclei. *B. F. Liu, S. Mineshige, & K. Ohsuga.* 587, 571 (2003)

Feedback Heating in Cluster and Galactic Cooling Flows. *Fabrizio Brighenti & William G. Mathews.* 587, 580 (2003)

Molecular Gas in Candidate Double-barred Galaxies. II. Cooler, Less Dense Gas Associated with Stronger Central Concentrations. *Glen R. Petitpas & Christine D. Wilson.* 587, 649 (2003)

Quasar Evolution Driven by Galaxy Encounters in Hierarchical Structures. *N. Menci, A. Cavaliere, A. Fontana, E. Giallongo, F. Poli, & V. Vittorini.* 587, L63 (2003)

An Optical Spectroscopic Atlas of Low-Redshift Active Galactic Nuclei. *P. Marziani, J. W. Sulentic, R. Zamanov, M. Calvini, D. Dultzin-Hacyan, R. Bachev, & T. Zwitter.* 145, 199 (2003)

Cosmic Star Formation History Assocatied with Quasar Activity: An Approach Using the Black Hole–to–Bulge Mass Correlation. *Y. P. Wang, T. Yamada, & Y. Taniguchi.* 588, 113 (2003)

What Types of Jets Does Nature Make? A New Population of Radio Quasars. *Paolo Padovani, Eric S. Perlman, Hermine Landt, Paolo Giommi, & Matteo Perri.* 588, 128 (2003)

3.1 Micron H_2O Ice Absorption in LINER-Type Ultraluminous Infrared Galaxies with Cool Far-Infrared Colors: The Centrally Concentrated Nature of Their Deeply Buried Energy Sources. *Masatoshi Imanishi & Philip R. Maloney.* 588, 165 (2003)

Interferometric Detection of Linear Polarization from Sagittarius A* at 230 GHz. *Geoffrey C. Bower, Melvyn C. H. Wright, Heino Falcke, & Donald C. Backer.* 588, 331 (2003)

Keck Spectroscopy of Four Quasi-stellar Object Host Galaxies. *J. S. Miller & A. I. Sheinis.* 588, L9 (2003)

The Speed and Orientation of the Parsec-Scale Jet in 3C 279. *B. Glenn Piner, Stephen C. Unwin, Ann E. Wehrle, Alma C. Zook, C. Megan Urry, & Diane M. Gilmore.* 588, 716 (2003)

Discovery of a New Radio Galaxy within the Error Box of the Unidentified Gamma-Ray Source 3EG J1735−1500. *J. A. Combi, G. E. Romero, J. M. Paredes, D. F. Torres, & M. Ribó.* 588, 731 (2003)

A Multiwavelength Study of Narrow-Line Seyfert 1 Galaxies from the Second Byurakan Survey. *J. A. Stepanian, E. Benítez, Y. Krongold, I. Cruz-González, J. A. de Diego, V. Chavushyan, R. Mújica, D. Dultzin-Hacyan, & T. Verdugo.* 588, 746 (2003)

A Continuous Injection Plasma Model for the X-Ray/Radio Knots in Kiloparsec-Scale Jets of Active Galactic Nuclei. *S. Sahayanathan, R. Misra, A. K. Kembhavi, & C. L. Kaul.* 588, L77 (2003)

The First CO Map of a Low Surface Brightness Galaxy. *K. O'Neil & E. Schinnerer.* 588, L81 (2003)

A View through Faraday's Fog: Parsec-Scale Rotation Measures in Active Galactic Nuclei. *R. T. Zavala & G. B. Taylor.* 589, 126 (2003)

Chandra Discovery of the Intracluster Medium around UM 425 at a Redshift of 1.47. *Smita Mathur & Rik J. Williams.* 589, L1 (2003)

Relativistic and Slowing Down: The Flow in the Hot Spots of Powerful Radio Galaxies and Quasars. *Markos Georganopoulos & Demosthenes Kazanas.* 589, L5 (2003)

Jet Collimation in Action: Realignment on Kiloparsec Scales in 3C 279. *D. C. Homan, M. L. Lister, K. I. Kellermann, M. H. Cohen, E. Ros, J. A. Zensus, M. Kadler, & R. C. Vermeulen.* 589, L9 (2003)

The Lack of Broad-Line Regions in Low Accretion Rate Active Galactic Nuclei as Evidence of Their Origin in the Accretion Disk. *Fabrizio Nicastro, Andrea Martocchia, & Giorigo Matt.* 589, L13 (2003)

BeppoSAX Average Spectra of Seyfert Galaxies. *A. Malizia, L. Bassani, J. B. Stephen, G. Di Cocco, F. Fiore, & A. J. Dean.* 589, L17 (2003)

Quasar Elemental Abundances at High Redshifts. *M. Dietrich, F. Hamann, J. C. Shields, A. Constantin, J. Heidt, K. Jäger, M. Vestergaard, & S. J. Wagner.* 589, 722 (2003)

VLBI Polarimetry of 177 Sources from the Caltech–Jodrell Bank Flat-Spectrum Survey. *L. K. Pollack, G. B. Taylor, & R. T. Zavala.* 589, 733 (2003)

Circumnuclear Dust in Nearby Active and Inactive Galaxies. II. Bars, Nuclear Spirals, and the Fueling of Active Galactic Nuclei. *Paul Martini, Michael W. Regan, John S. Mulchaey, & Richard W. Pogge.* 589, 774 (2003)

Detection of the "Active" Nucleus of M32. *Luis C. Ho, Yuichi Terashima, & James S. Ulvestad.* 589, 783 (2003)

An Accretion Model for the Growth of the Central Black Hole Associated with Ionization Instability in Quasars. *Y. Lu, K. S. Cheng, & S. N. Zhang.* 590, 52 (2003)

Technique for Detecting Warm-Hot Intergalactic Gas in Quasar Ultraviolet Spectra. *Luc Binette, Mario Rodríguez-Martínez, Sinhue Haro-Corzo, & Isidro Ballinas.* 590, 58 (2003)

The Nature of the Ultraviolet/X-Ray Absorber in PG 2302+029. *Bassem M. Sabra, Fred Hamann, Buell T. Jannuzi, Ian M. George, & Joseph C. Shields.* 590, 66 (2003)

On the Nature of Low-Luminosity Narrow-Line Active Galactic Nuclei. *Ari Laor.* 590, 86 (2003)

Testing of Inverse Compton Models for Active Galactic Nuclei with Gamma-Ray and Radio Observations. *A. Lähteenmäki & E. Valtaoja.* 590, 95 (2003)

The Gamma-Ray Blazar Content of the Northern Sky. *David Sowards-Emmerd, Roger W. Romani, & Peter F. Michelson.* 590, 109 (2003)

Spectral Slope Variability of BL Lacertae Objects in the Optical Band. *Fausto Vagnetti, Dario Trevese, & Roberto Nesci.* 590, 123 (2003)

The Far-Infrared Spectral Energy Distributions of X-Ray–selected Active Galaxies. *Joanna K. Kuraszkiewicz, Belinda J. Wilkes, Eric J. Hooper, Kim K. McLeod, Kenneth Wood, Jon Bjorkman, Kisha M. Delain, David H. Hughes, Martin S. Elvis, Chris D. Impey, Carol J. Lonsdale, Matt A. Malkan, Jonathan C. McDowell, & Barbara Whitney.* 590, 128 (2003)

The Flaring H_2O Megamaser and Conpact Radio Source in Markarian 348. *A. B. Peck, C. Henkel, J. S. Ulvestad, A. Brunthaler, H. Falcke, M. Elitzur, K. M. Menten, & J. F. Gallimore.* 590, 149 (2003)

A Warped Accretion Disk and Wide-Angle Outflow in the Inner Parsec of the Circinus Galaxy. *L. J. Greenhill, R. S. Booth, S. P. Ellingsen, J. R. Herrnstein, D. L. Jauncey, P. M. McCulloch, J. M. Moran, R. P. Norris, J. E. Reynolds, & A. K. Tzioumis.* 590, 162 (2003)

Contrasting the Ultraviolet and X-Ray O VI Column Density Inferred for the Outflow in NGC 5548. *Nahum Arav, Jelle Kaastra, Katrien Steenbrugge, Bert Brinkman, Rick Edelson, Kirk T. Korista, & Martijn de Kool.* 590, 174 (2003)

Renewed Activity in the Radio Galaxy PKS B1545−321: Twin Edge-brightened Beams within Diffuse Radio Lobes. *Lakshmi Saripalli, Ravi Subrahmanyan, & N. Udaya Shankar.* 590, 181 (2003)

Variability of Submillijansky Radio Sources. *C. L. Carilli, R. J. Ivison, & D. A. Frail.* 590, 192 (2003)

XMM-Newton Observations of the Perseus Cluster. I. The Temperature and Surface Brightness Structure. *E. Churazov, W. Forman, C. Jones, & H. Boehringer.* 590, 225 (2003)

A *Hubble Space Telescope*/WFPC2 Snapshot Survey of 2MASS-selected Red QSOs. *Andrew R. Marble, Dean C. Hines, Gary D. Schmidt, Paul S. Smith, Jason A. Surace, Lee Armus, Roc M. Cutri, & Brant O. Nelson.* 590, 707 (2003)

A Puzzling X-Ray Source Found in the *Chandra* Deep Field–South. *J. Wang, T. Yaqoob, G. Szokoly, R. Gilli, L. Kewley, V. Mainieri, M. Nonino, P. Rosati, P. Tozzi, W. Zheng, A. Zirm, & C. Norman.* 590, L87 (2003)

A Survey for H_2O Megamasers. III. Monitoring Water Vapor Masers in Active Galaxies. *J. A. Braatz, A. S. Wilson, C. Henkel, R. Gough, & M. Sinclair.* 146, 249 (2003)

An Imaging Survey of Early-Type Barred Galaxies. *Peter Erwin & Linda S. Sparke.* 146, 299 (2003)

Circumnuclear Dust in Nearby Active and Inactive Galaxies. I. Data. *Paul Martini, Michael W. Regan, John S. Mulchaey, & Richard W. Pogge.* 146, 353 (2003)

The Cross-Wavelet Transform and Analysis of Quasi-periodic Behavior in the Pearson-Readhead VLBI Survey Sources. *Brandon C. Kelly, Philip A. Hughes, Hugh D. Aller, & Margo F. Aller.* 591, 695 (2003)

Timescales of Soft X-Ray Variability and Physical Constraints in Active Galactic Nuclei. *W. Bian & Y. Zhao.* 591, 733 (2003)

INTEGRAL Spectroscopy of IRAS 17208−0014: Implications for the Evolutionary Scenarios of Ultraluminous Infrared Galaxies. *Santiago Arribas & Luis Colina.* 591, 791 (2003)

Chandra X-Ray Spectroscopic Imaging of Sagittarius A* and the Central Parsec of the Galaxy. *F. K. Baganoff, Y. Maeda, M. Morris, M. W. Bautz, W. N. Brandt, W. Cui, J. P. Doty, E. D. Feigelson, G. P. Garmire, S. H. Pravdo, G. R. Ricker, & L. K. Townsley.* 591, 891 (2003)

XMM-Newton Observation of Broad Iron Kα Emission from Seyfert 1.9 Galaxy MCG −5-23-16. *G. C. Dewangan, R. E. Griffiths, & N. J. Schurch.* 592, 52 (2003)

X-Ray Emission from the Hot Interstellar Medium and Southwest Radio Lobe of the Nearby Radio Galaxy Centaurus A. *R. P. Kraft, S. E. Vázquez, W. R. Forman, C. Jones, S. S. Murray, M. J. Hardcastle, D. M. Worrall, & E. Churazov.* 592, 129 (2003)

On Resonance-Line Profiles Predicted by Radiation-driven Disk-Wind Models. *Daniel Proga.* 592, L9 (2003)

Accretion of Low Angular Momentum Material onto Black Holes: Two-dimensional Magnetohydrodynamic Case. *Daniel Proga & Mitchell C. Begelman.* 592, 767 (2003)

A *Chandra* Survey of the Nearest Ultraluminous Infrared Galaxies: Obscured Active Galactic Nuclei or Superstarbursts? *A. Ptak, T. Heckman, N. A. Levenson, K. Weaver, & D. Strickland.* 592, 782 (2003)

VLBI Imaging of Luminous Infrared Galaxies: Active Galactic Nucleus Cores in Markarian 231, UGC 5101, and NGC 7469. *Carol J. Lonsdale, Colin J. Lonsdale, Harding E. Smith, & Philip J. Diamond.* 592, 804 (2003)

Simulations of Buoyant Bubbles in Galaxy Clusters. *M. Brüggen.* 592, 839 (2003)

Comptonization in Super-Eddington Accretion Flow and Growth Timescale of Supermassive Black Holes. *Toshihiro Kawaguchi.* 593, 69 (2003)

X-Ray Fluctuation Power Spectral Densities of Seyfert 1 Galaxies. *A. Markowitz, R. Edelson, S. Vaughan, P. Uttley, I. M. George, R. E. Griffiths, S. Kaspi, A. Lawrence, I. McHardy, K. Nandra, K. Pounds, J. Reeves, N. Schurch, & R. Warwick.* 593, 96 (2003)

Emission-Line Diagnostics of the Central Engines of Weak-Line Radio Galaxies. *Karen T. Lewis, Michael Eracleous, & Rita M. Sambruna.* 593, 115 (2003)

Nuclear Activity and Massive Star Formation in the Low-Luminosity Active Galactic Nucleus NGC 4303: *Chandra* X-Ray Observations. *E. Jiménez-Bailón, M. Santos-Lleó, J. M. Mas-Hesse, M. Guainazzi, L. Colina, M. Cerviño, & Rosa M. González Delgado.* 593, 127 (2003)

The Kinematics and Physical Conditions of the Ionized Gas in NGC 4593 from *Chandra* High-Energy Grating Spectroscopy. *Barry McKernan, Tahir Yaqoob, Ian M. George, & T. J. Turner.* 593, 142 (2003)

BeppoSAX Observations of Centaurus A: The Hard Continuum and the Iron-Line Feature. *P. Grandi, M. Fiocchi, C. G. Perola, C. M. Urry, L. Maraschi, E. Massaro, G. Matt, A. Preite-Martinez, H. Steinle, & W. Collmar.* 593, 160 (2003)

Radio and X-Ray Observations of the Jet in Centaurus A. *M. J. Hardcastle, D. M. Worrall, R. P. Kraft, W. R. Forman, C. Jones, & S. S. Murray.* 593, 169 (2003)

Eddington Accretion and QSO Emission Lines at $z \sim 2$. *Michael Juntao Yuan & Beverley J. Wills.* 593, L11 (2003)

Optical Spectropolarimetry of Quasi-stellar Objects Discovered by the Two-Micron All Sky Survey. *Paul S. Smith, Gary D. Schmidt, Dean C. Hines, & Craig B. Foltz.* 593, 676 (2003)

Equilibrium Models of Galaxy Clusters with Cooling, Heating, and Conduction. *M. Brüggen.* 593, 700 (2003)

A Massive X-Ray Outflow from the Quasar PDS 456. *J. N. Reeves, P. T. O'Brien, & M. J. Ward.* 593, L65 (2003)

Fast Outflow of Neutral Hydrogen in the Radio Galaxy 3C 293. *R. Morganti, T. A. Oosterloo, B. H. C. Emonts, J. M. van der Hulst, & C. N. Tadhunter.* 593, L69 (2003)

Simultaneous Ultraviolet and X-Ray Spectroscopy of the Seyfert 1 Galaxy NGC 5548. I. Physical Conditions in the Ultraviolet Absorbers. *D. M. Crenshaw, S. B. Kraemer, J. R. Gabel, J. S. Kaastra, K. C. Steenbrugge, A. C. Brinkman, J. P. Dunn, I. M. George, D. A. Liedahl, F. B. S. Paerels, T. J. Turner, & T. Yaqoob.* 594, 116 (2003)

Elemental Abundances in NGC 3516. *T. J. Turner, S. B. Kraemer, R. F. Mushotzky, I. M. George, & J. R. Gabel.* 594, 128 (2003)

Decelerating Flows in TeV Blazars: A Resolution to the BL Lacertae–FR I Unification Problem. *Markos Georganopoulos & Demosthenes Kazanas.* 594, L27 (2003)

Chandra Observations of the X-Ray–luminous Star-forming Galaxy Merger Arp 299. *A. Zezas, M. J. Ward, & S. S. Murray.* 594, L31 (2003)

Chandra Observations of NGC 4698: A Seyfert 2 Galaxy with No Absorption. *I. Georgantopoulos & A. Zezas.* 594, 704 (2003)

Luminous Hot Accretion Flows: Thermal Equilibrium Curve and Thermal Stability. *Feng Yuan.* 594, L99 (2003)

The Origin of X-shaped Radio Galaxies: Clues from the Z-symmetric Secondary Lobes. *Gopal-Krishna, Peter L. Biermann, & Paul J. Wiita.* 594, L103 (2003)

XMM-Newton Reveals the Quasar Outflow in PG 1115+080. *G. Chartas, W. N. Brandt, & S. C. Gallagher.* 595, 85 (2003)

The Ionized Gas and Nuclear Environment in NGC 3783. III. Detection of a Decreasing Radial Velocity in an Intrinsic Ultraviolet Absorber. *Jack R. Gabel, D. Michael Crenshaw, Steven B. Kraemer, W. N. Brandt, Ian M. George, Frederick W. Hamann, Mary Elizabeth Kaiser, Shai Kaspi, Gerard A. Kriss, Smita Mathur, Richard F. Mushotzky, Kirpal Nandra, Hagai Netzer, Bradley M. Paterson, Joseph C. Shields, T. J. Turner, & Wei Zheng.* 595, 120 (2003)

Revealing the Active Galactic Nucleus in the Superantennae through *L*-Band Spectroscopy. *G. Risaliti, R. Maiolino, A. Marconi, L. Bassani, S. Berta, V. Braito, R. Della Ceca, A. Franceschini, & M. Salvati.* 595, L17 (2003)

Black Hole Masses and the Fundamental Plane of BL Lacertae Objects. *R. Falomo, J. K. Kotilainen, N. Carangelo, & A. Treves.* 595, 624 (2003)

Magnetocentrifugal Launching of Jets from Accretion Disks. II. Inner Disk-driven Winds. *Ruben Krasnopolsky, Zhi-Yun Li, & Roger D. Blandford.* 595, 631 (2003)

Catching NGC 4051 in the Low State with *Chandra*. *Philip Uttley, Antonella Fruscione, Ian M. Hardy, & Georg Lamer.* 595, 656 (2003)

Physical Conditions and Star Formation Activity in the Intragroup Medium of Stephan's Quintet. *C. K. Xu, N. Lu, J. J. Condon, M. Dopita, & R. J. Tuffs.* 595, 665 (2003)

Hubble Space Telescope Imaging in the *Chandra* Deep Field–South. III. Quantitative Morphology of the 1 Million Second *Chandra* Counterparts and Comparison with the Field Population. *N. A. Grogin, A. M. Koekemoer, E. J. Schreier, J. Bergeron, R. Giacconi, G. Hasinger, L. Kewley, C. Norman, P. Rosati, P. Tozzi, & A. Zirm.* 595, 685 (2003)

A Relation between Supermassive Black Hole Mass and Quasar Metallicity? *Craig Warner, Fred Hamann, & Matthias Dietrich.* 596, 72 (2003)

Fe XXV and Fe XXVI Diagnostics of the Black Hole and Accretion Disk in Active Galaxies: *Chandra* Time-resolved Grating Spectroscopy of NGC 7314. *Tahir Yaqoob, Ian M. George, Timothy R. Kallman, Urmila Padmanabhan, Kimberly A. Weaver, & T. Jane Turner.* 596, 85 (2003)

Extended X-Ray Emission around 4C 41.17 at $z = 3.8$. *Caleb Scharf, Ian Smail, Rob Ivison, Richard Bower, Wil van Breugel, & Michiel Reuland.* 596, 105 (2003)

Can a Dusty Warm Absorber Model Reproduce the Soft X-Ray Spectra of MCG −6-30-15 and Markarian 766? *Masao Sako, Steven M. Kahn, Graziella Branduardi-Raymont, Jelle S. Kaastra, Albert C. Brinkman, Mathew J. Page, Ehud Behar, Frits Paerels, Ali Kinkhabwala, Duane A. Liedahl, & Jan Willem den Herder.* 596, 114 (2003)

Circulation Flows: Cooling Flows with Bubble Return. *William G. Mathews, Fabrizio Brighenti, David A. Boute, & Aaron D. Lewis.* 596, 159 (2003)

The Changing Active Galactic Nucleus Population. *A. T. Steffen, A. J. Barger, L. L. Cowie, R. F. Mushotzky, & Y. Yang.* 596, L23 (2003)

Gemini-South + FLAMINGOS Demonstration Science: Near-IR Spectroscopy of the $z = 5.77$ Quasar SDSS J083643.85+005453.3. *Daniel Stern, Pat Hall, L. Felipe Barrientos, Andrew J. Bunker, Richard Elston, M. J. Ledlow, S. Nicholas Raines, & Jon Willis.* 596, L39 (2003)

Strong Gravitational Lensing and the Structure of Quasar Outflows. *Doron Chelouche.* 596, L43 (2003)

Host Galaxies of Low-Z Radio-loud Quasars: A Search of *Hubble Space Telescope* Archives. *Claudio Pagani, Renato Falomo, & Aldo Treves.* 596, 830 (2003)

The Influence of Electron Impact Ionization in the Relativistic Pickup of Interstellar Neutrals. *R. Schlickeiser, M. Pohl, & R. Vainio.* 596, 840 (2003)

Coordinated Multiwavelength Observations of BL Lacertae in 2000. *M. Böttcher, A. P. Marscher, M. Ravasio, M. Villata, C. M. Raiteri, H. D. Aller, M. F. Aller, H. Teräsranta, O. Mang, G. Tagliaferri, F. Ahoronian, H. Krawczynski, O. M. Kurtanidze, M. G. Nikolashvili, M. A. Ibrahimov, I. E. Papadakis, K. Tsinganos, K. Sadakane, N. Okada, L. O. Takalo, A. Sillanpää, G. Tosti, S. Ciprini, A. Frasca, E. Marilli, R. Robb, J. C. Noble, S. G. Jorstad, V. A. Hagen-Thorn, V. M. Larionov, R. Nesci, M. Maesano, R. D. Schwartz, J. Basler, P. W. Gorham, H. Iwamatsu, T. Kato, C. Pullen, E. Benítez, J. A. de Diego, M. Moilanen, A. Oksanen, D. Rodriguez, A. C. Sadun, M. Kelly, M. T. Carini, H. R. Miller, S. Catalano, D. Dultzin-Hacyan, J. H. Fan, G. Ghisellini, R. Ishioka, H. Karttunen, P. Keinänen, N. A. Kudryavtseva, M. Lainela, L. Lanteri, E. G. Larionova, K. Matsumoto, J. R. Mattox, I. McHardy, F. Montagni, G. Nucciarelli, L. Ostorero, J. Papamastorakis, M. Pasanen, G. Sobrito, & M. Uemura.* 596, 847 (2003)

Shadowing of the Nascent Jet in NGC 4261 by a Line-Emitting Supersonic Accretion Disk. *Siming Liu, Michael J. Fromerth, & Fulvio Melia.* 596, 879 (2003)

Nonnuclear Hyper/Ultralumious X-Ray Sources in the Starbursting Carthwheel Ring Galaxy. *Yu Gao, Q. Daniel Wang, P. N. Appleton, & Ray A. Lucas.* 596, L171 (2003)

Optical Identification of the *ASCA* Medium Sensitivity Survey in the Northern Sky: Nature of Hard X-Ray–Selected Luminous Active Galactic Nuclei. *Masayuki Akiyama, Yoshihiro Ueda, Kouji Ohta, Tadayuki Takahashi, & Toru Yamada.* 148, 275 (2003)

A *Hubble Space Telescope* Survey of Extended [O III] λ5007 Emission in a Far-Infrared Selected Sample of Seyfert Galaxies: Observations. *H. R. Schmitt, J. L. Donley, R. R. J. Antonucci, J. B. Hutchings, & A. L. Kinney.* 148, 327 (2003)

Space Telescope Imaging Spectrograph Spectroscopy of the Emission-Line Gas in the Nuclei of Nearby FR-I Galaxies. *Jacob Noel-Storr, Stefi A. Baum, Gijs Verdoes Kleijn, Roeland P. van der Marel, Christoper P. O'Dea, Tim de Zeeuw, & C. Marcella Carollo.* 148, 419 (2003)

The Environment of Active Galactic Nuclei in the Sloan Digital Sky Survey. *Christopher J. Miller, Robert C. Nichol, Percy L. Gómez, Andrew M. Hopkins, & Mariangela Bernardi.* 597, 142 (2003)

Identifying Compact Symmetric Objects in the Southern Sky. *G. B. Taylor & A. B. Peck.* 597, 157 (2003)

The Nuclear Spectral Energy Distribution of NGC 6251: A BL Lacertae Object in the Center of an FR I Radio Galaxy. *Marco Chiaberge, Roberto Gilli, Alessandro Capetti, & F. Duccio Macchetto.* 597, 166 (2003)

An *XMM-Newton* and *Chandra* Investigation of the Nuclear Accretion in the Sombrero Galaxy (NGC 4594). *S. Pellegrini, A. Baldi, G. Fabbiano, & D.-W. Kim.* 597, 175 (2003)

Chandra Observations of Point Sources in A2255. *David S. Davis, Neal A. Miller, & Richard F. Mushotzky.* 597, 202 (2003)

Radio-loud Active Galactic Nuclei in the Context of the Eigenvector 1 Parameter Space. *J. W. Sulentic, S. Zamfir, P. Marziani, R. Bachev, M. Calvani, & D. Dultzin-Hacyan.* 597, L17 (2003)

A *Hubble Space Telescope* Survey of Extended [O III] λ5007 Emission in a Far-Infrared Selected Sample of Seyfert Galaxies: Results. *H. R. Schmitt, J. L. Donley, R. R. J. Antonucci, J. B. Hutchings, A. L. Kinney, & J. E. Pringle.* 597, 768 (2003)

Modeling Helical Structures in Relativistic Jets. *Philip E. Hardee.* 597, 798 (2003)

Sensitive VLBI Continuum and H I Absorption Observations of NGC 7474: First Scientific Observations with the Combined Array VLBA, VLA, and Arecibo. *Emmanuel Momjian, Jonathan D. Romney, Christopher L. Carilli, & Thomas H. Troland.* 597, 809 (2003)

Adaptive Optics Imaging and Spectroscopy of Cygnus A. I. Evidence for a Minor Merger. *Gabriela Canalizo, Claire Max, David Whysong, Robert Antonucci, & Scott E. Dahm.* 597, 823 (2003)

Toward a Self-Consistent Model of the Ionized Absorber in NGC 3783. *Y. Krongold, F. Nicastro, N. S. Brickhouse, M. Elvis, D. A. Liedahl, & S. Mathur.* 597, 832 (2003)

Modeling the TeV Gamma-Ray Spectra of Two Low-Redshift Active Galactic Nuclei: Markarian 501 and Markarian 421. *A. Konopelko, A. Mastichiadis, J. Kirk, O. C. de Jager, & F. W. Stecker.* 597, 851 (2003)

Circumnulear Structures in the Interacting Seyfert Galaxy of NGC 1241: Kinematics and Optical/Infrared Morphology. *Rubén J. Díaz, Horacio Dottori, Nelson Vera-Villamizar, & Gustavo Carranza.* 597, 860 (2003)

Multiepoch Sky Surveys and the Lifetime of Quasars. *Paul Martini & Donald P. Schneider.* 597, L109 (2003)

A Method for Black Hole Mass Determination in Accretion-powered X-Ray Sources. *Chris R. Shrader & Lev Titarchuk.* 598, 168 (2003)

Infrared Spectroscopy of 15 Radio Galaxies at $2 < z < 2.6$. *Fumihide Iwamuro, Kentaro Motohara, Toshinori Maihara, Masahiko Kimura, Shigeru Eto, Takanori Shima, Daisaku Mochida, Shinpei Wada, Satoko Imai, & Kentaro Aoki.* 598, 178 (2003)

Optical Identification of the *ASCA* Lynx Deep Survey: An Association of Quasi-Stellar Objects and a Supercluster at $z = 1.3$? *Kouji Ohta, Masayuki Akiyama, Yoshihiro Ueda, Toru Yamada, Kouichiro Nakanishi, Gavin B. Dalton, Yashushi Ogasaka, Tsuneo Kii, & Kiyoshi Hayashida.* 598, 210 (2003)

The Gamma-Ray Blazar PKS 0208−512 from MeV to GeV Energies. *J. Gregory Stacy, W. Thomas Vestrand, & P. Sreekumar.* 598, 216 (2003)

A Long Look at NGC 3783 with the *XMM-Newton* Reflection Grating Spectrometer. *Ehud Behar, Andrew P. Rasmussen, Alexander J. Blustin, Masao Sako, Steven M. Kahn, Jelle S. Kaastra, Graziella Branduardi-Raymont, & Katrien C. Steenbrugge.* 598, 232 (2003)

Nonthermal Electrons in Radiatively Inefficient Accretion Flow Models of Sagittarius A*. *Feng Yuan, Eliot Quataert, & Ramesh Narayan.* 598, 301 (2003)

Cosmological Evolution of the Hard X-Ray Active Galactic Nucleus Luminosity Function and the Origin of the Hard X-Ray Background. *Yoshihiro Ueda, Masayuki Akiyama, Kouji Ohta, & Takamitsu Miyaji.* 598, 886 (2003)

The Submillimeter Properties of Broad Absorption Line Quasars. *Chris J. Willot, Steve Rawlings, & Jennifer A. Grimes.* 598, 909 (2003)

XMM-Newton Observation of Fe Kα Emission from a Broad Absorption Line Quasar: Markarian 231. *T. J. Turner & S. B. Kraemer.* 598, 916 (2003)

An Intrinsic Absorption Complex toward RX J1230.8+0115: Geometry and Photoionization Conditions. *Rajib Ganguly, Joseph Masiero, Jane C. Charlton, & Kenneth R. Sembach.* 598, 922 (2003)

Long-Term X-Ray Spectral Variability in Seyfert 1 Galaxies. *A. Markowitz, R. Edelson, & S. Vaughan.* 598, 935 (2003)

A Warm/Hot Intergalactic Medium toward 3C 120? *Barry McKernan, Tahir Yaqoob, Richard Mushotzky, Ian M. George, & T. Jane Turner.* 598, L83 (2003)

Spatially Resolved Circumnuclear Dust in Centaurus A. *Margarita Karovska, Massimo Marengo, Martin Elvis, Giovanni G. Fazio, Joseph L. Hora, Philip M. Hinz, William F. Hoffmann, Michael Meyer, & Eric Mamajek.* 598, L91 (2003)

Altered Luminosity Functions of Relativistically Beamed Jet Populations. *M. L. Lister.* 599, 105 (2003)

Occurrence and Global Properties of Narrow C IV λ1549 Å Absorption Lines in Moderate-Redshift Quasars. *M. Vestergaard.* 599, 116 (2003)

Balmer Lines as Diagnostics of Physical Conditions in Active Galactic Nucleus Broad Emission Line Regions. *L. Č. Popović.* 599, 140 (2003)

Jet Formation in BL Lacertae Objects with Different Accretion Models. *Xinwu Cao.* 599, 147 (2003)

Does the Iron Kα Line of Active Galactic Nuclei Arise from the Cerenkov Line-like Radiation? *J. H. You, D. B. Liu, W. P. Chen, L. Chen, & S. N. Zhang.* 599, 164 (2003)

A *V*-Band Survey for Variable Galactic Nuclei in the Hubble Deep Field. *Vicki L. Sarajedini, Ronald L. Gilliland, & Christina Kasm.* 599, 173 (2003)

Hot Dust in Radio-loud Active Galactic Nuclei. *Wolfram Freudling, Ralf Siebenmorgen, & Martin Haas.* 599, L13 (2003)

Completion of a Survey and Detailed Study of Double-peaked Emission Lines in Radio-loud Active Galactic Nuclei. *Michael Eracleous & Jules P. Halpern.* 599, 886 (2003)

The Ionized Gas and Nuclear Environment in NGC 3783. IV. Variability and Modeling of the 900 Kilosecond *Chandra* Spectrum. *Hagai Netzer, Shai Kaspi, Ehud Behar, W. N. Brandt, Doron Chelouche, Ian M. George, D. Michael Crenshaw, Jack R. Gabel, Frederick W. Hamann, Steven B. Kraemer, Gerard A. Kriss, Kirpal Nandra, Bradley M. Peterson, Joseph C. Shields, & T. J. Turner.* 599, 933 (2003)

Stellar Orbits and the Interstellar Gas Temperature in Elliptical Galaxies. *William G. Mathews & Fabrizio Brighenti.* 599, 992 (2003)

Month-Timescale Optical Variability in the M87 Jet. *Eric S. Perlman, D. E. Harris, John A. Biretta, William B. Sparks, & F. Duccio Macchetto.* 599, L65 (2003)

GALAXIES: BL LACERTAE OBJECTS: GENERAL

The Black Hole Masses and Host Galaxies of BL Lacertae Objects. *Aaron J. Barth, Luis C. Ho, & Wallace L. W. Sargent.* 583, 134 (2003)

What Types of Jets Does Nature Make? A New Population of Radio Quasars. *Paolo Padovani, Eric S. Perlman, Hermine Landt, Paolo Giommi, & Matteo Perri.* 588, 128 (2003)

The Jet-Disk Connection and Blazar Unification. *Laura Maraschi & Fabrizio Tavecchio.* 593, 667 (2003)

On the Cross-Correlation between the Arrival Direction of Ultra–High-Energy Cosmic Rays, BL Lacertae Objects, and EGRET Detections: A New Way to Identify EGRET Sources? *Diego F. Torres, Stephen Reucroft, Olaf Reimer, & Luis A. Anchordoqui.* 595, L13 (2003)

Black Hole Masses and the Fundamental Plane of BL Lacertae Objects. *R. Falomo, J. K. Kotilainen, N. Carangelo, & A. Treves.* 595, 624 (2003)

The Nuclear Spectral Energy Distribution of NGC 6251: A BL Lacertae Object in the Center of an FR I Radio Galaxy. *Marco Chiaberge, Roberto Gilli, Alessandro Capetti, & F. Duccio Macchetto.* 597, 166 (2003)

The *ROSAT* North Ecliptic Pole Survey: The Optical Identifications. *I. M. Gioia, J. P. Henry, C. R. Mullis, H. Böhringer, U. G. Briel, W. Voges, & J. P. Huchra.* 149, 29 (2003)

Jet Formation in BL Lacertae Objects with Different Accretion Models. *Xinwu Cao.* 599, 147 (2003)

Near-Infrared Observations of BL Lacertae Host Galaxies. *C. C. Cheung, C. Megan Urry, Riccardo Scarpa, & Mauro Giavalisco.* 599, 155 (2003)

Month-Timescale Optical Variability in the M87 Jet. *Eric S. Perlman, D. E. Harris, John A. Biretta, William B. Sparks, & F. Duccio Macchetto.* 599, L65 (2003)

GALAXIES: BL LACERTAE OBJECTS: INDIVIDUAL

Name: BL Lacertae

Spectral Slope Variability of BL Lacertae Objects in the Optical Band. *Fausto Vagnetti, Dario Trevese, & Roberto Nesci.* 590, 123 (2003)

Name: Markarian 421

Implications of Variability Patterns Observed in TeV Blazars on the Structure of the Inner Jet. *Chiharu Tanihata, Tadayuki Takahashi, Jun Kataoka, & Greg M. Medejski.* 584, 153 (2003)

Modeling the TeV Gamma-Ray Spectra of Two Low-Redshift Active Galactic Nuclei: Markarian 501 and Markarian 421. *A. Konopelko, A. Mastichiadis, J. Kirk, O. C. de Jager, & F. W. Stecker.* 597, 851 (2003)

Multi-TeV Gamma-Ray Flares from Markarian 421 in 2000 and 2001 Observed with the Tibet Air Shower Array. *M. Amenomori, S. Ayabe, S. W. Cui, Danzengluobu, L. K. Ding, X. H. Ding, C. F. Feng, Z. Y. Feng, X. Y. Gao, Q. X. Geng, H. W. Guo, H. H. He, M. He, K. Hibino, N. Hotta, Haibing Hu, H. B. Hu, J. Huang, Q. Huang, H. Y. Jia, F. Kajino, K. Kasahara, Y. Katayose, K. Kawata, Labaciren, G. M. Le, J. Y. Li, H. Lu, S. L. Lu, X. R. Meng, K. Mizutani, J. Mu, H. Nanjo, M. Nishizawa, M. Ohnishi, I. Ohta, T. Ouchi, S. Ozawa, J. R. Ren, T. Saito, M. Sakata, T. Sasaki, M. Shibata, A. Shiomi, T. Shirai, H. Sugimoto, K Taira, M. Takita, Y. H. Tan, N. Tateyama, S. Torii, H. Tsuchiya, S. Udo, T. Utsugi, B. S. Wang, H. Wang, X. Wang, Y. G. Wang, L. Xue, Y. Yamamoto, X. C. Yang, Z. H. Ye, G. C. Yu, A. F. Yuan, T. Yuda, H. M. Zhang, J. L. Zhang, N. J. Zhang, X. Y. Zhang, Y. Zhang, Zhaxisangzhu, & X. X. Zhou.* 598, 242 (2003)

Name: Markarian 501

Implications of Variability Patterns Observed in TeV Blazars on the Structure of the Inner Jet. *Chiharu Tanihata, Tadayuki Takahashi, Jun Kataoka, & Greg M. Medejski.* 584, 153 (2003)

Modeling the TeV Gamma-Ray Spectra of Two Low-Redshift Active Galactic Nuclei: Markarian 501 and Markarian 421. *A. Konopelko, A. Mastichiadis, J. Kirk, O. C. de Jager, & F. W. Stecker.* 597, 851 (2003)

Alphanumeric: 3C 66A

Spectral Slope Variability of BL Lacertae Objects in the Optical Band. *Fausto Vagnetti, Dario Trevese, & Roberto Nesci.* 590, 123 (2003)

Alphanumeric: 1ES 0033+595

Search for High-Energy Gamma Rays from an X-Ray–Selected Blazar Sample. *I. de la Calle Pérez, I. H. Bond, P. J. Boyle, S. M. Bradbury, J. H. Buckley, D. A. Carter-Lewis, O. Celik, W. Cui, C. Dowdall, C. Duke, A. Falcone, D. J. Fegan, S. J. Fegan, J. P. Finley, L. Fortson, J. A. Gaidos, K. Gibbs, S. Gammell, J. Hall, T. A. Hall, A. M. Hillas, J. Holder, D. Horan, M. Jordan, M. Kertzman, D. Kieda, J. Kildea, J. Knapp, K. Kosack, H. Krawczynski, F. Krennrich, S. LeBohec, E. T. Linton, J. Lloyd-Evans, P. Moriarty, D. Müller, T. N. Nagai, R. A. Ong, M. Page, R. Pallassini, D. Petry, B. Power-Mooney, J. Quinn, P. Rebillot, P. T. Reynolds, H. J. Rose, M. Schroedter, G. H. Sembroski, S. P. Swordy, V. V. Vassiliev, S. P. Wakely, G. Walker, & T. C. Weekes.* 599, 909 (2003)

Alphanumeric: 1ES 0120+340

Search for High-Energy Gamma Rays from an X-Ray–Selected Blazar Sample. *I. de la Calle Pérez, I. H. Bond, P. J. Boyle, S. M. Bradbury, J. H. Buckley, D. A. Carter-Lewis, O. Celik, W. Cui, C. Dowdall, C. Duke, A. Falcone, D. J. Fegan, S. J. Fegan, J. P. Finley, L. Fortson, J. A. Gaidos, K. Gibbs, S. Gammell, J. Hall, T. A. Hall, A. M. Hillas, J. Holder, D. Horan, M. Jordan, M. Kertzman, D. Kieda, J. Kildea, J. Knapp, K. Kosack, H. Krawczynski, F. Krennrich, S. LeBohec, E. T. Linton, J. Lloyd-Evans, P. Moriarty, D. Müller, T. N. Nagai, R. A. Ong, M. Page, R. Pallassini, D. Petry, B. Power-Mooney, J. Quinn, P. Rebillot, P. T. Reynolds, H. J. Rose, M. Schroedter, G. H. Sembroski, S. P. Swordy, V. V. Vassiliev, S. P. Wakely, G. Walker, & T. C. Weekes.* 599, 909 (2003)

Alphanumeric: 1ES 0229+200

Search for High-Energy Gamma Rays from an X-Ray–Selected Blazar Sample. *I. de la Calle Pérez, I. H. Bond, P. J. Boyle, S. M. Bradbury, J. H. Buckley, D. A. Carter-Lewis, O. Celik, W. Cui, C. Dowdall, C. Duke, A. Falcone, D. J. Fegan, S. J. Fegan, J. P. Finley, L. Fortson, J. A. Gaidos, K. Gibbs, S. Gammell, J. Hall, T. A. Hall, A. M. Hillas, J. Holder, D. Horan, M. Jordan, M. Kertzman, D. Kieda, J. Kildea, J. Knapp, K. Kosack, H. Krawczynski, F. Krennrich, S. LeBohec, E. T. Linton, J. Lloyd-Evans, P. Moriarty, D. Müller, T. N. Nagai, R. A. Ong, M. Page, R. Pallassini, D. Petry, B. Power-Mooney, J. Quinn, P. Rebillot, P. T. Reynolds, H. J. Rose, M. Schroedter, G. H. Sembroski, S. P. Swordy, V. V. Vassiliev, S. P. Wakely, G. Walker, & T. C. Weekes.* 599, 909 (2003)

Alphanumeric: 1ES 0806+524

Search for High-Energy Gamma Rays from an X-Ray–Selected Blazar Sample. *I. de la Calle Pérez, I. H. Bond, P. J. Boyle, S. M. Bradbury, J. H. Buckley, D. A. Carter-Lewis, O. Celik, W. Cui, C. Dowdall, C. Duke, A. Falcone, D. J. Fegan, S. J. Fegan, J. P. Finley, L. Fortson, J. A. Gaidos, K. Gibbs, S. Gammell, J. Hall, T. A. Hall, A. M. Hillas, J. Holder, D. Horan, M. Jordan, M. Kertzman, D. Kieda, J. Kildea, J. Knapp, K. Kosack, H. Krawczynski, F. Krennrich, S. LeBohec, E. T. Linton, J. Lloyd-Evans, P. Moriarty, D. Müller, T. N. Nagai, R. A. Ong, M. Page, R. Pallassini, D. Petry, B. Power-Mooney, J. Quinn, P. Rebillot, P. T. Reynolds, H. J. Rose, M. Schroedter, G. H. Sembroski, S. P. Swordy, V. V. Vassiliev, S. P. Wakely, G. Walker, & T. C. Weekes.* 599, 909 (2003)

Alphanumeric: 1ES 1426+42.8

Search for High-Energy Gamma Rays from an X-Ray–Selected Blazar Sample. *I. de la Calle Pérez, I. H. Bond, P. J. Boyle, S. M. Bradbury, J. H. Buckley, D. A. Carter-Lewis, O. Celik, W. Cui, C. Dowdall, C. Duke, A. Falcone, D. J. Fegan, S. J. Fegan, J. P. Finley, L. Fortson, J. A. Gaidos, K. Gibbs, S. Gammell, J. Hall, T. A. Hall, A. M. Hillas, J. Holder, D. Horan, M. Jordan, M. Kertzman, D. Kieda, J. Kildea, J. Knapp, K. Kosack, H. Krawczynski, F. Krennrich, S. LeBohec, E. T. Linton, J. Lloyd-Evans, P. Moriarty, D. Müller, T. N. Nagai, R. A. Ong, M. Page, R. Pallassini, D. Petry, B. Power-Mooney, J. Quinn, P. Rebillot, P. T. Reynolds, H. J. Rose, M. Schroedter, G. H. Sembroski, S. P. Swordy, V. V. Vassiliev, S. P. Wakely, G. Walker, & T. C. Weekes.* 599, 909 (2003)

Alphanumeric: 1ES 1553+113

Search for High-Energy Gamma Rays from an X-Ray–Selected Blazar Sample. *I. de la Calle Pérez, I. H. Bond, P. J. Boyle, S. M. Bradbury, J. H. Buckley, D. A. Carter-Lewis, O. Celik, W. Cui, C. Dowdall, C. Duke, A. Falcone, D. J. Fegan, S. J. Fegan, J. P. Finley, L. Fortson, J. A. Gaidos, K. Gibbs, S. Gammell, J. Hall, T. A. Hall, A. M. Hillas, J. Holder, D. Horan, M. Jordan, M. Kertzman, D. Kieda, J. Kildea, J. Knapp, K. Kosack, H. Krawczynski, F. Krennrich, S. LeBohec, E. T. Linton, J. Lloyd-Evans, P. Moriarty, D. Müller, T. N. Nagai, R. A. Ong, M. Page, R. Pallassini, D. Petry, B. Power-Mooney, J. Quinn, P. Rebillot, P. T. Reynolds, H. J. Rose, M. Schroedter, G. H. Sembroski, S. P. Swordy, V. V. Vassiliev, S. P. Wakely, G. Walker, & T. C. Weekes.* 599, 909 (2003)

Alphanumeric: 1ES 1959+650

Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope. *J. Holder, I. H. Bond, P. J. Boyle, S. M. Bradbury, J. H. Buckley, D. A. Carter-Lewis, W. Cui, C. Dowdall, C. Duke, I. de la Calle Perez, A. Falcone, D. J. Fegan, S. J. Fegan, J. P. Finley, L. Fortson, J. A. Gaidos, K. Gibbs, S. Gammell, J. Hall, T. A. Hall, A. M. Hillas, D. Horan, M. Jordan, M. Kertzman, D. Kieda, J. Kildea, J. Knapp, K. Kosack, H. Krawczynski, F. Krennrich, S. LeBohec, E. T. Linton, J. Lloyd-Evans, P. Moriarty, D. Müller, T. N. Nagai, R. Ong, M. Page, R. Pallassini, D. Petry, B. Power-Mooney, J. Quinn, P. Rebillot, P. T. Reynolds, H. J. Rose, M. Schroedter, G. H. Sembroski, S. P. Swordy, V. V. Vassiliev, S. P. Wakely, G. Walker, & T. C. Weekes.* 583, L9 (2003)

Search for High-Energy Gamma Rays from an X-Ray–Selected Blazar Sample. *I. de la Calle Pérez, I. H. Bond, P. J. Boyle, S. M. Bradbury, J. H. Buckley, D. A. Carter-Lewis, O. Celik, W. Cui, C. Dowdall, C. Duke, A. Falcone, D. J. Fegan, S. J. Fegan, J. P. Finley, L. Fortson, J. A. Gaidos, K. Gibbs, S. Gammell, J. Hall, T. A. Hall, A. M. Hillas, J. Holder, D. Horan, M. Jordan, M. Kertzman, D. Kieda, J. Kildea, J. Knapp, K. Kosack, H. Krawczynski, F. Krennrich, S. LeBohec, E. T. Linton, J. Lloyd-Evans, P. Moriarty, D. Müller, T. N. Nagai, R. A. Ong, M. Page, R. Pallassini, D. Petry, B. Power-Mooney, J. Quinn, P. Rebillot, P. T. Reynolds, H. J. Rose, M. Schroedter, G. H. Sembroski, S. P. Swordy, V. V. Vassiliev, S. P. Wakely, G. Walker, & T. C. Weekes.* 599, 909 (2003)

Alphanumeric: OJ 287

Spectral Slope Variability of BL Lacertae Objects in the Optical Band. *Fausto Vagnetti, Dario Trevese, & Roberto Nesci.* 590, 123 (2003)

Alphanumeric: ON 231

Spectral Slope Variability of BL Lacertae Objects in the Optical Band. *Fausto Vagnetti, Dario Trevese, & Roberto Nesci.* 590, 123 (2003)

Alphanumeric: OQ 530

Spectral Slope Variability of BL Lacertae Objects in the Optical Band. *Fausto Vagnetti, Dario Trevese, & Roberto Nesci.* 590, 123 (2003)

Alphanumeric: PKS 0422+004

Spectral Slope Variability of BL Lacertae Objects in the Optical Band. *Fausto Vagnetti, Dario Trevese, & Roberto Nesci.* 590, 123 (2003)

Alphanumeric: PKS 2155−304

Implications of Variability Patterns Observed in TeV Blazars on the Structure of the Inner Jet. *Chiharu Tanihata, Tadayuki Takahashi, Jun Kataoka, & Greg M. Medejski.* 584, 153 (2003)

Alphanumeric: RGB J0214+517

Search for High-Energy Gamma Rays from an X-Ray–Selected Blazar Sample. *I. de la Calle Pérez, I. H. Bond, P. J. Boyle, S. M. Bradbury, J. H. Buckley, D. A. Carter-Lewis, O. Celik, W. Cui, C. Dowdall, C. Duke, A. Falcone, D. J. Fegan, S. J. Fegan, J. P. Finley, L. Fortson, J. A. Gaidos, K. Gibbs, S. Gammell, J. Hall, T. A. Hall, A. M. Hillas, J. Holder, D. Horan, M. Jordan, M. Kertzman, D. Kieda, J. Kildea, J. Knapp, K. Kosack, H. Krawczynski, F. Krennrich, S. LeBohec, E. T. Linton, J. Lloyd-Evans, P. Moriarty, D. Müller, T. N. Nagai, R. A. Ong, M. Page, R. Pallassini, D. Petry, B. Power-Mooney, J. Quinn, P. Rebillot, P. T. Reynolds, H. J. Rose, M. Schroedter, G. H. Sembroski, S. P. Swordy, V. V. Vassiliev, S. P. Wakely, G. Walker, & T. C. Weekes.* 599, 909 (2003)

Alphanumeric: RGB J1117+202

Search for High-Energy Gamma Rays from an X-Ray–Selected Blazar Sample. *I. de la Calle Pérez, I. H. Bond, P. J. Boyle, S. M. Bradbury, J. H. Buckley, D. A. Carter-Lewis, O. Celik, W. Cui, C. Dowdall, C. Duke, A. Falcone, D. J. Fegan, S. J. Fegan, J. P. Finley, L. Fortson, J. A. Gaidos, K. Gibbs, S. Gammell, J. Hall, T. A. Hall, A. M. Hillas, J. Holder, D. Horan, M. Jordan, M. Kertzman, D. Kieda, J. Kildea, J. Knapp, K. Kosack, H. Krawczynski, F. Krennrich, S. LeBohec, E. T. Linton, J. Lloyd-Evans, P. Moriarty, D. Müller, T. N. Nagai, R. A. Ong, M. Page, R. Pallassini, D. Petry, B. Power-Mooney, J. Quinn, P. Rebillot, P. T. Reynolds, H. J. Rose, M. Schroedter, G. H. Sembroski, S. P. Swordy, V. V. Vassiliev, S. P. Wakely, G. Walker, & T. C. Weekes.* 599, 909 (2003)

Alphanumeric: RGB J1725+118

Search for High-Energy Gamma Rays from an X-Ray–Selected Blazar Sample. *I. de la Calle Pérez, I. H. Bond, P. J. Boyle, S. M. Bradbury, J. H. Buckley, D. A. Carter-Lewis, O. Celik, W. Cui, C. Dowdall, C. Duke, A. Falcone, D. J. Fegan, S. J. Fegan, J. P. Finley, L. Fortson, J. A. Gaidos, K. Gibbs, S. Gammell, J. Hall, T. A. Hall, A. M. Hillas, J. Holder, D. Horan, M. Jordan, M. Kertzman, D. Kieda, J. Kildea, J. Knapp, K. Kosack, H. Krawczynski, F. Krennrich, S. LeBohec, E. T. Linton, J. Lloyd-Evans, P. Moriarty, D. Müller, T. N. Nagai, R. A. Ong, M. Page, R. Pallassini, D. Petry, B. Power-Mooney, J. Quinn, P. Rebillot, P. T. Reynolds, H. J. Rose, M. Schroedter, G. H. Sembroski, S. P. Swordy, V. V. Vassiliev, S. P. Wakely, G. Walker, & T. C. Weekes.* 599, 909 (2003)

Alphanumeric: S5 0716+714

Spectral Slope Variability of BL Lacertae Objects in the Optical Band. *Fausto Vagnetti, Dario Trevese, & Roberto Nesci.* 590, 123 (2003)

Alphanumeric: S5 1803+78

Spectral Slope Variability of BL Lacertae Objects in the Optical Band. *Fausto Vagnetti, Dario Trevese, & Roberto Nesci.* 590, 123 (2003)

GALAXIES: BULGES

Does the Narrow [O III] λ5007 Line Reflect the Stellar Velocity Dispersion in Active Galactic Nuclei. *Todd A. Boroson.* 585, 647 (2003)

Strong Gravitational Lensing and Galactic Bulges. *Da-Ming Chen.* 587, L55 (2003)

The Near-Infrared Ca II Triplet–σ Relation for Bulges of Spiral Galaxies. *Jesús Falcón-Barroso, Reynier F. Peletier, Alexandre Vazdekis, & Marc Balcells.* 588, L17 (2003)

The Relation between Black Hole Mass, Bulge Mass, and Near-Infrared Luminosity. *Alessandro Marconi & Leslie K. Hunt.* 589, L21 (2003)

An Accretion Model for the Growth of the Central Black Hole Associated with Ionization Instability in Quasars. *Y. Lu, K. S. Cheng, & S. N. Zhang.* 590, 52 (2003)

GALAXIES: CLUSTERS: GENERAL

Tidal Effects in Clusters of Galaxies. *Oleg Y. Gnedin.* 582, 141 (2003)

Models of Galaxy Clusters with Thermal Conduction. *Nadia L. Zakamska & Ramesh Narayan.* 582, 162 (2003)

Cosmological Implications of the BIMA 30 GHz Sunyaev-Zeldovich Effect Galaxy Cluster Survey. *Yen-Ting Lin & Joseph J. Mohr.* 582, 574 (2003)

The Effect of Bandpass Uncertainities on Component Separation. *Sarah Church, Lloyd Knox, & Martin White.* 582, L63 (2003)

The Effect of Radiative Cooling on the Sunyaev-Zeldovich Cluster Counts and Angular Power Spectra: Analytic Treatment. *Yu-Ying Zhang & Xiang-Ping Wu.* 583, 529 (2003)

Sunyaev-Zeldovich Effect Imaging of MACS Galaxy Clusters at $z > 0.5$. *Samuel J. LaRoque, Marshall Joy, John E. Carlstrom, Harald Ebeling, Massimiliano Bonamente, Kyle S. Dawson, Alastair Edge, William L. Holzapfel, Amber D. Miller, Daisuke Nagai, Sandeep K. Patel, & Erik D. Reese.* 583, 559 (2003)

Nonthermal Radiation from Clusters of Galaxies: The Role of Merger Shocks in Particle Acceleration. *Stefano Gabici & Pasquale Blasi.* 583, 695 (2003)

Can Radiative Cooling and Nongravitational Heating Explain Simultaneously the Global X-Ray Properties of Clusters and the Unresolved Cosmic X-Ray Background? *Yan-Jie Xue & Xiang-Ping Wu.* 584, 34 (2003)

Nonthermal Emissions from Particles Accelerated by Turbulence in Clusters of Galaxies. *Yutaka Fujita, Motokazu Takizawa, & Craig L. Sarazin.* 584, 190 (2003)

Galaxy Star Formation as a Function of Environment in the Early Data Release of the Sloan Digital Sky Survey. *Percy L. Gomez, Robert C. Nichol, Christopher L. Miller, Michael L. Balogh, Tomotsugu Goto, Ann I. Zabludoff, A. Kathy Romer, Mariengela Bernardi, Ravi Sheth, Andrew M. Hopkins, Francisco J. Castander, Andrew J. Connolly, Donald P. Schneider, Jon Brinkmann, Don Q. Lamb, Mark SubbaRao, & Donald G. York.* 584, 210 (2003)

Probing Intracluster Magnetic Fields with Cosmic Microwave Background Polarization. *Hiroshi Ohno, Masahiro Takada, Klaus Dolag, Matthias Bartelmann, & Naoshi Sugiyama.* 584, 599 (2003)

Constraints on the Cluster Environments and Hot Spot Magnetic Field Strengths of the Radio Sources 3C 280 and 3C 254. *Megan Donahue, Ruth A. Daly, & Donald J. Horner.* 584, 643 (2003)

On the Incidence of Strong Gravitational Lensing by Clusters in the Las Campanas Distant Cluster Survey. *Dennis Zaritsky & Anthony H. Gonzalez.* 584, 691 (2003)

Sample Variance Considerations for Cluster Surveys. *Wayne Hu & Andrey V. Kravtsov.* 584, 702 (2003)

Soft X-Ray Excess Emission in Clusters of Galaxies Observed with *XMM-Newton*. *J. Nevalainen, R. Lieu, M. Bonamente, & D. Lumb.* 584, 716 (2003)

The Fundamental Plane at $z = 1.27$: First Calibration of the Mass Scale of Red Galaxies at Redshifts $z > 1$. *Pieter G. van Dokkum & S. A. Stanford.* 585, 78 (2003)

Gamma Rays from Intergalactic Shocks. *Uri Keshet, Eli Waxman, Abraham Loeb, Volker Springel, & Lars Hernquist.* 585, 128 (2003)

Modeling Intracluster Gas in Triaxial Dark Halos: An Analytic Approach. *Jounghun Lee & Yasushi Suto.* 585, 151 (2003)

Clusters of Galaxies in the Local Universe. *C. S. Kochanek, Martin White, J. Huchra, L. Macri, T. H. Jarrett, S. E. Schneider, & J. Mader.* 585, 161 (2003)

The Cluster Mass Function from Early Sloan Digital Sky Survey Data: Cosmological Implications. *Neta A. Bahcall, Feng Dong, Paul Bode, Rita Kim, James Annis, Timothy A. McKay, Sarah Hansen, Josh Schroeder, James Gunn, Jeremiah P. Ostriker, Marc Postman, Robert C. Nichol, Chris Miller, Tomotsugu Goto, Jon Brinkmann, Gillian R. Knapp, Don Q. Lamb, Donald P. Schneider, Michael S. Vogeley, & Donald G. York.* 585, 182 (2003)

The Mass Profile of Galaxy Clusters out to $\sim 2r_{200}$. *Andrea Biviano & Marisa Girardi.* 585, 205 (2003)

Correlations of Richness and Global Properties in Galaxy Clusters. *H. K. C. Yee & E. Ellingson.* 585, 215 (2003)

Chandra Observations of the Cooling Flow Cluster Abell 2052. *Elizabeth L. Blanton, Craig L. Sarazin, & Brian R. McNamara.* 585, 227 (2003)

The Overdensities of Galaxy Environments as a Function of Luminosity and Color. *David W. Hogg, Michael R. Blanton, Daniel J. Eisenstein, James E. Gunn, David J. Schlegel, Idit Zehavi, Neta A. Bahcall, Jon Brinkmann, Istvan Csabai, Donald P. Schneider, David H. Weinberg, & Donald G. York.* 585, L5 (2003)

Properties of the Brightest Cluster Galaxy and Its Host Cluster. *Haruyoshi Katayama, Kiyoshi Hayashida, Fumio Takahara, & Yutaka Fujita.* 585, 687 (2003)

Average Spectra of Massive Galaxies in the Sloan Digital Sky Survey. *Daniel J. Eisenstein, David W. Hogg, Masataka Fukugita, Osamu Nakamura, Mariangela Bernardi, Douglas P. Finkbeiner, David J. Schlegel, J. Brinkmann, Andrew J. Connolly, István Csabai, James E. Gunn, Željko Ivezić, Don Q. Lamb, Jon Loveday, Jeffrey A. Munn, Robert C. Nichol, Donald P. Schneider, Michael A. Strauss, Alex Szalay, & Don G. York.* 585, 694 (2003)

Cosmological Contraints from a Combined Analysis of the Cluster Mass Function and Microwave Background Anisotropies. *Alessandro Melchiorri, Paul Bode, Neta A. Bahcall, & Joseph Silk.* 586, L1 (2003)

An X-Ray Atlas of Groups of Galaxies. *John S. Mulchaey, David S. Davis, Richard F. Mushotzky, & David Burstein.* 145, 39 (2003)

Intracluster Planetary Nebulae in the Virgo Cluster. II. Imaging Catalog. *John J. Feldmeier, Robin Ciardullo, George H. Jacoby, & Patrick R. Durrell.* 145, 65 (2003)

Surveys of Galaxy Clusters with the Sunyaev-Zel'dovich Effect. *A. E. Schulz & Martin White.* 586, 723 (2003)

Determining Tangential Peculiar Velocities of Clusters of Galaxies Using Gravitational Lensing. *Sandor M. Molnar & Mark Birkinshaw.* 586, 731 (2003)

Cluster-Cluster Microlensing as a Probe of Intracluster Stars, MACHOs, and Remnants of the First-Generation Stars. *Tomonori Totani.* 586, 735 (2003)

Environmental Effects on Evolution of Cluster Galaxies in a Λ-dominated Cold Dark Matter Universe. *Takashi Okamoto & Masahiro Nagashima.* 587, 500 (2003)

Cold Fronts in Cold Dark Matter Clusters. *Daisuke Nagai & Andrey V. Kravtsov.* 587, 514 (2003)

Effect of Internal Flows on Sunyaev-Zeldovich Measurements of Cluster Peculiar Velocities. *Daisuke Nagai, Andrey V. Kravtsov, & Arthur Kosowsky.* 587, 524 (2003)

Feedback Heating in Cluster and Galactic Cooling Flows. *Fabrizio Brighenti & William G. Mathews.* 587, 580 (2003)

Chandra X-Ray Analysis of the Massive High-Redshift Galaxy Clusters Cl J1113.1−2615 and Cl J0152.7−1357. *B. J. Maughan, L. R. Jones, H. Ebeling, E. Perlman, P. Rosati, C. Frye, & C. R. Mullis.* 587, 589 (2003)

A Photometric and Spectroscopic Study of Dwarf and Giant Galaxies in the Coma Cluster. IV. The Luminosity Function. *Bahram Mobasher, Matthew Colless, Dave Carter, Bianca M. Poggianti, Terry J. Bridges, Kelly Kranz, Y. Komiyama, N. Kashikawa, M. Yagi, & S. Okamura.* 587, 605 (2003)

On the Relationship between Cooling Flows and Bubbles. *Ian G. McCarthy, Arif Babul, Neal Katz, & Michael L. Balogh.* 587, L75 (2003)

Cluster Morphology as a Test of Different Cosmological Models. *Tamon Suwa, Asao Habe, Kohji Yoshikawa, & Takashi Okamoto.* 588, 7 (2003)

Mass of Clusters in Simulations. *Andrea V. Macciò, Giuseppe Murante, & Silvio P. Bonometto.* 588, 35 (2003)

Lowering Infrared Cluster Magnetic Field Strengths: The Radio Galaxy Contributions. *Lawrence Rudnick & Katherine M. Blundell.* 588, 143 (2003)

EGRET Upper Limits on the High-Energy Gamma-Ray Emission of Galaxy Clusters. *O. Reimer, M. Pohl, P. Sreekumar, & J. R. Mattox.* 588, 155 (2003)

The Amplitude of Mass Fluctuations. *Paul Bode & Neta A. Bahcall.* 588, L1 (2003)

Structure of Dark Matter Halos from Hierarchical Clustering. II. Dependence of Cosmological Models in Cluster-sized Halos. *Toshiyuki Fukushige & Junichiro Makino.* 588, 674 (2003)

Evolution of the Cosmological Density Distribution Function from the Local Collapse Model. *Yasuhiro Ohta, Issha Kayo, & Atsushi Taruya.* 589, 1 (2003)

Correlation between Galaxies and Quasi-stellar Objects in the Sloan Digital Sky Survey: A Signal from Gravitational Lensing Magnification? *Enrique Gaztañaga.* 589, 82 (2003)

Chandra Discovery of the Intracluster Medium around UM 425 at a Redshift of 1.47. *Smita Mathur & Rik J. Williams.* 589, L1 (2003)

Dynamical Evolution of Galaxies in Clusters. *Oleg Y. Gnedin.* 589, 752 (2003)

Observed Non–Steady State Cooling and the Moderate Cluster Cooling Flow Model. *Noam Soker & Laurence P. David.* 589, 770 (2003)

Thermal Conduction in Magnetized Turbulent Gas. *Jungyeon Cho, A. Lazarian, Albert Honein, Bernard Knaepen, Stavros Kassinos, & Parviz Moin.* 589, L77 (2003)

Cosmological Constraints from the Evolution of the Cluster Baryon Mass Function at $z \sim 0.5$. *A. Vikhlinin, A. Voevodkin, C. R. Mullis, L. VanSpeybroeck, H. Quintana, B. R. McNamara, I. Gioia, A. Hornstrup, J. P. Henry, W. R. Forman, & C. Jones.* 590, 15 (2003)

Mass-Temperature Relation of Galaxy Clusters: Implication from the Observed Luminosity-Temperature Relation and X-Ray Temperature Function. *Mamoru Shimizu, Tetsu Kitayama, Shin Sasaki, & Tasushi Suto.* 590, 197 (2003)

High Resolution X-Ray Spectroscopic Constraints on Cooling-Flow Models for Clusters of Galaxies. *J. R. Peterson, S. M. Kahn, F. B. S. Paerels, J. S. Kaastra, T. Tamura, J. A. M. Bleeker, C. Ferrigno, & J. G. Jernigan.* 590, 207 (2003)

Cl 1358+62: Characterizing the Physical Properties of Cluster Galaxies at $z = 0.33$. *Kim-Vy H. Tran, Luc Simard, Garth Illingworth, & Marijn Franx.* 590, 238 (2003)

Spatial and Dynamical Biases in Velocity Statistics of Galaxies. *Kohji Yoshikawa, Y. P. Jing, & Gerhard Börner.* 590, 654 (2003)

Differences in Carbon and Nitrogen Abundances between Field and Cluster Early-Type Galaxies. *P. Sánchez-Blázquez, J. Gorgas, N. Cardiel, J. Cenarro, & J. J. González.* 590, L91 (2003)

Radio-selected Galaxis in Very Rich Clusters at $z \leq 0.25$. I. Multiwavelength Observations and Data Reduction Techniques. *G. E. Morrison, F. N. Owen, M. J. Ledlow, W. C. Keel, J. M. Hill, W. Voges, & T. Herter.* 146, 267 (2003)

Karhunen-Loève Estimation of the Power Spectrum Parameters from the Angular Distribution of Galaxies in Early Sloan Digital Sky Survey Data. *Alexander S. Szalay, Bhuvnesh Jain, Takahiko Matsubara, Ryan Scranton, Michael S. Vogeley, Andrew Connelly, Scott Dodelson, Daniel Eisenstein, Joshua A. Frieman, James E. Gunn, Lam Hui, David Johnston, Stephen Kent, Martin Kerscher, Jon Loveday, Avery Meiksin, Vijay Narayanan, Robert C. Nichol, Liam O'Connell, Adrian Pope, Roman Scoccimarro, Ravi K. Sheth, Albert Stebbins, Michael A. Strauss, István Szapudi, Max Tegmark, Idit Zehavi, James Annis, Neta Bahcall, Jon Brinkmann, István Csabai, Masataka Fukugita, Greg Hennessy, Zeljko Ivezic, Gillian R. Knapp, Peter A. Kunszt, Don Q. Lamb, Brian C. Lee, Robert H. Lupton, Jeffrey A. Munn, John Peoples, Jeffrey R. Pier, Constance Rockosi, David Schlegel, Christopher Stoughton, Douglas L. Tucker, Brian Yanny, & Donald G. York.* 591, 1 (2003)

Cluster Sunyaev-Zeldovich Effect Scaling Relations. *Ian G. McCarthy, Arif Babul, Gilbert P. Holder, & Michael L. Balogh.* 591, 515 (2003)

The Sunyaev-Zeldovich Effect Signature of Excess Entropy in Distant, Massive Clusters. *Ian G. McCarthy, Gilbert P. Holder, Arif Babul, & Michael L. Balogh.* 591, 526 (2003)

The Low-Frequency Radio Counterpart of the *XMM* Large-Scale Structure Survey. *A. S. Cohen, H. J. A. Roettgering, N. E. Kassim, W. D. Cotton, R. A. Perley, R. Wilman, P. Best, M. Pierre, M. Birkinshaw, M. Bremer, & A. Zanichelli.* 591, 640 (2003)

Weak Gravitational Lensing by a Sample of X-Ray–luminous Clusters of Galaxies. III. Serendipitous Weak Lensing Detections of Dark and Luminous Mass Concentrations. *Haakon Dahle, Kristian Pedersen, Per B. Lilje, Steve J. Maddox, & Nick Kaiser.* 591, 662 (2003)

Eccentricity Evolution in Simulated Galaxy Clusters. *Stephan N. Floor, Adrian L. Melott, Christopher J. Miller, & Greg L. Bryan.* 591, 741 (2003)

Near-Infrared Properties of Galaxy Clusters: Luminosity as a Binding Mass Predictor and the State of Cluster Baryons. *Yen-Ting Lin, Joseph J. Mohr, & S. A. Stanford.* 591, 749 (2003)

Galaxy Luminosity Functions from Deep Spectroscopic Samples of Rich Clusters. *Daniel Christlein & Ann I. Zabludoff.* 591, 764 (2003)

Direct Mapping of Massive Compact Objects in Extragalactic Dark Halos. *Kaiki Taro Inoue & Masashi Chiba.* 591, L83 (2003)

Prospects for the Determination of H_0 through Observation of Multiply Imaged Supernovae in Galaxy Cluster Fields. *Adam S. Bolton & Scott Burles.* 592, 17 (2003)

SMAUG: A New Technique for the Deprojection of Galaxy Clusters. *Fabio Pizzolato, Silvano Molendi, Simona Ghizzardi, & Sabrina De Grandi.* 592, 62 (2003)

The Multiphase Intracluster Medium in Galaxy Groups Probed by the Lyα Forest. *Hu Zhan, Li-Zhi Fang, & David Burstein.* 592, L1 (2003)

Peculiar Velocity Limits from Measurements of the Spectrum of the Sunyaev-Zeldovich Effect in Six Clusters of Galaxies. *B. A. Benson, S. E. Church, P. A. R. Ade, J. J. Bock, K. M. Ganga, J. R. Hinderks, P. D. Mauskopf, B. Philhour, M. C. Runyan, & K. L. Thompson.* 592, 674 (2003)

Tracing the Large-Scale Structure in the *Chandra* Deep Field South. *R. Gilli, A. Cimatti, E. Daddi, G. Hasinger, P. Rosati, G. Szokoly, P. Tozzi, J. Bergeron, S. Borgani, R. Giacconi, L. Kewley, V. Mainieri, M. Mignoli, M. Nonino, C. Norman, J. Wang, G. Zamorani, W. Zheng, & A. Zirm.* 592, 721 (2003)

Simulations of Buoyant Bubbles in Galaxy Clusters. *M. Brüggen.* 592, 839 (2003)

The Incidence of Strong-Lensing Clusters in the Red-Sequence Cluster Survey. *Michael D. Gladders, Henk Hoekstra, H. K. C. Yee, Patrick B. Hall, & L. Felipe Barrientos.* 593, 48 (2003)

On the Origin of Intracluster Entropy. *G. Mark Voit, Michael L. Balogh, Richard G. Bower, Cedric G. Lacey, & Greg L. Bryan.* 593, 272 (2003)

Equilibrium Models of Galaxy Clusters with Cooling, Heating, and Conduction. *M. Brüggen.* 593, 700 (2003)

Iron Abundance in the Intracluster Medium at High Redshift. *P. Tozzi, P. Rosati, S. Ettori, S. Borgani, V. Mainieri, & C. Norman.* 593, 705 (2003)

Measuring the Deviation from the Linear and Deterministic Bias through Cosmic Gravitational Lensing Effects. *Zuhui Fan.* 594, 33 (2003)

Role of Clusters of Galaxies in the Evolution of the Metal Budget in the Universe. *A. Finoguenov, A. Burkert, & H. Böhringer.* 594, 136 (2003)

Galaxy Alignments as a Probe of the Dynamical State of Clusters. *M. Plionis, C. Benoist, S. Maurogordato, C. Ferrari, & S. Basilakos.* 594, 144 (2003)

The 160 Square Degree *ROSAT* Survey: The Revised Catalog of 201 Clusters with Spectroscopic Redshifts. *C. R. Mullis, B. R. McNamara, H. Quintana, A. Vikhlinin, J. P. Henry, I. M. Gioia, A. Hornstrup, W. Forman, & C. Jones.* 594, 154 (2003)

Intracluster Stellar Population Properties from *N*-Body Cosmological Simulations. I. Constraints at $z = 0$. *Nicola R. Napolitano, Maurilio Pannella, Magda Arnaboldi, Ortwin Gerhard, J. Alfonso L. Aguerri, Kenneth C. Freeman, Massimo Capaccioli, Sebastiano Ghigna, Fabio Governato, Tom Quinn, & Joachim Stadel.* 594, 172 (2003)

Resolving Molecular Gas in the Central Galaxies of Cooling Flow Clusters. *Alastair C. Edge & David T. Frayer.* 594, L13 (2003)

Nonthermal Particles and Radiation Produced by Cluster Merger Shocks. *Robert C. Berrington & Charles D. Dermer.* 594, 709 (2003)

Signatures of Galaxy Formation in the Intracluster Medium. *G. Mark Voit & Trevor J. Ponman.* 594, L75 (2003)

Angular Clustering with Photometric Redshifts in the Sloan Digital Sky Survey: Bimodality in the Clustering Properties of Galaxies. *Tamás Budavári, Andrew J. Connolly, Alexander S. Szalay, István Szapudi, István Csabai, Ryan Scranton, Neta A. Bahcall, Jon Brinkmann, Daniel J. Eisenstein, Joshua A. Frieman, Masataka Fukugita, James E. Gunn, David Johnston, Stephen Kent, Jon N. Loveday, Robert H. Lupton, Max Tegmark, Aniruddha R. Thakar, Brian Yanny, Donald G. York, & Idit Zehavi.* 595, 59 (2003)

Rossi X-Ray Timing Explorer Observations of A2256. *Yoel Rephaeli & Duane Gruber.* 595, 137 (2003)

Chandra Obsrevations of the Central Region of A3112. *Motokazu Takizawa, Craig L. Sarazin, Elizabeth L. Blanton, & Greg B. Taylor.* 595, 142 (2003)

The Origin of Cores and Density Profiles of Gaseous Baryonic Structures. *Steen H. Hansen & Joachim Stadel.* 595, L37 (2003)

First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Tests of Gaussianity. *E. Komatsu, A. Kogut, M. R. Nolta, C. L. Bennett, M. Halpern, G. Hinshaw, N. Jarosik, M. Limon, S. S. Meyer, L. Page, D. N. Spergel, G. S. Tucker, L. Verde, E. Wollack, & E. L. Wright.* 148, 119 (2003)

Optimal Weighting Scheme in Redshift-Space Power Spectrum Analysis and a Prospect for Measuring the Cosmic Equation of State. *Kazuhiro Yamamoto.* 595, 577 (2003)

Gravitational Lensing by a Compound Population of Halos: Standard Models. *Li-Xin Li & Jeremiah P. Ostriker.* 595, 603 (2003)

Evolution of Cluster Elliptical Galaxies. *L. Felipe Barrientos & Simon J. Lilly.* 596, 129 (2003)

Circulation Flows: Cooling Flows with Bubble Return. *William G. Mathews, Fabrizio Brighenti, David A. Boute, & Aaron D. Lewis.* 596, 159 (2003)

A *Chandra* Study of the Complex Structure in the Core of 2A 0335+096. *P. Mazzotta, A. C. Edge, & M. Markevitch.* 596, 190 (2003)

Starbursts from the Strong Compression of Galactic Molecular Clouds due to the High Pressure of the Intracluster Medium. *Kenji Bekki & Warrick J. Couch.* 596, L13 (2003)

Thermal Instability in Clusters of Galaxies with Conduction. *Woong-Tae Kim & Ramesh Narayan.* 596, 889 (2003)

Turbulent Mixing in Clusters of Galaxies. *Woong-Tae Kim & Ramesh Narayan.* 596, L139 (2003)

A Merged Catalog of Clusters of Galaxies from Early Sloan Digital Sky Survey Data. *Neta A. Bahcall, Timothy A. McKay, James Annis, Rita S. J. Kim, Feng Dong, Sarah Hansen, Tomo Goto, James E. Gunn, Chris Miller, R. C. Nichol, Marc Postman, Don Schneider, Josh Schroeder, Wolfgang Voges, Jon Brinkmann, & Masataka Fukugita.* 148, 243 (2003)

The Environment of Active Galactic Nuclei in the Sloan Digital Sky Survey. *Christopher J. Miller, Robert C. Nichol, Percy L. Gómez, Andrew M. Hopkins, & Mariangela Bernardi.* 597, 142 (2003)

Chandra Observations of Point Sources in A2255. *David S. Davis, Neal A. Miller, & Richard F. Mushotzky.* 597, 202 (2003)

Weak Lensing Discovery and Tomography of a Cluster at $z = 0.68$. *D. Wittman, V. E. Margoniner, J. A. Tyson, J. G. Cohen, A. C. Becker, & I. P. Dell'Antonio.* 597, 218 (2003)

Mass and Redshift Dependence of Dark Halo Structure. *D. H. Zhao, Y. P. Jing, H. J. Mo, & G. Börner.* 597, L9 (2003)

Decaying Cold Dark Matter and the Evolution of the Cluster Abundance. *Masamune Oguri, Keitaro Takahashi, Hiroshi Ohno, & Kei Kotake.* 597, 645 (2003)

Studying Clusters with *Planck*. *Martin White.* 597, 650 (2003)

Are the Faraday Rotating Magnetic Fields Local to Intracluster Radio Galaxies? *Torsten A. Ensslin, Corina Vogt, T. E. Clarke, & Greg B. Taylor.* 597, 870 (2003)

Sunyaev-Zel'dovich Effects from Quasars in Galaxies and Groups. *A. Lapi, A. Cavaliere, & G. De Zotti.* 597, L93 (2003)

The *K*-selected Butcher-Oemler Effect. *Roberto De Propris, S. A. Stanford, Peter R. Eisenhardt, & Mark Dickinson.* 598, 20 (2003)

Optical Identification of the *ASCA* Lynx Deep Survey: An Association of Quasi-Stellar Objects and a Supercluster at $z = 1.3$? *Kouji Ohta, Masayuki Akiyama, Yoshihiro Ueda, Toru Yamada, Kouichiro Nakanishi, Gavin B. Dalton, Yashushi Ogasaka, Tsuneo Kii, & Kiyoshi Hayashida.* 598, 210 (2003)

The Clustering Dipole of the Local Universe from the Two Micron All Sky Survey. *Ariyeh H. Maller, Daniel H. McIntosh, Neal Katz, & Martin D. Weinberg.* 598, L1 (2003)

The *ROSAT* North Ecliptic Pole Survey: The Optical Identifications. *I. M. Gioia, J. P. Henry, C. R. Mullis, H. Böhringer, U. G. Briel, W. Voges, & J. P. Huchra.* 149, 29 (2003)

The Effects of Relativistic Corrections on Cosmological Parameter Estimations from Sunyaev-Zel'dovich Effect Cluster Surveys. *Zuhui Fan & Yanling Wu.* 598, 713 (2003)

Arc Statistics in Triaxial Dark Matter Halos: Testing the Collisionless Cold Dark Matter Paradigm. *Masamune Oguri, Jounghun Lee, & Yasasushi Suto.* 599, 7 (2003)

Modeling Dynamical Dark Energy. *R. Mainini, A. V. Macciò, S. A. Bonometto, & A. Klypin.* 599, 24 (2003)

Halo Properties in Models with Dynamical Dark Energy. *A. Klypin, A. V. Macciò, R. Mainini, & S. A. Bonometto.* 599, 31 (2003)

The Richness-dependent Cluster Correlation Function: Early Sloan Digital Sky Survey Data. *Neta A. Bahcall, Feng Dong, Lei Hao, Paul Bode, Jim Annis, James E. Gunn, & Donald P. Schneider.* 599, 814 (2003)

The Nature of E+A Galaxies in Intermediate Redshift Clusters. *Kim-Vy H. Tran, Marijn Franx, Garth Illingworth, Daniel D. Kelson, & Pieter van Dokkum.* 599, 865 (2003)

Spontaneous Generation of the Magnetic Field and Suppression of the Heat Conduction in Cold Fronts. *Nobuhiro Okabe & Makoto Hattori.* 599, 964 (2003)

Stellar Orbits and the Interstellar Gas Temperature in Elliptical Galaxies. *William G. Mathews & Fabrizio Brighenti.* 599, 992 (2003)

A Unique Small-Scale Gravitational Arc in A1201. *Alastair C. Edge, Graham P. Smith, David J. Sand, Tommaso Treu, Harald Ebeling, Steven W. Allen, & Pieter G. van Dokkum.* 599, L69 (2003)

ACBAR: The Arcminute Cosmology Bolometer Array Receiver. *M. C. Runyan, P. A. R. Ade, R. S. Bhatia, J. J. Bock, M. D. Daub, J. H. Goldstein, C. V. Haynes, W. L. Holzapfel, C. L. Kuo, A. E. Lange, J. Leong, M. Lueker, M. Newcomb, J. B. Peterson, C. Reichardt, J. Ruhl, G. Sirbi, E. Torbet, C. Tucker, A. D. Turner, & D. Woolsey.* 149, 265 (2003)

GALAXIES: CLUSTERS: INDIVIDUAL

NGC Number: NGC 1866

The Distance to the Large Magellanic Cloud Cluster NGC 1866 and the Surrounding Field. *M. Salaris, S. Percival, E. Brocato, G. Raimondo, & A. R. Walker.* 588, 801 (2003)

Name: Abell 496

Chandra Analysis of A496: No Chemical Gradients across Cold Fronts. *Renato Dupke & Raymond E. White III.* 583, L13 (2003)

Name: Abell 851

The Star-forming Dwarf Galaxy Populations of two $z \sim 0.4$ Clusters: MS 1512.4+3647 and A851. *Jennifer M. Lotz, Crystal L. Martin, & Henry C. Ferguson.* 596, 143 (2003)

Name: Abell 2052

Chandra Observations of the Cooling Flow Cluster Abell 2052. *Elizabeth L. Blanton, Craig L. Sarazin, & Brian R. McNamara.* 585, 227 (2003)

Name: Abell 2255

Multicolor Photometry of the Galaxies in A2255 by the Beijing-Arizona-Taiwan-Connecticut Survey and Sloan Digital Sky Survey. *Qirong Yaun, Xu Zhou, & Zhaoji Jiang.* 149, 53 (2003)

Name: Abell 3558

Spatial Distributions of A3558 in the Core Region of the Shapley Supercluster. *F. Akimoto, K. Kondou, A. Furuzawa, Y. Tawara, & K. Yamashita.* 596, 170 (2003)

Name: Coma

Soft X-Ray Excess Emission in Clusters of Galaxies Observed with *XMM-Newton*. *J. Nevalainen, R. Lieu, M. Bonamente, & D. Lumb.* 584, 716 (2003)

Intergalactic Globular Clusters and the Faint End of the Galaxy Number Counts in A1656 (Coma). *A. Marín-Franch & A. Aparicio.* 585, 714 (2003)

A Photometric and Spectroscopic Study of Dwarf and Giant Galaxies in the Coma Cluster. IV. The Luminosity Function. *Bahram Mobasher, Matthew Colless, Dave Carter, Bianca M. Poggianti, Terry J. Bridges, Kelly Kranz, Y. Komiyama, N. Kashikawa, M. Yagi, & S. Okamura.* 587, 605 (2003)

Diagnostic Signatures of Radio and Hard X-Ray Emission on Particle Acceleration Processes in the Coma Cluster. *Ping-Hung Kuo, Chorng-Yuan Hwang, & Wing-Huen Ip.* 594, 732 (2003)

Name: Hercules

Cluster-Cluster Microlensing as a Probe of Intracluster Stars, MACHOs, and Remnants of the First-Generation Stars. *Tomonori Totani.* 586, 735 (2003)

Name: Perseus

XMM-Newton Observations of the Perseus Cluster. I. The Temperature and Surface Brightness Structure. *E. Churazov, W. Forman, C. Jones, & H. Boehringer.* 590, 225 (2003)

Name: Virgo

Intracluster Planetary Nebulae in the Virgo Cluster. II. Imaging Catalog. *John J. Feldmeier, Robin Ciardullo, George H. Jacoby, & Patrick R. Durrell.* 145, 65 (2003)

Spectroscopy of Dwarf Galaxies in the Virgo Cluster. I. Data, Chemical Abundances, and Ionization Structure. *José M. Vílchez & Jorge Iglesias-Páramo.* 145, 225 (2003)

Galaxy Populations and Evolution in Clusters. IV. Deep H I Observations of Dwarf Elliptical Galaxies in the Virgo Cluster. *Christopher J. Conselice,*

Karen O'Neil, John S. Gallagher, & Rosemary F. G. Wyse. 591, 167 (2003)

Dynamics of the Globular Cluster System Associated with M49 (NGC 4472): Cluster Orbital Properties and the Distribution of Dark Matter. *Patrick Côté, Dean E. McLaughlin, Judith G. Cohen, & John P. Blakeslee.* 591, 850 (2003)

Alphanumeric: A85

Galaxy Luminosity Functions from Deep Spectroscopic Samples of Rich Clusters. *Daniel Christlein & Ann I. Zabludoff.* 591, 764 (2003)

Alphanumeric: A209

On the Invariant Distribution of Galaxies in the r_e-$\langle\mu\rangle_e$ Plane out to $z = 0.64$. *F. La Barbera, G. Busarello, P. Merluzzi, M. Massarotti, & M. Capaccioli.* 595, 127 (2003)

Alphanumeric: A478

Chandra Observations of the Galaxy Cluster A478: The Interaction of Hot Gas and Radio Plasma in the Core, and an Improved Determination of the Compton y-Parameter. *M. Sun, C. Jones, S. S. Murray, S. W. Allen, A. C. Fabian, & A. C. Edge.* 587, 619 (2003)

Alphanumeric: A496

Galaxy Luminosity Functions from Deep Spectroscopic Samples of Rich Clusters. *Daniel Christlein & Ann I. Zabludoff.* 591, 764 (2003)

Alphanumeric: A754

Chandra Temperature Map of A754 and Constraints on Thermal Conduction. *M. Markevitch, P. Mazzotta, A. Vikhlinin, D. Burke, Y. Butt, L. David, H. Donnelly, W. R. Forman, D. Harris, D.-W. Kim, S. Virani, & J. Vrtilek.* 586, L19 (2003)

Galaxy Luminosity Functions from Deep Spectroscopic Samples of Rich Clusters. *Daniel Christlein & Ann I. Zabludoff.* 591, 764 (2003)

Alphanumeric: A851

ERO R1 in the Field of Cl 0939+4713: Evidence for an S0-Like Galaxy at $z \sim 1.5$. *Masanori Iye, Kazuhiro Shimasaku, Satoshi Miyazaki, Chris Simpson, Masatoshi Imanishi, Nabunari Kashikawa, Takayuki Kodama, Masashi Chiba, Yoshihiko Saito, Miwa Goto, Fumihide Iwamuro, Naoto Kobayashi, Sadanori Okamura, & Hiroshi Terada.* 590, 770 (2003)

Alphanumeric: A1060

Galaxy Luminosity Functions from Deep Spectroscopic Samples of Rich Clusters. *Daniel Christlein & Ann I. Zabludoff.* 591, 764 (2003)

Alphanumeric: A1367

Capturing a Star Formation Burst in Galaxies Infalling onto the Cluster A1367. *G. Gavazzi, L. Cortese, A. Boselli, J. Iglesias-Paramo, J. M. Vilchez, & L. Carrasco.* 597, 210 (2003)

Alphanumeric: A1631

Galaxy Luminosity Functions from Deep Spectroscopic Samples of Rich Clusters. *Daniel Christlein & Ann I. Zabludoff.* 591, 764 (2003)

Alphanumeric: A1656

Triple Experiment Spectrum of the Sunyaev-Zel'dovich Effect in the Coma Cluster: H_0. *E. S. Battistelli, M. De Petris, L. Lamagna, G. Luzzi, R. Maoli, A. Melchiorri, F. Melchiorri, A. Orlando, E. Palladino, G. Savini, Y. Rephaeli, M. Shimon, M. Signore, & S. Colafrancesco.* 598, L75 (2003)

Alphanumeric: A1795

Soft X-Ray Excess Emission in Clusters of Galaxies Observed with *XMM-Newton*. *J. Nevalainen, R. Lieu, M. Bonamente, & D. Lumb.* 584, 716 (2003)

SMAUG: A New Technique for the Deprojection of Galaxy Clusters. *Fabio Pizzolato, Silvano Molendi, Simona Ghizzardi, & Sabrina De Grandi.* 592, 62 (2003)

Alphanumeric: A2029

Chandra Observations of A2029: The Dark Matter Profile Down to below $0.01r_{\rm vir}$ in an Unusually Relaxed Cluster. *Aaron D. Lewis, David A. Buote, & John T. Stocke.* 586, 135 (2003)

Alphanumeric: A2034

Chandra Observation of the Merging Cluster A2034. *Joshua C. Kempner, Craig L. Sarazin, & Maxim Markevitch.* 593, 291 (2003)

Alphanumeric: A2255

Chandra Observations of Point Sources in A2255. *David S. Davis, Neal A. Miller, & Richard F. Mushotzky.* 597, 202 (2003)

Alphanumeric: A2256

Rossi X-Ray Timing Explorer Observations of A2256. *Yoel Rephaeli & Duane Gruber.* 595, 137 (2003)

Alphanumeric: A3112

Soft X-Ray Excess Emission in Clusters of Galaxies Observed with *XMM-Newton*. *J. Nevalainen, R. Lieu, M. Bonamente, & D. Lumb.* 584, 716 (2003)

Chandra Obsrevations of the Central Region of A3112. *Motokazu Takizawa, Craig L. Sarazin, Elizabeth L. Blanton, & Greg B. Taylor.* 595, 142 (2003)

Alphanumeric: A3266

Galaxy Luminosity Functions from Deep Spectroscopic Samples of Rich Clusters. *Daniel Christlein & Ann I. Zabludoff.* 591, 764 (2003)

Alphanumeric: 2A 0335+096

A *Chandra* Study of the Complex Structure in the Core of 2A 0335+096. *P. Mazzotta, A. C. Edge, & M. Markevitch.* 596, 190 (2003)

Alphanumeric: AC 118

Age, Metallicity, and Star Formation History of Cluster Galaxies at $z \sim 0.3$. *P. Merluzzi, F. La Barbera, M. Massarotti, G. Busarello, & M. Capaccioli.* 589, 147 (2003)

On the Invariant Distribution of Galaxies in the r_e-$\langle\mu\rangle_e$ Plane out to $z = 0.64$. *F. La Barbera, G. Busarello, P. Merluzzi, M. Massarotti, & M. Capaccioli.* 595, 127 (2003)

Alphanumeric: AWM 7

Chandra Observation of the Core of the Galaxy Cluster AWM 7. *T. Furusho, N. Y. Yamasaki, & T. Ohashi.* 596, 181 (2003)

STARS: INDIVIDUAL

Constellation Name: V821 Arae

Dynamical Evidence for a Black Hole in GX 339−4. *R. I. Hynes, D. Steeghs, J. Casares, P. A. Charles, & K. O'Brien.* 583, L95 (2003)

GALAXIES: CLUSTERS: INDIVIDUAL

Alphanumeric: Cl 0024+1654

A Wide-Field *Hubble Space Telescope* Study of the Cluster Cl 0024+16 at $z = 0.4$. I. Morphological Distributions to 5 Mpc Radius. *Tommaso Treu, Richard S. Ellis, Jean-Paul Kneib, Alan Dressler, Ian Smail, Oliver Czoske, Augustus Oemler, & Priyamvada Natarajan.* 591, 53 (2003)

A Wide-Field *Hubble Space Telescope* Study of the Cluster Cl 0024+1654 at $z = 0.4$. II. The Cluster Mass Distribution. *Jean-Paul Kneib, Patrick Hudelot, Richard S. Ellis, Tommaso Treu, Graham Smith, Phil Marshall, Oliver Czoske, Ian Smail, & Priyamvada Natarajan.* 598, 804 (2003)

Alphanumeric: Cl J0152.7−1357

Chandra X-Ray Analysis of the Massive High-Redshift Galaxy Clusters Cl J1113.1−2615 and Cl J0152.7−1357. *B. J. Maughan, L. R. Jones, H. Ebeling, E. Perlman, P. Rosati, C. Frye, & C. R. Mullis.* 587, 589 (2003)

Alphanumeric: Cl J1113.1−2615

Chandra X-Ray Analysis of the Massive High-Redshift Galaxy Clusters Cl J1113.1−2615 and Cl J0152.7−1357. *B. J. Maughan, L. R. Jones, H. Ebeling, E. Perlman, P. Rosati, C. Frye, & C. R. Mullis.* 587, 589 (2003)

ALphanumeric: EIS 0048−2942

On the Invariant Distribution of Galaxies in the r_e-$\langle\mu\rangle_e$ Plane out to $z = 0.64$. *F. La Barbera, G. Busarello, P. Merluzzi, M. Massarotti, & M. Capaccioli.* 595, 127 (2003)

Alphanumeric: IC 1262

A *BeppoSAX* Observation of the IC 1262 Galaxy Cluster. *Daniel S. Hudson, Mark J. Henriksen, & Sergio Colafrancesco.* 583, 706 (2003)

Diffuse Nonthermal X-Ray Emission: Evidence of Cosmic-Ray Acceleration at the Shock Front in IC 1262. *Daniel S. Hudson & Mark J. Henriksen.* 595, L1 (2003)

Alphanumeric: MS 0451.6−0305

The Mass, Baryonic Fraction, and X-Ray Temperature of the Luminous, High-Redshift Cluster of Galaxies MS 0451.6−0305. *Megan Donahue, Jessica A. Gaskin, Sandeep K. Patel, Marshall Joy, Doug Clowe, & John P. Hughes.* 598, 190 (2003)

Alphanumeric: MS 1008−1224

Internal Kinematics of Spiral Galaxies in Distant Clusters. *B. L. Ziegler, A. Böhm, K. Jäger, J. Heidt, & C. Möllenhoff.* 598, L87 (2003)

Alphanumeric: MS 1054−03

The Topology of a Weak Lensing Field in the Neighborhood of MS 1054−03. *Jun'ichi Sato, Keiichi Umetsu, Toshifumi Futamase, & Toru Yamada.* 582, L67 (2003)

Alphanumeric: MS 1512.4+3647

The Star-forming Dwarf Galaxy Populations of two $z \sim 0.4$ Clusters: MS 1512.4+3647 and A851. *Jennifer M. Lotz, Crystal L. Martin, & Henry C. Ferguson.* 596, 143 (2003)

Alphanumeric: RDCS 1252−2927

Advanced Camera for Surveys Photometry of the Cluster RDCS 1252.9−2927: The Color-Magnitude Relation at $z = 1.24$. *John P. Blakeslee, Marijn Franx, Marc Postman, Piero Rosati, Brad P. Holden, G. D. Illingworth, H. C. Ford, N. J. G. Cross, Caryl Gronwall, N. Benítez, R. J. Bouwens, T. J. Broadhurst, M. Clampin, R. Demarco, D. A. Golimowski, G. F. Hartig, L. Infante, A. R. Martel, G. K. Miley, F. Menanteau, G. R. Meurer, M. Sirianni, & R. L. White.* 596, L143 (2003)

GALAXIES: COOLING FLOWS

Models of Galaxy Clusters with Thermal Conduction. *Nadia L. Zakamska & Ramesh Narayan.* 582, 162 (2003)

Far-Ultraviolet Emission from Elliptical Galaxies at $z = 0.33$. *Thomas M. Brown, Henry C. Ferguson, Ed Smith, Charles W. Bowers, Randy A. Kimble, Alvio Renzini, & R. Michael Rich.* 584, L69 (2003)

Chandra Observations of the Cooling Flow Cluster Abell 2052. *Elizabeth L. Blanton, Craig L. Sarazin, & Brian R. McNamara.* 585, 227 (2003)

Feedback Heating in Cluster and Galactic Cooling Flows. *Fabrizio Brighenti & William G. Mathews.* 587, 580 (2003)

On the Relationship between Cooling Flows and Bubbles. *Ian G. McCarthy, Arif Babul, Neal Katz, & Michael L. Balogh.* 587, L75 (2003)

Observed Non–Steady State Cooling and the Moderate Cluster Cooling Flow Model. *Noam Soker & Laurence P. David.* 589, 770 (2003)

High Resolution X-Ray Spectroscopic Constraints on Cooling-Flow Models for Clusters of Galaxies. *J. R. Peterson, S. M. Kahn, F. B. S. Paerels, J. S. Kaastra, T. Tamura, J. A. M. Bleeker, C. Ferrigno, & J. G. Jernigan.* 590, 207 (2003)

XMM-Newton Observations of the Perseus Cluster. I. The Temperature and Surface Brightness Structure. *E. Churazov, W. Forman, C. Jones, & H. Boehringer.* 590, 225 (2003)

Rapid Cooling of Dusty Gas in Elliptical Galaxies. *William G. Mathews & Fabrizio Brighenti.* 590, L5 (2003)

SMAUG: A New Technique for the Deprojection of Galaxy Clusters. *Fabio Pizzolato, Silvano Molendi, Simona Ghizzardi, & Sabrina De Grandi.* 592, 62 (2003)

Simulations of Buoyant Bubbles in Galaxy Clusters. *M. Brüggen.* 592, 839 (2003)

Chandra Observation of the Merging Cluster A2034. *Joshua C. Kempner, Craig L. Sarazin, & Maxim Markevitch.* 593, 291 (2003)

Equilibrium Models of Galaxy Clusters with Cooling, Heating, and Conduction. *M. Brüggen.* 593, 700 (2003)

Resolving Molecular Gas in the Central Galaxies of Cooling Flow Clusters. *Alastair C. Edge & David T. Frayer.* 594, L13 (2003)

XMM-Newton and *Chandra* Observations of the Galaxy Group NGC 5044. I. Evidence for Limited Multiphase Hot Gas. *David A. Buote, Aaron D. Lewis, Fabrizio Brighenti, & William G. Mathews.* 594, 741 (2003)

Chandra Obsrevations of the Central Region of A3112. *Motokazu Takizawa, Craig L. Sarazin, Elizabeth L. Blanton, & Greg B. Taylor.* 595, 142 (2003)

XMM-Newton and *Chandra* Observations of the Galaxy Group NGC 5044. II. Metal Abundances and Supernova Fraction. *David A. Buote, Aaron D. Lewis, Fabrizio Brighenti, & William G. Mathews.* 595, 151 (2003)

Circulation Flows: Cooling Flows with Bubble Return. *William G. Mathews, Fabrizio Brighenti, David A. Boute, & Aaron D. Lewis.* 596, 159 (2003)

A *Chandra* Study of the Complex Structure in the Core of 2A 0335+096. *P. Mazzotta, A. C. Edge, & M. Markevitch.* 596, 190 (2003)

Thermal Instability in Clusters of Galaxies with Conduction. *Woong-Tae Kim & Ramesh Narayan.* 596, 889 (2003)

Turbulent Mixing in Clusters of Galaxies. *Woong-Tae Kim & Ramesh Narayan.* 596, L139 (2003)

What Shapes the Luminosity Function of Galaxies? *A. J. Benson, R. G. Bower, C. S. Frenk, C. G. Lacey, C. M. Baugh, & S. Cole.* 599, 38 (2003)

Stellar Orbits and the Interstellar Gas Temperature in Elliptical Galaxies. *William G. Mathews & Fabrizio Brighenti.* 599, 992 (2003)

GALAXIES: DISTANCES AND REDSHIFTS

The Spectroscopic Variability of GRB 021004. *T. Matheson, P. M. Garnavich, C. Foltz, S. West, G. Williams, E. Falco, M. L. Calkins, F. J. Castander, E. Gawiser, S. Jha, D. Bersier, & K. Z. Stanek.* 582, L5 (2003)

A New Extragalactic Distance Determination Method Using Flux-weighted Gravity of Late B and Early A Supergiants. *Rolf P. Kudritzki, Fabio Bresolin, & Nobert Przybilla.* 582, L83 (2003)

The Redshift of the Lensed Object in the Einstein Ring B0218+357. *Judith G. Cohen, Charles R. Lawrence, & Roger D. Blandford.* 583, 67 (2003)

Measuring Distances and Probing the Unresolved Stellar Populations of Galaxies Using Infrared Surface Brightness Fluctuations. *Joseph B. Jensen, John L. Tonry, Brian J. Barris, Rodger I. Thompson, Michael C. Liu, Marcia J. Rieke, Edward A. Ajhar, & John P. Blakeslee.* 583, 712 (2003)

Very High Redshift X-Ray–selected Active Galactic Nuclei in the *Chandra* Deep Field–North. *A. J. Barger, L. L. Cowie, P. Capak, D. M. Alexander, F. E. Bauer, W. N. Brandt, G. P. Garmire, & A. E. Hornschemeier.* 584, L61 (2003)

Reconstructing Cepheid Light Curve with Fourier Techniques. I. The Fourier Expansion and Interrelations. *Chow-Choong Ngeow, Shashi M. Kanbur, Sergei Nikolaev, Nial R. Tanvir, & Martin A. Hendry.* 586, 959 (2003)

The Hα Luminosity Function and Star Formation Rate at $z \approx 0.24$ Based on Subaru Deep Imaging Data. *Shinobu S. Fujita, Masaru Ajiki, Yasuhiro Shioya, Tohru Nagao, Takashi Murayama, Yoshiaki Taniguchi, Kazuyoshi Umeda, Sanae Yamada, Masafumi Yagi, Sadonori Okamura, & Yutaka Komiyama.* 586, L115 (2003)

A European Southern Obseratory Very Large Telescope Survey of Near-Infrared ($Z \leq 25$) Selected Galaxies at Redshifts $4.5 < z < 6$: Constraining the Cosmic Star Formation Rate near the Reionization Epoch. *A. Fontana, F. Poli, N. Menci, M. Nonino, E. Giallongo, S. Cristiani, & S. D'Odorico.* 587, 544 (2003)

A Photometric and Spectroscopic Study of Dwarf and Giant Galaxies in the Coma Cluster. IV. The Luminosity Function. *Bahram Mobasher, Matthew Colless, Dave Carter, Bianca M. Poggianti, Terry J. Bridges, Kelly Kranz, Y. Komiyama, N. Kashikawa, M. Yagi, & S. Okamura.* 587, 605 (2003)

The Extinction and Distance of Maffei 1. *Robin L. Fingerhut, Marshall L. McCall, Michael De Robertis, Robin L. Kingsburgh, Michael Komljenovic, Henry Lee, & Ronald J. Buta.* 587, 672 (2003)

Photometric Redshift Using the Far-Infrared Spectral Energy Distribution. *T. Wiklind.* 588, 736 (2003)

The Distance to the Large Magellanic Cloud Cluster NGC 1866 and the Surrounding Field. *M. Salaris, S. Percival, E. Brocato, G. Raimondo, & A. R. Walker.* 588, 801 (2003)

The Cepheid Distance to NGC 5236 (M83) with the ESO Very Large Telescope. *Frank Thim, G. A. Tammann, A. Saha, A. Dolphin, Allan Sandage, E. Tolstoy, & Lukas Labhardt.* 590, 256 (2003)

SN 1979C VLBI: 22 Years of Almost Free Expansion. *Norbert Bartel & Michael F. Bietenholz.* 591, 301 (2003)

Spectroscopic Discovery of the Supernova 2003dh Associated with GRB 030329. *K. Z. Stanek, T. Matheson, P. M. Garnavich, P. Martini, P. Berlind, N. Caldwell, P. Challis, W. R. Brown, R. Schild, K. Krisciunas, M. L. Calkins, J. C. Lee, N. Hathi, R. A. Jansen, R. Windhorst, L. Echevarria, D. J. Eisenstein, B. Pindor, E. W. Olszewski, P. Harding, S. T. Holland, & D. Bersier.* 591, L17 (2003)

High-Redshift Candidates and the Nature of Small Galaxies in the Hubble Deep Field. *Lisa J. Storrie-Lombardi, Ray J. Weymann, & Rodger I. Thompson.* 591, 623 (2003)

Reanalysis of Very Large Telescope Data for M83 with Image Subtraction—Ninefold Increase in Number of Cepheids. *A. Z. Bonanos & K. Z. Stanek.* 591, L111 (2003)

The Evolution of the Galaxy Luminosity Function in the Rest-Frame Blue Band up to $z = 3.5$. *F. Poli, E. Giallongo, A. Fontana, N. Menci, G. Zamorani, M. Nonino, P. Saracco, E. Vanzella, I. Donnarumma, S. Salimbeni, A. Cimatti, S. Cristiani, E. Daddi, S. D'Odorico, M. Mignoli, L. Pozzetti, & A. Renzini.* 593, L1 (2003)

Luminous Lyman Break Galaxies at $z > 5$ and the Source of Reionization. *Matthew D. Lehnert & Malcolm Bremer.* 593, 630 (2003)

Cosmological Results from High-z Supernovae. *John L. Tonry, Brian P. Schmidt, Brian Barris, Pablo Candia, Peter Challis, Alejandro Clocchiatti, Alison L. Coil, Alexei V. Filippenko, Peter Garnavich, Craig Hogan, Stephen T. Holland, Saurabh Jha, Robert P. Kirshner, Kevin Krisciunas, Bruno Leibundgut, Weidong Li, Thomas Matheson, Mark M. Phillips, Adam G. Riess, Robert Schommer, R. Chris Smith, Jesper Sollerman,*

Jason Spyromilio, Christopher W. Stubbs, & Nicholas B. Suntzeff. 594, 1 (2003)

The Cepheid Distance to NGC 1637: A Direct Test of the Expanding Photosphere Method Distance to SN 1999em. *Douglas C. Leonard, Shashi M. Kanbur, Choong C. Ngeow, & Nial R. Tanvir.* 594, 247 (2003)

The Redshift Distribution of Flat-Spectrum Radio Sources. *J. A. Muñoz, E. E. Falco, C. S. Kochanek, J. Lehár, & E. Mediavilla.* 594, 684 (2003)

Angular Clustering with Photometric Redshifts in the Sloan Digital Sky Survey: Bimodality in the Clustering Properties of Galaxies. *Tamás Budavári, Andrew J. Connolly, Alexander S. Szalay, István Szapudi, István Csabai, Ryan Scranton, Neta A. Bahcall, Jon Brinkmann, Daniel J. Eisenstein, Joshua A. Frieman, Masataka Fukugita, James E. Gunn, David Johnston, Stephen Kent, Jon N. Loveday, Robert H. Lupton, Max Tegmark, Aniruddha R. Thakar, Brian Yanny, Donald G. York, & Idit Zehavi.* 595, 59 (2003)

Star Formation History and Other Properties of the Northern Hubble Deep Field. *Rodger I. Thompson.* 596, 748 (2003)

An Estimate of Ω_m without Conventional Priors. *H. Feldman, R. Juszkiewicz, P. Ferreira, M. Davis, E. Gaztañaga, J. Fry, A. Jaffe, S. Chambers, L. da Costa, M. Bernardi, R. Giovanelli, M. Haynes, & G. Wegner.* 596, L131 (2003)

A Geometric Determination of the Distance to the Galactic Center. *F. Eisenhauer, R. Schödel, R. Genzel, T. Ott, M. Tecza, R. Abuter, A. Eckart, & T. Alexander.* 597, L121 (2003)

Multicolor Photometry of the Galaxies in A2255 by the Beijing-Arizona-Taiwan-Connecticut Survey and Sloan Digital Sky Survey. *Qirong Yuan, Xu Zhou, & Zhaoji Jiang.* 149, 53 (2003)

Photometry and Spectroscopy of GRB 030329 and Its Associated Supernova 2003dh: The First Two Months. *T. Matheson, P. M. Garnavich, K. Z. Stanek, D. Bersier, S. T. Holland, K. Krisciunas, N. Caldwell, P. Berlind, J. S. Bloom, M. Bolte, A. Z. Bonanos, M. J. I. Brown, W. R. Brown, M. L. Calkins, P. Challis, R. Chornock, L. Echevarria, D. J. Eisenstein, M. E. Everett, A. V. Filippenko, K. Flint, R. J. Foley, D. L. Freedman, Mario Hamuy, P. Harding, N. P. Hathi, M. Hicken, C. Hoopes, C. Impey, B. T. Jannuzi, R. A. Jansen, S. Jha, J. Kaluzny, S. Kannappan, R. P. Kirshner, D. W. Latham, J. C. Lee, D. C. Leonard, W. Li, K. L. Luhman, P. Martini, H. Mathis, J. Maza, S. T. Megeath, L. R. Miller, D. Minniti, E. W. Olszewski, M. Papenkova, M. M. Phillips, B. Pindor, D. D. Sasselov, R. Schild, H. Schweiker, T. Spahr, J. Thomas-Osip, I. Thompson, D. Weisz, R. Windhorst, & D. Zaritsky.* 599, 394 (2003)

GALAXIES: DWARF

The Central Mass Distribution in Dwarf and Low Surface Brightness Galaxies. *R. A. Swaters, B. F. Madore, Frank C. van den Bosch, & M. Balcells.* 583, 732 (2003)

The Failure of Self-Interacting Dark Matter to Solve the Overabundance of Dark Satellites and the Soft Core Question. *Elena D'Onghia & Andreas Burkert.* 586, 12 (2003)

Numerical Simulations of High-Redshift Star Formation in Dwarf Galaxies. *Konstantinos Tassis, Tom Abel, Greg L. Bryan, & Michael L. Norman.* 587, 13 (2003)

The Kinematics in the Core of the Low Surface Brightness Galaxy DDO 39. *R. A. Swaters, M. A. W. Verheijen, M. A. Bershady, & D. R. Andersen.* 587, L19 (2003)

Candidate Tidal Dwarf Galaxies in the Compact Group CG J1720−67.8. *S. Temporin, R. Weinberger, G. Galaz, & F. Kerber.* 587, 660 (2003)

Spectroscopy of Dwarf Galaxies in the Virgo Cluster. I. Data, Chemical Abundances, and Ionization Structure. *José M. Vílchez & Jorge Iglesias-Páramo.* 145, 225 (2003)

Sloan Digital Sky Survey Catalog of Stars in the Draco Dwarf Spheroidal Galaxy. *Heather A. Rave, Chongshan Zhao, Heidi Jo Newberg, Brian Yanny, Donald P. Schneider, J. Brinkman, & Don Q. Lamb.* 145, 245 (2003)

New Light on the Stellar Populations in I Zw 18: Deep Near-Infrared Imaging. *Leslie K. Hunt, Trinh X. Thuan, & Yuri I. Izotov.* 588, 281 (2003)

A Search for Ionized Gas in the Draco and Ursa Minor Dwarf Spheroidal Galaxies. *J. S. Gallagher, G. J. Madsen, R. J. Reynolds, E. K. Grebel, & T. A. Smecker-Hane.* 588, 326 (2003)

RR Lyrae and Short-Period Variable Stars in the Dwarf Irregular Galaxy NGC 6822. *Gisella Clementini, Enrico V. Held, Lara Baldacci, & Luca Rizzi.* 588, L85 (2003)

Draco: A Failure of the Tidal Model. *Ralf S. Klessen, Eva K. Grebel, & Daniel Harbeck.* 589, 798 (2003)

Clues to the Evolution of the Carina Dwarf Spheroidal Galaxy from the Color Distribution of Its Red Giant Stars. *Luca Rizzi, Enrico V. Held, Gianpaolo Bertelli, & Ivo Saviane.* 589, L85 (2003)

Supernova Enrichment of Dwarf Spheroidal Galaxies. *P. Chris Fragile, Stephen D. Murray, Peter Anninos, & Douglas N. C. Lin.* 590, 778 (2003)

Spatial Analysis of the Hα Emission in the Local Star-forming UCM Galaxies. *Pablo G. Pérez-González, Jaime Zamorano, Jesús Gallego, Alfonso Aragón-Salamanca, & Armando Gil de Paz.* 591, 827 (2003)

Star Formation and the Interstellar Medium in Four Dwarf Irregular Galaxies. *L. M. Young, L. van Zee, K. Y. Lo, R. C. Dohm-Palmer, & Michelle E. Beierle.* 592, 111 (2003)

Parametric Dwarf Spheroidal Tidal Interaction. *Jean-Julien Fleck & J. R. Kuhn.* 592, 147 (2003)

Constraints on the Origin of Manganese from the Composition of the Sagittarius Dwarf Spheroidal Galaxy and the Galactic Bulge. *Andrew McWilliam, R. Michael Rich, & Tammy A. Smecker-Hane.* 592, L21 (2003)

Palomar/Las Campanas Imaging Atlas of Blue Compact Dwarf Galaxies. I. Images and Integrated Photometry. *A. Gil de Paz, B. F. Madore, & O. Pevunova.* 147, 29 (2003)

Roche Lobe Overflow from Dwarf Stellar Systems. *Stephen D. Murray, Shawfeng Dong, & Douglas N. C. Lin.* 593, 301 (2003)

Deep Near-Infrared Mapping of Young and Old Stars in Blue Compact Dwarf Galaxies. *Luz M. Cairós, Nicola Caon, Polychronis Papaderos, Kai Noeske, Jose M. Vílchez, Begoña García Lorenzo, & Casiana Muñoz-Tuñón.* 593, 312 (2003)

Discovery of Eight New Extremely Metal-poor Galaxies in the Sloan Digital Sky Survey. *Alexei Y. Kniazev, Eva K. Grebel, Lei Hao, Michael A. Strauss, Jonathan Brinkmann, & Masataka Fukugita.* 593, L73 (2003)

Abundances in the Neutral Interstellar Medium of I Zw 18 from *Far Ultrviolet Spectroscopic Explorer* Observations. *A. Aloisi, S. Savaglio, T. M. Heckman, C. G. Hoopes, C. Leitherer, & K. R. Sembach.* 595, 760 (2003)

Deep *Hubble Space Telescope* Imaging of IC 1613. II. The Star Formation History. *Evan D. Skillman, Eline Tolstoy, Andrew A. Cole, Andrew E. Dolphin, Abhijit Saha, J. S. Gallagher, R. C. Dohm-Palmer, & Mario Mateo.* 596, 253 (2003)

Anomalous Evolution of the Dwarf Galaxy HIPASS J1321−31. *Barton J. Pritzl, Patricia M. Knezek, John S. Gallagher III, Marco Grossi, Mike J. Disney, Robert F. Minchin, Kenneth C. Freeman, Eline Tolstoy, & Abi Saha.* 596, L47 (2003)

Star Formation and Feedback in Dwarf Galaxies. *Shawfeng Dong, D. N. C. Lin, & S. D. Murray.* 596, 930 (2003)

High-Resolution Measurements of the Dark Matter Halo of NGC 2976: Evidence for a Shallow Density Profile. *Joshua D. Simon, Alberto D. Bolatto, Adam Leroy, & Leo Blitz.* 596, 957 (2003)

Discovery of a Double Ring in the Dwarf Galaxy Markarian 409. *A. Gil de Paz, B. F. Madore, K. Noeske, L. M. Cairós, P. Papaderos, & S. A. Silich.* 596, L179 (2003)

Andromeda VIII: A New Tidally Distorted Satellite of M31. *Heather L. Morrison, Paul Harding, Denise Hurley-Keller, & George Jacoby.* 596, L183 (2003)

Capturing a Star Formation Burst in Galaxies Infalling onto the Cluster A1367. *G. Gavazzi, L. Cortese, A. Boselli, J. Iglesias-Paramo, J. M. Vílchez, & L. Carrasco.* 597, 210 (2003)

The Asymptomatic Giant Branch of NGC 205: The Characteristics of Carbon Stars and M Giants Identified From JHK' Images. *T. J. Davidge.* 597, 289 (2003)

The Puzzlingly Large Ca II Triplet Absorption in Dwarf Elliptical Galaxies. *D. Michielsen, S. De Rijcke, H. Dejonghe, W. W. Zeilinger, & G. K. T. Hau.* 597, L21 (2003)

Observing the Dark Matter Density Profile of Isolated Galaxies. *Francisco Prada, Mayrita Vitvitska, Anatoly Klypin, Jon A. Holtzman, David J. Schlegel, Eva K. Grebel, H.-W. Rix, J. Brinkmann, T. A. McKay, & I. Csabai.* 598, 260 (2003)

Accretion of Dust Grains as a Possible Origin of Metal-poor Stars with Low α/Fe Ratios. *Toshikazu Shigeyama & Takuji Tsujimoto.* 598, L47 (2003)

The Influence of Supershells and Galactic Outflows on the Escape of Ionizing Radiation from Dwarf Starburst Galaxies. *Akima Fujita, Crystal L. Martin, Mordecai-Mark Mac Low, & Tom Abel.* 599, 50 (2003)

GALAXIES: ELLIPTICAL AND LENTICULAR, CD

Lensing and the Centers of Distant Early-Type Galaxies. *Charles R. Keeton.* 582, 17 (2003)

The Black Hole Masses and Host Galaxies of BL Lacertae Objects. *Aaron J. Barth, Luis C. Ho, & Wallace L. W. Sargent.* 583, 134 (2003)

The Structure and Dynamics of Luminous and Dark Matter in the Early-Type Lens Galaxy of 0047−281 at $z = 0.485$. *Léon V. E. Koopmans & Tommaso Treu.* 583, 606 (2003)

The Cool Interstellar Medium in S0 Galaxies. I. A Survey of Molecular Gas. *Gary A. Welch & Leslie J. Sage.* 584, 260 (2003)

The Fundamental Plane at $z = 1.27$: First Calibration of the Mass Scale of Red Galaxies at Redshifts $z > 1$. *Pieter G. van Dokkum & S. A. Stanford.* 585, 78 (2003)

Massive Elliptical Galaxies at High Redshift: NICMOS Imaging of $z \approx 1$ Radio Galaxies. *Andrew W. Zirm, Mark Dickinson, & Arjun Dey.* 585, 90 (2003)

Average Spectra of Massive Galaxies in the Sloan Digital Sky Survey. *Daniel J. Eisenstein, David W. Hogg, Masataka Fukugita, Osamu Nakamura, Mariangela Bernardi, Douglas P. Finkbeiner, David J. Schlegel, J. Brinkmann, Andrew J. Connolly, István Csabai, James E. Gunn, Željko Ivezić, Don Q. Lamb, Jon Loveday, Jeffrey A. Munn, Robert C. Nichol, Donald P. Schneider, Michael A. Strauss, Alex Szalay, & Don G. York.* 585, 694 (2003)

X-Ray Source Population in the Elliptical Galaxy NGC 720 with *Chandra*. *Tesla E. Jeltema, Claude R. Canizares, David A. Buote, & Gordon P. Garmire.* 585, 756 (2003)

Evidence for an Intermediate-Age, Metal-rich Population of Globular Clusters in NGC 4365. *Søren S. Larsen, Jean P. Brodie, Michael A. Beasley, Duncan A. Forbes, Markus Kissler-Patig, Harald Kuntschner, & Thomas H. Puzia.* 585, 767 (2003)

Dust in Hot Gas: Far-Infrared Emission from Three Local Elliptical Galaxies. *Pasquale Temi, William G. Mathews, Fabrizio Brighenti, & Jesse D. Bregman.* 585, L121 (2003)

The Magnesium–Velocity Dispersion Relation and the Genesis of Early-Type Galaxies. *Guy Worthey & Maela Collobert.* 586, 17 (2003)

The *XMM-Newton* View of the Nucleus of NGC 4261. *R. M. Sambruna, M. Gliozzi, M. Eracleous, W. N. Brandt, & R. Mushotzky.* 586, L37 (2003)

Hubble Space Telescope WFPC2 Morphologies of *K*-selected Extremely Red Galaxies. *Lin Yan & David Thompson.* 586, 765 (2003)

The Evolution of a Mass-selected Sample of Early-Type Field Galaxies. *D. Rusin, C. S. Kochanek, E. E. Falco, C. R. Keeton, B. A. McLeod, C. D. Impey, J. Lehár, J. A. Muñoz, C. Y. Peng, & H.-W. Rix.* 587, 143 (2003)

Feedback Heating in Cluster and Galactic Cooling Flows. *Fabrizio Brighenti & William G. Mathews.* 587, 580 (2003)

Cosmic Star Formation History Assocatied with Quasar Activity: An Approach Using the Black Hole–to–Bulge Mass Correlation. *Y. P. Wang, T. Yamada, & Y. Taniguchi.* 588, 113 (2003)

Rapid Cooling of Dusty Gas in Elliptical Galaxies. *William G. Mathews & Fabrizio Brighenti.* 590, L5 (2003)

Simulations of Galaxy Formation in a ΛCDM Universe. III. The Dissipative Formation of an Elliptical Galaxy. *Andrés Meza, Julio F. Navarro, Matthias Steinmetz, & Vincent R. Eke.* 590, 619 (2003)

ERO R1 in the Field of Cl 0939+4713: Evidence for an S0-Like Galaxy at $z \sim 1.5$. *Masanori Iye, Kazuhiro Shimasaku, Satoshi Miyazaki, Chris Simpson, Masatoshi Imanishi, Nabunari Kashikawa, Takayuki Kodama, Masashi Chiba, Yoshihiko Saito, Miwa Goto, Fumihide Iwamuro, Naoto Kobayashi, Sadanori Okamura, & Hiroshi Terada.* 590, 770 (2003)

An Imaging Survey of Early-Type Barred Galaxies. *Peter Erwin & Linda S. Sparke.* 146, 299 (2003)

Galaxy Populations and Evolution in Clusters. IV. Deep H I Observations of Dwarf Elliptical Galaxies in the Virgo Cluster. *Christopher J. Conselice, Karen O'Neil, John S. Gallagher, & Rosemary F. G. Wyse.* 591, 167 (2003)

On the Size Difference between Red and Blue Globular Clusters. *Soren S. Larsen & Jean P. Brodie.* 593, 340 (2003)

CO (3–2) Observations of Early-Type Galaxies with the Heinrich Hertz Telescope. *B. Vila-Vilaró, J. Cepa, & H. M. Butner.* 594, 232 (2003)

Self-similar Models for the Mass Profiles of Early-Type Lens Galaxies. *D. Rusin, C. S. Kochanek, & C. R. Keeton.* 595, 29 (2003)

Black Hole Masses and the Fundamental Plane of BL Lacertae Objects. *R. Falomo, J. K. Kotilainen, N. Carangelo, & A. Treves.* 595, 624 (2003)

Low-Mass X-Ray Binaries and Globular Clusters in Early-Type Galaxies. *Craig L. Sarazin, Arunav Kundu, Jimmy A. Irwin, Gregory R. Sivakoff, Elizabeth L. Blanton, & Scott W. Randall.* 595, 743 (2003)

Circulation Flows: Cooling Flows with Bubble Return. *William G. Mathews, Fabrizio Brighenti, David A. Boute, & Aaron D. Lewis.* 596, 159 (2003)

Kinematics of 10 Early-Type Galaxies from *Hubble Space Telescope* and Ground-based Spectroscopy. *Jason Pinkney, Karl Gebhardt, Ralf Bender, Gary Bower, Alan Dressler, S. M. Faber, Alexei V. Filippenko, Richard Green, Douglas Richstone, & Scott Tremaine.* 596, 903 (2003)

Advanced Camera for Surveys Photometry of the Cluster RDCS 1252.9−2927: The Color-Magnitude Relation at $z = 1.24$. *John P. Blakeslee, Marijn Franx, Marc Postman, Piero Rosati, Brad P. Holden, G. D. Illingworth, H. C. Ford, N. J. G. Cross, Caryl Gronwall, N. Benítez, R. J. Bouwens, T. J. Broadhurst, M. Clampin, R. Demarco, D. A. Golimowski, G. F. Hartig, L. Infante, A. R. Martel, G. K. Miley, F. Menanteau, G. R. Meurer, M. Sirianni, & R. L. White.* 596, L143 (2003)

Space Telescope Imaging Spectrograph Spectroscopy of the Emission-Line Gas in the Nuclei of Nearby FR-I Galaxies. *Jacob Noel-Storr, Stefi A. Baum, Gijs Verdoes Kleijn, Roeland P. van der Marel, Christoper P. O'Dea, Tim de Zeeuw, & C. Marcella Carollo.* 148, 419 (2003)

Red Galaxy Clustering in the NOAO Deep Wide-Field Survey. *Michael J. I. Brown, Arjun Dey, Buell T. Jannuzi, Tod R. Lauer, Glenn P. Tiede, & Valerie J. Mikles.* 597, 225 (2003)

The DEEP Groth Strip Survey. IX. Evolution of the Fundamental Plane of Field Galaxies. *Karl Gebhardt, S. M. Faber, David C. Koo, Myungshin Im, Luc Simard, Garth D. Illingworth, Andrew C. Phillips, Vicki L. Sarajedini, Nicole P. Vogt, Benjamin Weiner, & Christopher N. A. Willmer.* 597, 239 (2003)

The Importance of Spheroidal and Mixed Mergers for Early-Type Galaxy Formation. *S. Khochfar & A. Burkert.* 597, L117 (2003)

The Hubble Constant from the Gravitational Lens B1608+656. *L. V. E. Koopmans, T. Treu, C. D. Fassnacht, R. D. Blandford, & G. Surpi.* 599, 70 (2003)

Near-Infrared Observations of BL Lacertae Host Galaxies. *C. C. Cheung, C. Megan Urry, Riccardo Scarpa, & Mauro Giavalisco.* 599, 155 (2003)

Chandra Observations of Low-Mass X-Ray Binaries and Diffuse Gas in the Early-Type Galaxies NGC 4365 and NGC 4382 (M85). *Gregory R. Sivakoff, Craig L. Sarazin, & Jimmy A. Irwin.* 599, 218 (2003)

Direct Confirmation of Two Pattern Speeds in the Double-barred Galaxy NGC 2950. *E. M. Corsini, Victor P. Debattista, & J. A. L. Aguerri.* 599, L29 (2003)

Stellar Orbits and the Interstellar Gas Temperature in Elliptical Galaxies. *William G. Mathews & Fabrizio Brighenti.* 599, 992 (2003)

NGC 4261 and NGC 4697: Rejuvenated Elliptical Galaxies. *A. Zezas, L. Hernquist, G. Fabbiano, & J. Miller.* 599, L73 (2003)

GALAXIES: EVOLUTION

The Canada–United Kingdom Deep Submillimeter Survey. V. The Submillimeter Properties of Lyman Break Galaxies. *T. M. Webb, S. Eales, S. Foucaud, S. J. Lilly, H. McCracken, K. Adelberger, C. Steidel, A. Shapley, D. L. Clements, L. Dunne, O. Le Fèvre, M. Brodwin, & W. Gear.* 582, 6 (2003)

Subaru Deep Survey. II. Luminosity Functions and Clustering Properties of Lyα Emitters at $z = 4.86$ in the Subaru Deep Field. *Masami Ouchi, Kazuhiro Shimasaku, Hisanori Furusawa, Masayuki Miyazaki, Mamoru Doi, Masaru Hamabe, Tomoki Hayashino, Masahiko Kimura, Keiichi Kodaira, Yutaka Komiyama, Yuichi Matsuda, Satoshi Miyazaki, Fumiaki Nakata, Sadanori Okamura, Maki Sekiguchi, Yasuhiro Shioya, Hajime Tamura, Yoshiaki Taniguchi, Masafumi Yagi, & Naoki Yasuda.* 582, 60 (2003)

Tidal Effects in Clusters of Galaxies. *Oleg Y. Gnedin.* 582, 141 (2003)

Central Mass Concentration and Bar Dissolution in Nearby Spiral Galaxies. *Mousumi Das, Peter J. Teuben, Stuart N. Vogel, Michael W. Regan, Kartik Sheth, Andrew I. Harris, & William H. Jefferys.* 582, 190 (2003)

Uncertainties of Synthetic Integrated Colors as Age Indicators. *Sukyoung K. Yi.* 582, 202 (2003)

The Assembly and Merging of Supermassive Black Holes in Hierarchical Models of Galaxy Formation. *Marta Volonteri, Francesco Haardt, & Piero Madau.* 582, 559 (2003)

Tidally Triggered Star Formation in Close Pairs of Galaxies. II. Constraints on Burst Strengths and Ages. *Elizabeth Barton Gillespie, Margret J. Geller, & Scott J. Kenyon.* 582, 668 (2003)

Structure of Disk-dominated Galaxies. II. Bulge/Disk Parameters, Simulations, and Secular Evolution. *Lauren A. MacArthur, Stephanie Courteau, & Jon A. Holtzman.* 582, 689 (2003)

An Obscured Radio Galaxy at High Redshift. *Michiel Reuland, Wil van Breugel, Huub Röttgering, Wim de Vries, Carlos De Breuk, & Daniel Stern.* 582, L71 (2003)

Protoquasars: Physical States and Observable Properties. *Nozomu Kawakatu, Masayuki Umemura, & Masao Mori.* 583, 85 (2003)

The Missing Link in Star Cluster Evolution. *Richard de Grijs, Nate Bastian, & Henney J. G. L. M. Lamers.* 583, L17 (2003)

Analysis of the Diffuse Near-Infrared Emission from Two-Micron All-Sky Survey Deep Integration Data: Foregrounds versus the Cosmic Infrared Background. *S. Odenwald, A. Kashlinsky, J. C. Mather, M. F. Skrutskie, & R. M. Cutri.* 583, 535 (2003)

A SCUBA Galaxy in the Protocluster around 53W002 at $z = 2.4$. *Ian Smail, R. J. Ivison, D. G. Gilbank, J. S. Dunlop, W. C. Keel, K. Motohara, & J. A. Stevens.* 583, 551 (2003)

The Structure and Dynamics of Luminous and Dark Matter in the Early-Type Lens Galaxy of 0047−281 at $z = 0.485$. *Léon V. E. Koopmans & Tommaso Treu.* 583, 606 (2003)

Measuring Distances and Probing the Unresolved Stellar Populations of Galaxies Using Infrared Surface Brightness Fluctuations. *Joseph B. Jensen, John L. Tonry, Brian J. Barris, Rodger I. Thompson, Michael C. Liu, Marcia J. Rieke, Edward A. Ajhar, & John P. Blakeslee.* 583, 712 (2003)

NGC 4608 and NGC 5701: Barred Galaxies without Disks? *D. A. Gadotti & R. E. de Souza.* 583, L75 (2003)

A Multiwavelength Approach to the Star Formation Rate Estimation in Galaxies at Intermediate Redshifts. *N. Cardiel, D. Elbaz, R. P. Schiavon, C. N. A. Willmer, D. C. Koo, A. C. Phillips, & J. Gallego.* 584, 76 (2003)

The Hawaii+Anglo-Australian Observatory *K*-Band Galaxy Redshift Survey. I. The Local *K*-Band Luminosity Function. *J.-S. Huang, K. Glazebrook, L. L. Cowie, & C. Tinney.* 584, 203 (2003)

Galaxy Star Formation as a Function of Environment in the Early Data Release of the Sloan Digital Sky Survey. *Percy L. Gomez, Robert C. Nichol, Christopher L. Miller, Michael L. Balogh, Tomotsugu Goto, Ann I. Zabludoff, A. Kathy Romer, Mariengela Bernardi, Ravi Sheth, Andrew M. Hopkins, Francisco J. Castander, Andrew J. Connolly, Donald P. Schneider, Jon Brinkmann, Don Q. Lamb, Mark SubbaRao, & Donald G. York.* 584, 210 (2003)

The State of Galaxy Formation in the Local Universe. *D. J. Pisano & Eric M. Wilcots.* 584, 228 (2003)

CG J1720−67.8: A Detailed Analysis of Optical and Infrared Properties of a New Ultracompact Group of Galaxies. *S. Temporin, R. Weinberger, G. Galaz, & F. Kerber.* 584, 239 (2003)

The Cool Interstellar Medium in S0 Galaxies. I. A Survey of Molecular Gas. *Gary A. Welch & Leslie J. Sage.* 584, 260 (2003)

Schechter versus Schechter: Subarcsecond Gravitational Lensing and Inner Halo Profiles. *Chung-Pei Ma.* 584, L1 (2003)

The Structural Evolution of Substructure. *Eric Hayashi, Julio F. Navarro, James E. Taylor, Joachim Stadel, & Thomas Quinn.* 584, 541 (2003)

Thermodynamic Description of a Family of Partially Relaxed Stellar Systems. *G. Bertin & M. Trenti.* 584, 729 (2003)

The Redshift Evolution of the 2–8 keV X-Ray Luminosity Function. *L. L. Cowie, A. J. Barger, M. Bautz, W. N. Brandt, & G. P. Garmire.* 584, L57 (2003)

Very High Redshift X-Ray–selected Active Galactic Nuclei in the *Chandra* Deep Field–North. *A. J. Barger, L. L. Cowie, P. Capak, D. M. Alexander, F. E. Bauer, W. N. Brandt, G. P. Garmire, & A. E. Hornschemeier.* 584, L61 (2003)

Far-Ultraviolet Emission from Elliptical Galaxies at $z = 0.33$. *Thomas M. Brown, Henry C. Ferguson, Ed Smith, Charles W. Bowers, Randy A. Kimble, Alvio Renzini, & R. Michael Rich.* 584, L69 (2003)

The Properties of Microjansky Radio Sources in the Hubble Deep Field–North, SSA 13, and SSA 22 Fields. *S. C. Chapman, A. J. Barger, L. L. Cowie, D. Scott, C. Borys, P. Capak, E. B. Fomalont, G. F. Lewis, E. A. Richards, A. T. Steffen, G. Wilson, & M. Yun.* 585, 57 (2003)

The Infrared Counterparts of the Optically Unidentified Chandra Deep Field–South 1 Ms Sources. *Haojing Yan, Rogier A. Windhorst, Huub J. A. Röttgering, Seth H. Cohen, Stephen C. Odewahn, Scott C. Chapman, & William C. Keel.* 585, 67 (2003)

The Fundamental Plane at $z = 1.27$: First Calibration of the Mass Scale of Red Galaxies at Redshifts $z > 1$. *Pieter G. van Dokkum & S. A. Stanford.* 585, 78 (2003)

Galaxy Clustering Evolution in the UH8K Weak-Lensing Fields. *Gillian Wilson.* 585, 191 (2003)

Correlations of Richness and Global Properties in Galaxy Clusters. *H. K. C. Yee & E. Ellingson.* 585, 215 (2003)

Predictions for Cosmological Infrared Surveys from Space with the Multiband Imaging Photometer for *SIRTF*. *H. Dole, G. Lagache, & J.-L. Puget.* 585, 617 (2003)

Average Spectra of Massive Galaxies in the Sloan Digital Sky Survey. *Daniel J. Eisenstein, David W. Hogg, Masataka Fukugita, Osamu Nakamura, Mariangela Bernardi, Douglas P. Finkbeiner, David J. Schlegel, J. Brinkmann, Andrew J. Connolly, István Csabai, James E. Gunn, Željko Ivezić, Don Q. Lamb, Jon Loveday, Jeffrey A. Munn, Robert C. Nichol, Donald P. Schneider, Michael A. Strauss, Alex Szalay, & Don G. York.* 585, 694 (2003)

Intergalactic Globular Clusters and the Faint End of the Galaxy Number Counts in A1656 (Coma). *A. Marín-Franch & A. Aparicio.* 585, 714 (2003)

Extraordinary Diffuse Light in Hickson Compact Group 90. *P. M. White, G. Bothun, Martín A. Guerrero, Michael J. West, & Wayne A. Barkhouse.* 585, 739 (2003)

Evidence for an Intermediate-Age, Metal-rich Population of Globular Clusters in NGC 4365. *Søren S. Larsen, Jean P. Brodie, Michael A. Beasley, Duncan A. Forbes, Markus Kissler-Patig, Harald Kuntschner, & Thomas H. Puzia.* 585, 767 (2003)

Gravitational Potential Reconstruction from Peculiar Velocity and Weak Lensing Measurements. *Olivier Doré, Lloyd Knox, & Alan Peel.* 585, L81 (2003)

The Magnesium–Velocity Dispersion Relation and the Genesis of Early-Type Galaxies. *Guy Worthey & Maela Collobert.* 586, 17 (2003)

On the Spiral Structure of NGC 2915 and Dark Matter. *F. S. Masset & M. Bureau.* 586, 152 (2003)

Stellar Masses of Luminous Compact Blue Galaxies at Redshifts $z = 0.4$–1.2. *R. Guzmán, G. Östlin, D. Kunth, M. A. Bershady, D. C. Koo, & M. A. Pahre.* 586, L45 (2003)

The Las Campanas Infrared Survey. IV. The Photometric Redshift Survey and the Rest-Frame *R*-Band Galaxy Luminosity Function at $0.5 \leq z \leq 1.5$. *Hsiao-Wen Chen, Ronald O. Marzke, Patrick J. McCarthy, P. Martini, R. G. Carlberg, S. E. Persson, A. Bunker, C. R. Bridge, & R. G. Abraham.* 586, 745 (2003)

Subaru Deep Survey. IV. Discovery of a Large-Scale Structure at Redshift $\simeq 5$. *K. Shimasaku, M. Ouchi, S. Okamura, N. Kashikawa, M. Doi, H. Furusawa, M. Hamabe, T. Hayashino, K. Kawabata, M. Kimura, K. Kodaira, Y. Komiyama, Y. Matsuda, M. Miyazaki, S. Miyazaki, F. Nakata, K. Ohta, Y. Ohyama, M. Sekiguchi, Y. Shioya, H. Tamura, Y. Taniguchi, M. Yagi, T. Yamada, & N. Yasuda.* 586, L111 (2003)

The Hα Luminosity Function and Star Formation Rate at $z \approx 0.24$ Based on Subaru Deep Imaging Data. *Shinobu S. Fujita, Masaru Ajiki, Yasuhiro Shioya, Tohru Nagao, Takashi Murayama, Yoshiaki Taniguchi, Kazuyoshi Umeda, Sanae Yamada, Masafumi Yagi, Sadonori Okamura, & Yutaka Komiyama.* 586, L115 (2003)

Numerical Simulations of High-Redshift Star Formation in Dwarf Galaxies. *Konstantinos Tassis, Tom Abel, Greg L. Bryan, & Michael L. Norman.* 587, 13 (2003)

The Evolution of the Global Stellar Mass Density at $0 < z < 3$. *Mark Dickinson, Casey Papovich, Henry C. Ferguson, & Tamás Budavári.* 587, 25 (2003)

The Canada-UK Deep Submillimeter Survey. VI. The 3 Hour Field. *T. M. Webb, S. A. Eales, S. J. Lilly, D. L. Clements, L. Dunne, W. K. Gear, R. J. Ivison, H. Flores, & M. Yun.* 587, 41 (2003)

The Evolution of a Mass-selected Sample of Early-Type Field Galaxies. *D. Rusin, C. S. Kochanek, E. E. Falco, C. R. Keeton, B. A. McLeod, C. D. Impey, J. Lehár, J. A. Muñoz, C. Y. Peng, & H.-W. Rix.* 587, 143 (2003)

Environmental Effects on Evolution of Cluster Galaxies in a Λ-dominated Cold Dark Matter Universe. *Takashi Okamoto & Masahiro Nagashima.* 587, 500 (2003)

A Quadruple-Phase Strong Mg II Absorber at $z \sim 0.9902$ toward PG 1634+706. *Jie Ding, Jane C. Charlton, Nicholas A. Bond, Stephanie G. Zonak, & Christopher W. Churchill.* 587, 551 (2003)

Cosmic-Ray History and Its Implications for Galactic Magnetic Fields. *Ellen G. Zweibel.* 587, 625 (2003)

Candidate Tidal Dwarf Galaxies in the Compact Group CG J1720−67.8. *S. Temporin, R. Weinberger, G. Galaz, & F. Kerber.* 587, 660 (2003)

Quasar Evolution Driven by Galaxy Encounters in Hierarchical Structures. *N. Menci, A. Cavaliere, A. Fontana, E. Giallongo, F. Poli, & V. Vittorini.* 587, L63 (2003)

A Significant Population of Red, Near-Infrared–selected High-Redshift Galaxies. *Marijn Franx, Ivo Labbé, Gregory Rudnick, Pieter G.*

van Dokkum, Emanuele Daddi, Natascha M. Förster Schreiber, Alan Moorwood, Hans-Walter Rix, Huub Röttgering, Arjen van de Wel, Paul van der Werf, & Lottie van Starkenburg. 587, L79 (2003)

Spectroscopic Confirmation of a Substantial Population of Luminous Red Galaxies at Redshifts $z \gtrsim 2$. *Pieter G. van Dokkum, Natascha M. Förster Schreiber, Marijn Franx, Emanuele Daddi, Garth D. Illingworth, Ivo Labbé, Alan Moorwood, Hans-Walter Rix, Huub Röttgering, Gregory Rudnick, Arjen van der Wel, Paul van der Werf, & Lottie van Starkenburg.* 587, L83 (2003)

Detection of Strong Clustering of Red *K*-selected Galaxies at $2 < z_{\rm phot} < 4$ in the Hubble Deep Field–South. *E. Daddi, H. J. A. Röttgering, I. Labbé, G. Rudnick, M. Franx, A. F. M. Moorwood, H. W. Rix, P. P. van der Werf, & P. G. van Dokkum.* 588, 50 (2003)

Rest-Frame Ultraviolet Spectra of $z \sim 3$ Lyman Break Galaxies. *Alice E. Shapley, Charles C. Steidel, Max Pettini, & Kurt L. Adelberger.* 588, 65 (2003)

Cosmic Star Formation History Assocatied with Quasar Activity: An Approach Using the Black Hole–to–Bulge Mass Correlation. *Y. P. Wang, T. Yamada, & Y. Taniguchi.* 588, 113 (2003)

The Bivariate Luminosity-Color Distribution of *IRAS* Galaxies and Implications for the High-Redshift Universe. *S. C. Chapman, G. Helou, G. F. Lewis, & D. A. Dale.* 588, 186 (2003)

A New Approach to Galaxy Morphology. I. Analysis of the Sloan Digital Sky Survey Early Data Release. *Roberto G. Abraham, Sidney van den Bergh, & Preethi Nair.* 588, 218 (2003)

Further Discoveries of ^{12}CO in Low Surface Brightness Galaxies. *K. O'Neil, E. Schinnerer, & P. Hofner.* 588, 230 (2003)

The First CO Map of a Low Surface Brightness Galaxy. *K. O'Neil & E. Schinnerer.* 588, L81 (2003)

High-Resolution STIS/*Hubble Space Telescope* and HIRES/Keck Spectra of Three Weak Mg II Absorbers toward PG 1643+706. *Jane C. Charlton, Jie Ding, Stephanie G. Zonak, Christopher W. Churchill, Nicholas A. Bond, & Jane R. Rigby.* 589, 111 (2003)

Age, Metallicity, and Star Formation History of Cluster Galaxies at $z \sim 0.3$. *P. Merluzzi, F. La Barbera, M. Massarotti, G. Busarello, & M. Capaccioli.* 589, 147 (2003)

Emission-Line Galaxies in the STIS Parallel Survey. II. Star Formation Density. *Harry I. Teplitz, Nicholas R. Collins, Jonathan P. Gardner, Robert S. Hill, & Jason Rhodes.* 589, 704 (2003)

The Absorption and Emission Kinematics in the $z = 0.7450$ Mg II Absorber toward Q1331+17. *Sara L. Ellison, Gabriela Mallén-Ornelas, & Marcin Sawicki.* 589, 709 (2003)

Quasar Elemental Abundances at High Redshifts. *M. Dietrich, F. Hamann, J. C. Shields, A. Constantin, J. Heidt, K. Jäger, M. Vestergaard, & S. J. Wagner.* 589, 722 (2003)

Dynamical Evolution of Galaxies in Clusters. *Oleg Y. Gnedin.* 589, 752 (2003)

Draco: A Failure of the Tidal Model. *Ralf S. Klessen, Eva K. Grebel, & Daniel Harbeck.* 589, 798 (2003)

Clues to the Evolution of the Carina Dwarf Spheroidal Galaxy from the Color Distribution of Its Red Giant Stars. *Luca Rizzi, Enrico V. Held, Gianpaolo Bertelli, & Ivo Saviane.* 589, L85 (2003)

Cl 1358+62: Characterizing the Physical Properties of Cluster Galaxies at $z = 0.33$. *Kim-Vy H. Tran, Luc Simard, Garth Illingworth, & Marijn Franx.* 590, 238 (2003)

Detection of Nonrandom Galaxy Orientations in X-Ray Subclusters of the Coma Cluster. *Manfred Kitzbichler & W. Saurer.* 590, L9 (2003)

Discovery of Latent Star Formation in the Extended H I Gas around the Local Group Dwarf Irregular Galaxy NGC 6822. *Yutaka Komiyama, Sadanori Okamura, Masafumi Yagi, Hisanori Furusawa, Mamoru Doi, Masaru Hamabe, Katsumi Imi, Masahiko Kimura, Satoshi Miyazaki, Fumiaki Nakata, Norio Okada, Masami Ouchi, Maki Sekiguchi, Kazuhiro Shimasaku, Naoki Yasuda, Nobuo Arimoto, & Chisato Ikuta.* 590, L17 (2003)

Simulations of Galaxy Formation in a ΛCDM Universe. III. The Dissipative Formation of an Elliptical Galaxy. *Andrés Meza, Julio F. Navarro, Matthias Steinmetz, & Vincent R. Eke.* 590, 619 (2003)

Galaxy Formation in Triaxial Halos: Black Hole–Bulge–Dark Halo Correlation. *Amr A. El-Zant, Isaac Shlosman, Mitchell C. Begelman, & Juhan Frank.* 590, 641 (2003)

Chandra ACIS-S Observations of Three Quasars with Low-Redshift Damped Lyα Absorption: Constraints on the Cosmic Neutral Gas-Phase Metallicity at Redshift $z \approx 0.4$. *David A. Turnshek, Sandhya M. Rao, Andrew F. Ptak, Richard E. Griffiths, & Eric M. Monier.* 590, 730 (2003)

The Multiphase Absorption Systems toward PG 1206+459. *Jie Ding, Jane C. Charlton, Christopher W. Churchill, & Christopher Palma.* 590, 746 (2003)

ERO R1 in the Field of Cl 0939+4713: Evidence for an S0-Like Galaxy at $z \sim 1.5$. *Masanori Iye, Kazuhiro Shimasaku, Satoshi Miyazaki, Chris Simpson, Masatoshi Imanishi, Nabunari Kashikawa, Takayuki Kodama, Masashi Chiba, Yoshihiko Saito, Miwa Goto, Fumihide Iwamuro, Naoto Kobayashi, Sadanori Okamura, & Hiroshi Terada.* 590, 770 (2003)

Supernova Enrichment of Dwarf Spheroidal Galaxies. *P. Chris Fragile, Stephen D. Murray, Peter Anninos, & Douglas N. C. Lin.* 590, 778 (2003)

On Variations in the Peak Luminosity of Type Ia Supernovae. *F. X. Timmes, Edward F. Brown, & J. W. Truran.* 590, L83 (2003)

Differences in Carbon and Nitrogen Abundances between Field and Cluster Early-Type Galaxies. *P. Sánchez-Blázquez, J. Gorgas, N. Cardiel, J. Cenarro, & J. J. González.* 590, L91 (2003)

Emission-Line Galaxies in the Space Telescope Imaging Spectrograph Parallel Survey. I. Observations and Data Analysis. *Harry I. Teplitz, Nicholas R. Collins, Jonathan P. Gardner, Robert S. Hill, Sara R. Heap, Don J. Lindler, Jason Rhodes, & Bruce E. Woodgate.* 146, 209 (2003)

Radio-selected Galaxis in Very Rich Clusters at $z \leq 0.25$. I. Multiwavelength Observations and Data Reduction Techniques. *G. E. Morrison, F. N. Owen, M. J. Ledlow, W. C. Keel, J. M. Hill, W. Voges, & T. Herter.* 146, 267 (2003)

Decline of the Space Density of Quasars between $z = 2$ and $z = 4$. *M. Vigotti, R. Carballo, C. R. Benn, G. De Zotti, R. Fanti, J. I. Gonzalez Serrano, K.-H. Mack, & J. Holt.* 591, 43 (2003)

A Wide-Field *Hubble Space Telescope* Study of the Cluster Cl 0024+16 at $z = 0.4$. I. Morphological Distributions to 5 Mpc Radius. *Tommaso Treu, Richard S. Ellis, Jean-Paul Kneib, Alan Dressler, Ian Smail, Oliver Czoske, Augustus Oemler, & Priyamvada Natarajan.* 591, 53 (2003)

Hα Spectroscopy of Galaxies at $z > 2$: Kinematics and Star Formation. *Dawn K. Erb, Alice E. Shapley, Charles C. Steidel, Max Pettini, Kurt L. Adelberger, Matthew P. Hunt, Alan F. M. Moorwood, & Jean-Gabriel Cuby.* 591, 101 (2003)

Galaxy Populations and Evolution in Clusters. IV. Deep H I Observations of Dwarf Elliptical Galaxies in the Virgo Cluster. *Christopher J. Conselice, Karen O'Neil, John S. Gallagher, & Rosemary F. G. Wyse.* 591, 167 (2003)

The Leo I Cloud: Secular Nuclear Evolution of NGC 3379, NGC 3384, and NGC 3368? *O. K. Sil'chenko, A. V. Moiseev, V. L. Afanasiev, V. H. Chavushyan, & J. R. Valdes.* 591, 185 (2003)

On the Origin of Lyα Blobs at High Redshift: Kinematic Evidence of a Hyperwind Galaxy at $z = 3.1$. *Youichi Ohyama, Yoshiaki Taniguchi, Koji S. Kawabata, Yasuhiro Shioya, Takashi Murayama, Tohru Nagao, Tadafumi Takata, Masanori Iye, & Michitoshi Yoshida.* 591, L9 (2003)

High-Redshift Candidates and the Nature of Small Galaxies in the Hubble Deep Field. *Lisa J. Storrie-Lombardi, Ray J. Weymann, & Rodger I. Thompson.* 591, 623 (2003)

Galaxy Luminosity Functions from Deep Spectroscopic Samples of Rich Clusters. *Daniel Christlein & Ann I. Zabludoff.* 591, 764 (2003)

Dark and Luminous Matter Connections from Smoothed Particle Hydrodynamic Simulations of Isolated Triaxial Collapsing Systems. *P. Mazzei & A. Curir.* 591, 784 (2003)

Spatial Analysis of the Hα Emission in the Local Star-forming UCM Galaxies. *Pablo G. Pérez-González, Jaime Zamorano, Jesús Gallego, Alfonso Aragón-Salamanca, & Armando Gil de Paz.* 591, 827 (2003)

Age and Abundance Discrimination in Old Stellar Populations Using Mid-Ultraviolet Colors. *Ben Dorman, Robert W. O'Connell, & Robert T. Rood.* 591, 878 (2003)

Large Disklike Galaxies at High Redshift. *Ivo Labbé, Gregory Rudnick, Marijn Franx, Emanuele Daddi, Pieter G. van Dokkum, Natascha M. Förster Schreiber, Konrad Kuijken, Alan Moorwood, Hans-Walter Rix, Huub Röttgering, Ignacio Trujillo, Arjen van der Wel, Paul van der Werf, & Lottie van Starkenburg.* 591, L95 (2003)

Relativistic Cosmology Number Counts and the Luminosity Function. *Marcelo B. Ribeiro & William R. Stoeger.* 592, 1 (2003)

Barred Galaxies at $z > 0.7$: NICMOS Hubble Deep Field–North Observations. *Kartik Sheth, Michael W. Regan, Nicholas Z. Scoville, & Linda E. Strubbe.* 592, L13 (2003)

Evidence of a Significant Intermediate-Age Population in the M31 Halo from Main-Sequence Photometry. *Thomas M. Brown, Henry C. Ferguson, Ed Smith, Randy A. Kimble, Allen V. Sweigart, Alvio Renzini, R. Michael Rich, & Don A. VandenBerg.* 592, L17 (2003)

The Relationship between Stellar Light Distributions of Galaxies and Their Formation Histories. *Christopher J. Conselice.* 147, 1 (2003)

Palomar/Las Campanas Imaging Atlas of Blue Compact Dwarf Galaxies. I. Images and Integrated Photometry. *A. Gil de Paz, B. F. Madore, & O. Pevunova.* 147, 29 (2003)

Lyman Break Galaxies at Redshift $z \sim 3$: Survey Description and Full Data Set. *Charles C. Steidel, Kurt L. Adelberger, Alice E. Shapley, Max Pettini, Mark Dickenson, & Mauro Giavalisco.* 592, 728 (2003)

A *Chandra* Survey of the Nearest Ultraluminous Infrared Galaxies: Obscured Active Galactic Nuclei or Superstarbursts? *A. Ptak, T. Heckman, N. A. Levenson, K. Weaver, & D. Strickland.* 592, 782 (2003)

The Ages and Abundances of a Sample of Globular Clusters in M49 (NGC 4472). *Judith G. Cohen, J. P. Blakeslee, & P. Côté.* 592, 866 (2003)

On the Assembly History of Early-Type Galaxies in the Hubble Deep Field–North. *Pieter van Dokkum & Richard S. Ellis.* 592, L53 (2003)

Black Hole Growth and Activity in a Λ Cold Dark Matter Universe. *Tiziana Di Matteo, Rupert A. C. Croft, Volker Springel, & Lars Hernquist.* 593, 56 (2003)

C II* Absorption in Damped Lyα Systems. I. Star Formation Rates in a Two-Phased Medium. *Arthur M. Wolfe, Jason X. Prochaska, & Eric Gawiser.* 593, 215 (2003)

C II* Absorption in Damped Lyα Systems. I. A New Window on the Star Formation History of the Universe. *Arthur M. Wolfe, Eric Gawiser, & Jason X. Prochaska.* 593, 235 (2003)

Constraints on a Universal Initial Mass Function from Ultraviolet to Near-Infrared Galaxy Luminosity Densities. *Ivan K. Baldry & Karl Glazebrook.* 593, 258 (2003)

On the Origin of Intracluster Entropy. *G. Mark Voit, Michael L. Balogh, Richard G. Bower, Cedric G. Lacey, & Greg L. Bryan.* 593, 272 (2003)

Roche Lobe Overflow from Dwarf Stellar Systems. *Stephen D. Murray, Shawfeng Dong, & Douglas N. C. Lin.* 593, 301 (2003)

Deep Near-Infrared Mapping of Young and Old Stars in Blue Compact Dwarf Galaxies. *Luz M. Cairós, Nicola Caon, Polychronis Papaderos, Kai Noeske, Jose M. Vílchez, Begoña García Lorenzo, & Casiana Muñoz-Tuñón.* 593, 312 (2003)

Eddington Accretion and QSO Emission Lines at $z \sim 2$. *Michael Juntao Yuan & Beverley J. Wills.* 593, L11 (2003)

Star Formation at the Twilight of the Dark Ages: Which Stars Reionized the Universe? *Rachel S. Somerville & Mario Livio.* 593, 611 (2003)

The Epoch of Reionization in Models with Reduced Small-Scale Power. *Rachel S. Somerville, James S. Bullock, & Mario Livio.* 593, 616 (2003)

Constraints on the Equation of State of Dark Energy and the Hubble Constant from Stellar Ages and the Cosmic Microwave Background. *Raul Jimenez, Licia Verde, Tommaso Treu, & Daniel Stern.* 593, 622 (2003)

Luminous Lyman Break Galaxies at $z > 5$ and the Source of Reionization. *Matthew D. Lehnert & Malcolm Bremer.* 593, 630 (2003)

Cloning Dropouts: Implications for Galaxy Evolution at High Redshift. *Rychard Bouwens, Tom Broadhurst, & Garth Illingworth.* 593, 640 (2003)

The Formation of Galaxy Stellar Cores by the Hierarchical Merging of Supermassive Black Holes. *Marta Volonteri, Piero Madau, & Francesco Haardt.* 593, 661 (2003)

Discovery of Eight New Extremely Metal-poor Galaxies in the Sloan Digital Sky Survey. *Alexei Y. Kniazev, Eva K. Grebel, Lei Hao, Michael A. Strauss, Jonathan Brinkmann, & Masataka Fukugita.* 593, L73 (2003)

Beyond the Hubble Deep Field Limiting Magnitude: Faint Galaxy Number Counts from Surface Brightness Fluctuations. *A. Marín-Franch & A. Aparicio.* 594, 63 (2003)

Role of Clusters of Galaxies in the Evolution of the Metal Budget in the Universe. *A. Finoguenov, A. Burkert, & H. Böhringer.* 594, 136 (2003)

CO (3–2) Observations of Early-Type Galaxies with the Heinrich Hertz Telescope. *B. Vila-Vilaró, J. Cepa, & H. M. Butner.* 594, 232 (2003)

The Assembly of Massive Galaxies from Near-Infrared Observations of the Hubble Deep Field–South. *A. Fontana, I. Donnarumma, E. Vanzella, E. Giallongo, N. Menci, M. Nonino, P. Saracco, S. Cristiani, S. D'Odorico, & F. Poli.* 594, L9 (2003)

Chandra Observations of Expanding Shells in the Dwarf Starburst Galaxy NGC 3077. *Jürgen Ott, Crystal L. Martin, & Fabian Walter.* 594, 776 (2003)

Massive Stars and the Energy Balance of the Interstellar Medium. I. The Impact of an Isolated 60 $M_\odot$ Star. *Tim Freyer, Gerhard Hensler, & Harold W. Yorke.* 594, 888 (2003)

Signatures of Galaxy Formation in the Intracluster Medium. *G. Mark Voit & Trevor J. Ponman.* 594, L75 (2003)

Relaxation of a Collisionless System and the Transition to a New Equilibrium Velocity Distribution. *Thomas E. C. Merrall & Richard N. Henriksen.* 595, 43 (2003)

Angular Clustering with Photometric Redshifts in the Sloan Digital Sky Survey: Bimodality in the Clustering Properties of Galaxies. *Tamás Budavári, Andrew J. Connolly, Alexander S. Szalay, István Szapudi, István Csabai, Ryan Scranton, Neta A. Bahcall, Jon Brinkmann, Daniel J. Eisenstein, Joshua A. Frieman, Masataka Fukugita, James E. Gunn, David Johnston, Stephen Kent, Jon N. Loveday, Robert H. Lupton, Max Tegmark, Aniruddha R. Thakar, Brian Yanny, Donald G. York, & Idit Zehavi.* 595, 59 (2003)

K_s Number Counts in the Groth and Coppi Fields. *David Cristóbal-Hornillos, Marc Balcells, Mercedes Prieto, Rafael Guzmán, Jesús Gallego, Nicolás Cardiel, Ángel Serrano, & Roser Pelló.* 595, 71 (2003)

On the Invariant Distribution of Galaxies in the r_e-$\langle\mu\rangle_e$ Plane out to $z = 0.64$. *F. La Barbera, G. Busarello, P. Merluzzi, M. Massarotti, & M. Capaccioli.* 595, 127 (2003)

Damped Lyα Gas Metallicities at Redshifts $z = 0.9$–2.0 from Sloan Digital Sky Survey Spectra. *Daniel B. Nestor, Sandhya M. Rao, David A. Turnshek, & Daniel Vanden Berk.* 595, L5 (2003)

Long-lived Double-barred Galaxies: Critical Mass and Length Scales. *Amr A. El-Zant & Isaac Shlosman.* 595, L41 (2003)

Star Formation at $z \sim 6$: i-Dropouts in the Advanced Camera for Surveys Guaranteed Time Observation Fields. *R. J. Bouwens, G. D. Illingworth, P. Rosati, C. Lidman, T. Broadhurst, M. Franx, H. C. Ford, D. Magee, N. Benítez, J. P. Blakeslee, G. R. Meurer, M. Clampin, G. F. Hartig, D. R. Ardila, F. Bartko, R. A. Brown, C. J. Burrows, E. S. Cheng, N. J. G. Cross, P. D. Feldman, D. A. Golimowski, C. Gronwall, L. Infante, R. A. Kimble, J. E. Krist, M. P. Lesser, A. R. Martel, F. Menanteau, G. K. Miley, M. Postman, M. Sirianni, W. B. Sparks, H. D. Tran, Z. I. Tsvetanov, R. L. White, & W. Zheng.* 595, 589 (2003)

The Munich Near-Infrared Cluster Survey. II. The K-Band Luminosity Function of Field Galaxies to $z \sim 1.2$. *N. Drory, R. Bender, G. Feulner, U. Hopp, C. Maraston, J. Snigula, & G. J. Hill.* 595, 698 (2003)

Probing beyond the Epoch of Hydrogen Reionization with 21 Centimeter Radiation. *Benedetta Ciardi & Piero Madau.* 596, 1 (2003)

Galaxy Formation: Cold Dark Matter, Feedback, and the Hubble Sequence. *Jesper Sommer-Larsen, Martin Götz, & Laura Portinari.* 596, 47 (2003)

Evolution of Cluster Elliptical Galaxies. *L. Felipe Barrientos & Simon J. Lilly.* 596, 129 (2003)

Evidence for a Major Merger Origin of High Redshift Sub-millimeter Galaxies. *Christopher J. Conselice, Scott C. Chapman, & Rogier A. Windhorst.* 596, L5 (2003)

Hierarchical Structure Formation and Chemical Evolution of Damped Lyα Systems. *Yong-Zhong Qian & G. J. Wasserburg.* 596, L9 (2003)

The Changing Active Galactic Nucleus Population. *A. T. Steffen, A. J. Barger, L. L. Cowie, R. F. Mushotzky, & Y. Yang.* 596, L23 (2003)

The Cosmic Evolution of the Galaxy Luminosity Density. *Francesco Calura & Francesca Matteucci.* 596, 734 (2003)

Star Formation History and Other Properties of the Northern Hubble Deep Field. *Rodger I. Thompson.* 596, 748 (2003)

Clustering of Galaxies at $z \sim 3$ Around the Probable Damped Lyα Absorber Toward QSO APM 08279+5255. *Nicolas Bouche & James D. Lowenthal.* 596, 810 (2003)

Host Galaxies of Low-Z Radio-loud Quasars: A Search of *Hubble Space Telescope* Archives. *Claudio Pagani, Renato Falomo, & Aldo Treves.* 596, 830 (2003)

Star Formation and Feedback in Dwarf Galaxies. *Shawfeng Dong, D. N. C. Lin, & S. D. Murray.* 596, 930 (2003)

Early Star Formation Traced by the Highest Redshift Quasars. *R. Maiolino, Y. Juarez, R. Mujica, N. M. Nagar, & E. Oliva.* 596, L155 (2003)

Discovery of a Double Ring in the Dwarf Galaxy Markarian 409. *A. Gil de Paz, B. F. Madore, K. Noeske, L. M. Cairós, P. Papaderos, & S. A. Silich.* 596, L179 (2003)

Andromeda VIII: A New Tidally Distorted Satellite of M31. *Heather L. Morrison, Paul Harding, Denise Hurley-Keller, & George Jacoby.* 596, L183 (2003)

Simulations of Galaxy Formation in a Λ Cold Dark Matter Universe. II. The Fine Structure of Simulated Galactic Disks. *Mario G. Abadi, Julio F. Navarro, Matthias Steinmetz, & Vincent R. Eke.* 597, 21 (2003)

Lyman Break Galaxies and Reionization of the Universe. *A. Gayler Harford & Nickolay Y. Gnedin.* 597, 74 (2003)

Supermassive Black Hole Binaries as Galactic Blenders. *Henry E. Kandrup, Ioannis V. Sideris, Balša Terzić, & Courtlandt L. Bohn.* 597, 111 (2003)

The Environment of Active Galactic Nuclei in the Sloan Digital Sky Survey. *Christopher J. Miller, Robert C. Nichol, Percy L. Gómez, Andrew M. Hopkins, & Mariangela Bernardi.* 597, 142 (2003)

Capturing a Star Formation Burst in Galaxies Infalling onto the Cluster A1367. *G. Gavazzi, L. Cortese, A. Boselli, J. Iglesias-Paramo, J. M. Vílchez, & L. Carrasco.* 597, 210 (2003)

The DEEP Groth Strip Survery. IX. Evolution of the Fundamental Plane of Field Galaxies. *Karl Gebhardt, S. M. Faber, David C. Koo, Myungshin Im, Luc Simard, Garth D. Illingworth, Andrew C. Phillips, Vicki L. Sarajedini, Nicole P. Vogt, Benjamin Weiner, & Christopher N. A. Willmer.* 597, 239 (2003)

Dependence of Dust Obscuration on Star Formation Rates in Galaxies. *J. Afonso, A. Hopkins, B. Mobasher, & C. Almeida.* 597, 269 (2003)

The Canada-UK Deep Submillimeter Survey. VII. Optical and Near-Infrared Identifications for the 14 Hour Field. *T. M. A. Webb, S. J. Lilly, D. L. Clements, S. Eales, M. Yun, M. Brodwin, L. Dunne, & W. K. Gear.* 597, 680 (2003)

The Nature of Damped Lyα Absorbing Galaxies at $z \leq 1$: A Photometric Redshift Survey of Damped Lyα Absorbers. *Hsiao-Wen Chen & Kenneth M. Lanzetta.* 597, 706 (2003)

The Metallicities of Star-forming Galaxies at Intermediate Redshifts $0.47 < z < 0.92$. *Simon J. Lilly, C. Marcella Carollo, & Alan N. Stockon.* 597, 730 (2003)

Adaptive Optics Imaging and Spectroscopy of Cygnus A. I. Evidence for a Minor Merger. *Gabriela Canalizo, Claire Max, David Whysong, Robert Antonucci, & Scott E. Dahm.* 597, 823 (2003)

Statistical Properties of Collisionless Equal- and Unequal-Mass Merger Remnants of Disk Galaxies. *Thorsten Naab & Andreas Burkert.* 597, 893 (2003)

Interferometric Observations of Powerful CO Emission from Three Submillimeter Galaxies at $z = 2.39$, 2.51, and 3.35. *R. Neri, R. Genzel, R. J. Ivison, F. Bertoldi, A. W. Blain, S. C. Chapman, P. Cox, T. R. Greve, A. Omont, & D. T. Frayer.* 597, L113 (2003)

The K-selected Butcher-Oemler Effect. *Roberto De Propris, S. A. Stanford, Peter R. Eisenhardt, & Mark Dickinson.* 598, 20 (2003)

Galaxies under the Cosmic Microscope: A Gemini Multiobject Spectrograph Study of the Lensed Disk Galaxy 289 in A2218. *A. M. Swinbank, J. Smith, R. G. Bower, A. Bunker, I. Smail, R. S. Ellis, Graham P. Smith, J.-P. Kneib, M. Sullivan, & J. Allington-Smith.* 598, 162 (2003)

The Submillimeter Properties of Broad Absorption Line Quasars. *Chris J. Willot, Steve Rawlings, & Jennifer A. Grimes.* 598, 909 (2003)

Galactic-Field Initial Mass Functions of Massive Stars. *Pavel Kroupa & Carsten Weidner.* 598, 1076 (2003)

Internal Kinematics of Spiral Galaxies in Distant Clusters. *B. L. Ziegler, A. Böhm, K. Jäger, J. Heidt, & C. Möllenhoff.* 598, L87 (2003)

What Shapes the Luminosity Function of Galaxies? *A. J. Benson, R. G. Bower, C. S. Frenk, C. G. Lacey, C. M. Baugh, & S. Cole.* 599, 38 (2003)

Chandra Detections of SCUBA Galaxies around High-z Radio Sources. *Ian Smail, C. A. Scharf, R. J. Ivison, J. A. Stevens, R. G. Bower, & J. S. Dunlop.* 599, 86 (2003)

Hubble Space Telescope Images of Submillimeter Sources: Large Irregular Galaxies at High Redshift. *S. C. Chapman, R. Windhorst, S. Odewahn, H. Yan, & C. Conselice.* 599, 92 (2003)

The Nature of Starburst Activity in M82. *N. M. Förster Schreiber, R. Genzel, D. Lutz, & A. Sternberg.* 599, 193 (2003)

The Rest-Frame Optical Luminosity Density, Color, and Stellar Mass Density of the Universe from $z = 0$ to $z = 3$. *Gregory Rudnick, Hans-Walter Rix, Marijn Franx, Ivo Labbé, Michael Blanton, Emanuele Daddi, Natascha M. Förster Schreiber, Alan Moorwood, Huub Röttgering, Ignacio Trujillo, Arjen van de Wel, Paul van der Werf, Pieter G. van Dokkum, & Lottie van Starkenburg.* 599, 847 (2003)

The Nature of E+A Galaxies in Intermediate Redshift Clusters. *Kim-Vy H. Tran, Marijn Franx, Garth Illingworth, Daniel D. Kelson, & Pieter van Dokkum.* 599, 865 (2003)

Star Formation Rate Indicators in the Sloan Digital Sky Survey. *A. M. Hopkins, C. J. Miller, R. C. Nichol, A. J. Connolly, M. Bernardi, P. L. Gómez, T. Goto, C. A. Tremonti, J. Brinkmann, Ž. Ivezić, & D. Q. Lamb.* 599, 971 (2003)

The DEEP2 Galaxy Redshift Survey: Spectral Classification of Galaxies at $z \sim 1$. *Darren S. Madgwick, Alison L. Coil, Christopher J. Conselice, Michael C. Cooper, Marc Davis, Richard S. Ellis, Sandy M. Faber, Douglas P. Finkbeiner, Brian Gerke, Puragra Guhathakurta, Nick Kaiser, David C. Koo, Jeffrey A. Newman, Andrew C. Phillips, Charles C. Steidel, Benjamin J. Weiner, Christopher N. A. Willmer, & R. Yan.* 599, 997 (2003)

The DEEP Groth Strip Survey. VII. The Metallicity of Field Galaxies at $0.26 < z < 0.82$ and the Evolution of the Luminosity-Metallicity Relation. *Henry A. Kobulnicky, Christopher N. A. Willmer, Andrew C. Phillips, David C. Koo, S. M. Faber, Benjamin J. Weiner, Vicki L. Sarajedini, Luc Simard, & Nicole P. Vogt.* 599, 1006 (2003)

Measuring Global Galaxy Metallicities Using Emission-Line Equivalent Widths. *Henry A. Kobulnicky & Andrew C. Phillips.* 599, 1031 (2003)

Limits on the Evolution of Galaxies from the Statistics of Gravitational Lenses. *Kyu-Hyun Chae & Shude Mao.* 599, L61 (2003)

The Discovery of Globular Clusters in the Protospiral Galaxy NGC 2915: Implications for Hierarchical Galaxy Evolution. *Gerhardt R. Meurer, J. P. Blakeslee, M. Sirianni, H. C. Ford, G. D. Illingworth, N. Benítez, M. Clampin, F. Menanteau, H. D. Tran, R. A. Kimble, G. F. Hartig, D. R. Ardila, F. Bartko, R. J. Bouwens, T. J. Broadhurst, R. A. Brown, C. J. Burrows, E. S. Cheng, N. J. G. Cross, P. D. Feldman, D. A. Golimowski, C. Gronwall, L. Infante, J. E. Krist, M. P. Lesser, A. R. Martel, G. K. Miley, M. Postman, P. Rosati, W. B. Sparks, Z. I. Tsvetanov, R. L. White, & W. Zheng.* 599, L83 (2003)

The Optical and Near-Infrared Properties of Galaxies. I. Luminosity and Stellar Mass Functions. *Eric F. Bell, Daniel H. McIntosh, Neal Katz, & Martin D. Weinberg.* 149, 289 (2003)

GALAXIES: FORMATION

The Canada–United Kingdom Deep Submillimeter Survey. V. The Submillimeter Properties of Lyman Break Galaxies. *T. M. Webb, S. Eales, S. Foucaud, S. J. Lilly, H. McCracken, K. Adelberger, C. Steidel, A. Shapley, D. L. Clements, L. Dunne, O. Le Fèvre, M. Brodwin, & W. Gear.* 582, 6 (2003)

The Chemical Uniformity of High-z Damped Lyα Protogalaxies. *Jason X. Prochaska.* 582, 49 (2003)

Structure of Disk-dominated Galaxies. II. Bulge/Disk Parameters, Simulations, and Secular Evolution. *Lauren A. MacArthur, Stephanie Courteau, & Jon A. Holtzman.* 582, 689 (2003)

Probing the Reionization History of the Universe using the Cosmic Microwave Background Polarization. *Manoj Kaplinghat, Mike Chu, Zoltan Haiman, Gilbert P. Holder, Lloyd Knox, & Constantinos Skordis.* 583, 24 (2003)

Protoquasars: Physical States and Observable Properties. *Nozomu Kawakatu, Masayuki Umemura, & Masao Mori.* 583, 85 (2003)

Linear Gas Dynamics in the Expanding Universe. *Nickolay Y. Gnedin, Emily J. Baker, Thomas J. Bethell, Meredith M. Drosback, A. Gayler Harford, Amalia K. Hicks, Adam G. Jensen, Brian A. Keeney, Christopher M. Kelso, Mark C. Neyrinck, Scott E. Pollack, & Timothy P. van Vliet.* 583, 525 (2003)

A SCUBA Galaxy in the Protocluster around 53W002 at $z = 2.4$. *Ian Smail, R. J. Ivison, D. G. Gilbank, J. S. Dunlop, W. C. Keel, K. Motohara, & J. A. Stevens.* 583, 551 (2003)

The Structure and Dynamics of Luminous and Dark Matter in the Early-Type Lens Galaxy of 0047−281 at $z = 0.485$. *Léon V. E. Koopmans & Tommaso Treu.* 583, 606 (2003)

Galaxies and Intergalactic Matter at Redshift $z \sim 3$: Overview. *Kurt L. Adelberger, Charles C. Steidel, Alice E. Shapley, & Max Pettini.* 584, 45 (2003)

The State of Galaxy Formation in the Local Universe. *D. J. Pisano & Eric M. Wilcots.* 584, 228 (2003)

Spatially Resolved Millimeter Interferometry of SMM J02399−0136: A Very Massive Galaxy at $z = 2.8$. *Reinhard Genzel, Andrew J. Baker, Linda J. Tacconi, Dieter Lutz, Pierre Cox, Stéphane Guilloteau, & Alain Omont.* 584, 633 (2003)

Thermodynamic Description of a Family of Partially Relaxed Stellar Systems. *G. Bertin & M. Trenti.* 584, 729 (2003)

The Redshift Evolution of the 2–8 keV X-Ray Luminosity Function. *L. L. Cowie, A. J. Barger, M. Bautz, W. N. Brandt, & G. P. Garmire.* 584, L57 (2003)

Very High Redshift X-Ray–selected Active Galactic Nuclei in the *Chandra* Deep Field–North. *A. J. Barger, L. L. Cowie, P. Capak, D. M. Alexander, F. E. Bauer, W. N. Brandt, G. P. Garmire, & A. E. Hornschemeier.* 584, L61 (2003)

The Properties of Microjansky Radio Sources in the Hubble Deep Field–North, SSA 13, and SSA 22 Fields. *S. C. Chapman, A. J. Barger, L. L. Cowie, D. Scott, C. Borys, P. Capak, E. B. Fomalont, G. F. Lewis, E. A. Richards, A. T. Steffen, G. Wilson, & M. Yun.* 585, 57 (2003)

Predictions for the Counts of Faint, High-Redshift Galaxies in the Mid-Infrared. *Zoltán Haiman, David N. Spergel, & Edwin L. Turner.* 585, 630 (2003)

Properties of the Brightest Cluster Galaxy and Its Host Cluster. *Haruyoshi Katayama, Kiyoshi Hayashida, Fumio Takahara, & Yutaka Fujita.* 585, 687 (2003)

Intergalactic Globular Clusters and the Faint End of the Galaxy Number Counts in A1656 (Coma). *A. Marín-Franch & A. Aparicio.* 585, 714 (2003)

Gravitational Potential Reconstruction from Peculiar Velocity and Weak Lensing Measurements. *Olivier Doré, Lloyd Knox, & Alan Peel.* 585, L81 (2003)

The Discovery of a Very Narrow Line Star-forming Object at a Redshift of 5.66. *Yoshiaki Taniguchi, Masaru Ajiki, Takashi Murayama, Tohru Nagao, Sylvain Veilleux, David B. Sanders, Yutaka Komiyama, Yasuhiro Shioya, Shinobu S. Fujita, Yuko Kakazu, Sadanori Okamura, Hiroyasu Ando, Tetsuo Nishimura, Masahiko Hayashi, Ryusuke Ogasawara, & Shin-ichi Ichikawa.* 585, L97 (2003)

Three Epochs of Star Formation in the High-Redshift Universe. *Jonathan Mackey, Volker Bromm, & Lars Hernquist.* 586, 1 (2003)

The Magnesium–Velocity Dispersion Relation and the Genesis of Early-Type Galaxies. *Guy Worthey & Maela Collobert.* 586, 17 (2003)

The Influence of Ω_b on High-Redshit Structure. *Jeffrey P. Gardner, Neal Katz, Lars Hernquist, & David H. Weinberg.* 587, 1 (2003)

Numerical Simulations of High-Redshift Star Formation in Dwarf Galaxies. *Konstantinos Tassis, Tom Abel, Greg L. Bryan, & Michael L. Norman.* 587, 13 (2003)

The Canada-UK Deep Submillimeter Survey. VI. The 3 Hour Field. *T. M. Webb, S. A. Eales, S. J. Lilly, D. L. Clements, L. Dunne, W. K. Gear, R. J. Ivison, H. Flores, & M. Yun.* 587, 41 (2003)

A 3×10^9 $M_\odot$ Black Hole in the Quasar SDSS J1148+5251 at $z = 6.41$. *Chris J. Willott, Ross J. McLure, & Matt J. Jarvis.* 587, L15 (2003)

Environmental Effects on Evolution of Cluster Galaxies in a Λ-dominated Cold Dark Matter Universe. *Takashi Okamoto & Masahiro Nagashima.* 587, 500 (2003)

A European Southern Observatory Very Large Telescope Survey of Near-Infrared ($Z \leq 25$) Selected Galaxies at Redshifts $4.5 < z < 6$: Constraining the Cosmic Star Formation Rate near the Reionization Epoch. *A. Fontana, F. Poli, N. Menci, M. Nonino, E. Giallongo, S. Cristiani, & S. D'Odorico.* 587, 544 (2003)

Bars and Dark Matter Halo Cores. *J. A. Sellwood.* 587, 638 (2003)

Quasar Evolution Driven by Galaxy Encounters in Hierarchical Structures. *N. Menci, A. Cavaliere, A. Fontana, E. Giallongo, F. Poli, & V. Vittorini.* 587, L63 (2003)

Spectroscopic Confirmation of a Substantial Population of Luminous Red Galaxies at Redshifts $z \gtrsim 2$. *Pieter G. van Dokkum, Natascha M. Förster Schreiber, Marijn Franx, Emanuele Daddi, Garth D. Illingworth, Ivo Labbé, Alan Moorwood, Hans-Walter Rix, Huub Röttgering, Gregory Rudnick, Arjen van der Wel, Paul van der Werf, & Lottie van Starkenburg.* 587, L83 (2003)

Detection of Strong Clustering of Red K-selected Galaxies at $2 < z_{\rm phot} < 4$ in the Hubble Deep Field–South. *E. Daddi, H. J. A. Röttgering, I. Labbé, G. Rudnick, M. Franx, A. F. M. Moorwood, H. W. Rix, P. P. van der Werf, & P. G. van Dokkum.* 588, 50 (2003)

The Bivariate Luminosity-Color Distribution of *IRAS* Galaxies and Implications for the High-Redshift Universe. *S. C. Chapman, G. Helou, G. F. Lewis, & D. A. Dale.* 588, 186 (2003)

Cosmological Origin of the Stellar Velocity Dispersions in Massive Early-Type Galaxies. *Abraham Loeb & P. J. E. Peebles.* 589, 29 (2003)

The Detectability of the First Stars and Their Cluster Enrichment Signatures. *Evan Scannapieco, Raffaella Schneider, & Andrea Ferrara.* 589, 35 (2003)

Formation of the First Stars by Accretion. *Kazuyuki Omukai & Francesco Palla.* 589, 677 (2003)

Substructure in the Andromeda Galaxy Globular Cluster System. *K. M. Perrett, D. A. Stiff, D. A. Hanes, & T. J. Bridges.* 589, 790 (2003)

On the Origin of the Global Schmidt Law of Star Formation. *Andrey V. Kravtsov.* 590, L1 (2003)

Simulations of Galaxy Formation in a ΛCDM Universe. III. The Dissipative Formation of an Elliptical Galaxy. *Andrés Meza, Julio F. Navarro, Matthias Steinmetz, & Vincent R. Eke.* 590, 619 (2003)

The Far-Infrared Background Correlation with Cosmic Microwave Background Lensing. *Yong-Seon Song, Asantha Cooray, Lloyd Knox, & Matias Zaldarriaga.* 590, 664 (2003)

Differences in Carbon and Nitrogen Abundances between Field and Cluster Early-Type Galaxies. *P. Sánchez-Blázquez, J. Gorgas, N. Cardiel, J. Cenarro, & J. J. González.* 590, L91 (2003)

Karhunen-Loève Estimation of the Power Spectrum Parameters from the Angular Distribution of Galaxies in Early Sloan Digital Sky Survey Data. *Alexander S. Szalay, Bhuvnesh Jain, Takahiko Matsubara, Ryan Scranton, Michael S. Vogeley, Andrew Connelly, Scott Dodelson, Daniel Eisenstein, Joshua A. Frieman, James E. Gunn, Lam Hui, David Johnston, Stephen Kent, Martin Kerscher, Jon Loveday, Avery Meiksin, Vijay Narayanan, Robert C. Nichol, Liam O'Connell, Adrian Pope, Roman Scoccimarro, Ravi K. Sheth, Albert Stebbins, Michael A. Strauss, István Szapudi, Max Tegmark, Idit Zehavi, James Annis, Neta Bahcall, Jon Brinkmann, István Csabai, Masataka Fukugita, Greg Hennessy, Željko Ivezić, Gillian R. Knapp, Peter A. Kunszt, Don Q. Lamb, Brian C. Lee, Robert H. Lupton, Jeffrey A. Munn, John Peoples, Jeffrey R. Pier, Constance Rockosi, David Schlegel, Christopher Stoughton, Douglas L. Tucker, Brian Yanny, & Donald G. York.* 591, 1 (2003)

Feedback from the First Supernovae in Protogalaxies: The Fate of the Generated Metals. *Keiichi Wada & Aparna Venkatesan.* 591, 38 (2003)

Decline of the Space Density of Quasars between $z = 2$ and $z = 4$. *M. Vigotti, R. Carballo, C. R. Benn, G. De Zotti, R. Fanti, J. I. Gonzalez Serrano, K.-H. Mack, & J. Holt.* 591, 43 (2003)

A Wide-Field *Hubble Space Telescope* Study of the Cluster Cl 0024+16 at $z = 0.4$. I. Morphological Distributions to 5 Mpc Radius. *Tommaso Treu, Richard S. Ellis, Jean-Paul Kneib, Alan Dressler, Ian Smail, Oliver Czoske, Augustus Oemler, & Priyamvada Natarajan.* 591, 53 (2003)

On the Origin of Lyα Blobs at High Redshift: Kinematic Evidence of a Hyperwind Galaxy at $z = 3.1$. *Youichi Ohyama, Yoshiaki Taniguchi, Koji S. Kawabata, Yasuhiro Shioya, Takashi Murayama, Tohru Nagao, Tadafumi Takata, Masanori Iye, & Michitoshi Yoshida.* 591, L9 (2003)

Simulations of Galaxy Formation in a Λ Cold Dark Matter Universe. I. Dynamical and Photometric Properties of a Simulated Disk Galaxy. *Mario G. Abadi, Julio F. Navarro, Matthias Steinmetz, & Vincent R. Eke.* 591, 499 (2003)

High-Redshift Candidates and the Nature of Small Galaxies in the Hubble Deep Field. *Lisa J. Storrie-Lombardi, Ray J. Weymann, & Rodger I. Thompson.* 591, 623 (2003)

Dark and Luminous Matter Connections from Smoothed Particle Hydrodynamic Simulations of Isolated Triaxial Collapsing Systems. *P. Mazzei & A. Curir.* 591, 784 (2003)

Barred Galaxies at $z > 0.7$: NICMOS Hubble Deep Field–North Observations. *Kartik Sheth, Michael W. Regan, Nicholas Z. Scoville, & Linda E. Strubbe.* 592, L13 (2003)

The Relationship between Stellar Light Distributions of Galaxies and Their Formation Histories. *Christopher J. Conselice.* 147, 1 (2003)

Simulations of Early Structure Formation: Primordial Gas Clouds. *Naoki Yoshida, Tom Abel, Lars Hernquist, & Naoshi Sugiyama.* 592, 645 (2003)

Giant Lyα Nebulae Associated with High-Redshift Radio Galaxies. *Michiel Reuland, Wil van Breugel, Huub Röttgering, Wim de Vries, S. A. Stanford, Arjun Dey, Mark Lacy, Joss Bland-Hawthorn, Michael Dopita, & George Miley.* 592, 755 (2003)

The Ages and Abundances of a Sample of Globular Clusters in M49 (NGC 4472). *Judith G. Cohen, J. P. Blakeslee, & P. Côté.* 592, 866 (2003)

On the Assembly History of Early-Type Galaxies in the Hubble Deep Field–North. *Pieter van Dokkum & Richard S. Ellis.* 592, L53 (2003)

An Upper Limit on the Granularity of the Local Stellar Halo. *Andrew Gould.* 592, L63 (2003)

On the Origin of the Inner Structure of Halos. *Alberto Manrique, Andreu Raig, Eduard Salvador-Solé, Teresa Sanchis, & José María Solanes.* 593, 26 (2003)

The Evolution of the Galaxy Luminosity Function in the Rest-Frame Blue Band up to $z = 3.5$. *F. Poli, E. Giallongo, A. Fontana, N. Menci, G. Zamorani, M. Nonino, P. Saracco, E. Vanzella, I. Donnarumma, S. Salimbeni, A. Cimatti, S. Cristiani, E. Daddi, S. D'Odorico, M. Mignoli, L. Pozzetti, & A. Renzini.* 593, L1 (2003)

Luminous Lyman Break Galaxies at $z > 5$ and the Source of Reionization. *Matthew D. Lehnert & Malcolm Bremer.* 593, 630 (2003)

Beyond the Hubble Deep Field Limiting Magnitude: Faint Galaxy Number Counts from Surface Brightness Fluctuations. *A. Marín-Franch & A. Aparicio.* 594, 63 (2003)

The Tully-Fisher Relation of Barred Galaxies. *Stéphane Courteau, David R. Andersen, Matthew A. Bershady, Lauren A. MacArthur, & Hans-Walter Rix.* 594, 208 (2003)

The Assembly of Massive Galaxies from Near-Infrared Observations of the Hubble Deep Field–South. *A. Fontana, I. Donnarumma, E. Vanzella, E. Giallongo, N. Menci, M. Nonino, P. Saracco, S. Cristiani, S. D'Odorico, & F. Poli.* 594, L9 (2003)

XMM-Newton and *Chandra* Observations of the Galaxy Group NGC 5044. I. Evidence for Limited Multiphase Hot Gas. *David A. Buote, Aaron D. Lewis, Fabrizio Brighenti, & William G. Mathews.* 594, 741 (2003)

The Reionization History at High Redshifts. I. Physical Models and New Constraints from Cosmic Microwave Background Polarization. *Zoltán Haiman & Gilbert P. Holder.* 595, 1 (2003)

XMM-Newton and *Chandra* Observations of the Galaxy Group NGC 5044. II. Metal Abundances and Supernova Fraction. *David A. Buote, Aaron D. Lewis, Fabrizio Brighenti, & William G. Mathews.* 595, 151 (2003)

Damped Lyα Gas Metallicities at Redshifts $z = 0.9$–2.0 from Sloan Digital Sky Survey Spectra. *Daniel B. Nestor, Sandhya M. Rao, David A. Turnshek, & Daniel Vanden Berk.* 595, L5 (2003)

Star Formation at $z \sim 6$: i-Dropouts in the Advanced Camera for Surveys Guaranteed Time Observation Fields. *R. J. Bouwens, G. D. Illingworth, P. Rosati, C. Lidman, T. Broadhurst, M. Franx, H. C. Ford, D. Magee, N. Benítez, J. P. Blakeslee, G. R. Meurer, M. Clampin, G. F. Hartig, D. R. Ardila, F. Bartko, R. A. Brown, C. J. Burrows, E. S. Cheng, N. J. G. Cross, P. D. Feldman, D. A. Golimowski, C. Gronwall, L. Infante, R. A. Kimble, J. E. Krist, M. P. Lesser, A. R. Martel, F. Menanteau, G. K. Miley, M. Postman, M. Sirianni, W. B. Sparks, H. D. Tran, Z. I. Tsvetanov, R. L. White, & W. Zheng.* 595, 589 (2003)

Formation of the First Supermassive Black Holes. *Volker Bromm & Abraham Loeb.* 596, 34 (2003)

Galaxy Formation: Cold Dark Matter, Feedback, and the Hubble Sequence. *Jesper Sommer-Larsen, Martin Götz, & Laura Portinari.* 596, 47 (2003)

Discovery of a Clustered Quasar Pair at $z \approx 5$: Biased Peaks in Early Structure Formation. *S. G. Djorgovski, D. Stern, A. A. Mahabal, & R. Brunner.* 596, 67 (2003)

A Relation between Supermassive Black Hole Mass and Quasar Metallicity? *Craig Warner, Fred Hamann, & Matthias Dietrich.* 596, 72 (2003)

Evidence for a Major Merger Origin of High Redshift Sub-millimeter Galaxies. *Christopher J. Conselice, Scott C. Chapman, & Rogier A. Windhorst.* 596, L5 (2003)

The Changing Active Galactic Nucleus Population. *A. T. Steffen, A. J. Barger, L. L. Cowie, R. F. Mushotzky, & Y. Yang.* 596, L23 (2003)

Black Holes, Galaxy Formation, and the $M_{\rm BH}$-σ Relation. *Andrew King.* 596, L27 (2003)

Metallicity of the Intergalactic Medium Using Pixel Statistics. II. The Distribution of Metals as Traced by C IV. *Joop Schaye, Anthony Aguirre, Tae-Sun Kim, Tom Theuns, Michael Rauch, & Wallace L. W. Sargent.* 596, 768 (2003)

Star Formation and Feedback in Dwarf Galaxies. *Shawfeng Dong, D. N. C. Lin, & S. D. Murray.* 596, 930 (2003)

The First Supernova Explosions in the Universe. *Volker Bromm, Naoki Yoshida, & Lars Hernquist.* 596, L135 (2003)

The Probability Distribution Function of Light in the Universe: Results from Hydrodynamic Simulations. *Jeremiah P. Ostriker, Kentaro Nagamine, Renyue Cen, & Masataka Fukugita.* 597, 1 (2003)

Simulations of Galaxy Formation in a Λ Cold Dark Matter Universe. II. The Fine Structure of Simulated Galactic Disks. *Mario G. Abadi, Julio F. Navarro, Matthias Steinmetz, & Vincent R. Eke.* 597, 21 (2003)

Angular Momentum Distribution of Hot Gas and Implications for Disk Galaxy Formation. *D. N. Chen, Y. P. Jing, & Kohji Yoshikawa.* 597, 35 (2003)

On the Evolution of the Ionizing Emissivity of Galaxies and Quasars Required by the Hydrogen Reionization. *Jordi Miralda-Escudé.* 597, 66 (2003)

Lyman Break Galaxies and Reionization of the Universe. *A. Gayler Harford & Nickolay Y. Gnedin.* 597, 74 (2003)

The Canada-UK Deep Submillimeter Survey. VII. Optical and Near-Infrared Identifications for the 14 Hour Field. *T. M. A. Webb, S. J. Lilly, D. L. Clements, S. Eales, M. Yun, M. Brodwin, L. Dunne, & W. K. Gear.* 597, 680 (2003)

Conservation Laws in Smooth Particle Hydrodynamics: The DEVA Code. *A. Serna, R. Domínguez-Tenreiro, & A. Sáiz.* 597, 878 (2003)

Interferometric Observations of Powerful CO Emission from Three Submillimeter Galaxies at $z = 2.39$, 2.51, and 3.35. *R. Neri, R. Genzel, R. J. Ivison, F. Bertoldi, A. W. Blain, S. C. Chapman, P. Cox, T. R. Greve, A. Omont, & D. T. Frayer.* 597, L113 (2003)

The Importance of Spheroidal and Mixed Mergers for Early-Type Galaxy Formation. *S. Khochfar & A. Burkert.* 597, L117 (2003)

Effects of a Decaying Cosmological Term on the Formation of Molecules and First Objects. *M. Hashimoto, T. Kamikawa, & K. Arai.* 598, 13 (2003)

The K-selected Butcher-Oemler Effect. *Roberto De Propris, S. A. Stanford, Peter R. Eisenhardt, & Mark Dickinson.* 598, 20 (2003)

The Effects of Non-Gaussian Initial Conditions on the Structure and Substructure of Cold Dark Matter Halos. *Vladimir Avila-Reese, Pedro Colín, Gabriella Piccinelli, & Claudio Firmani.* 598, 36 (2003)

Halo Substructure and the Power Spectrum. *Andrew R. Zentner & James S. Bullock.* 598, 49 (2003)

Early Structure Formation and Reionization in a Cosmological Model with a Running Primordial Power Spectrum. *Naoki Yoshida, Aaron Sokasian, Lars Hernquist, & Volker Springel.* 598, 73 (2003)

Identifying Lenses with Small-Scale Structure. I. Cusp Lenses. *Charles R. Keeton, B. Scott Gaudi, & A. O. Petters.* 598, 138 (2003)

Galaxies under the Cosmic Microscope: A Gemini Multiobject Spectrograph Study of the Lensed Disk Galaxy 289 in A2218. *A. M. Swinbank, J. Smith, R. G. Bower, A. Bunker, I. Smail, R. S. Ellis, Graham P. Smith, J.-P. Kneib, M. Sullivan, & J. Allington-Smith.* 598, 162 (2003)

Infrared Spectroscopy of 15 Radio Galaxies at $2 < z < 2.6$. *Fumihide Iwamuro, Kentaro Motohara, Toshinori Maihara, Masahiko Kimura, Shigeru Eto, Takanori Shima, Daisaku Mochida, Shinpei Wada, Satoko Imai, & Kentaro Aoki.* 598, 178 (2003)

A Presolar Galactic Merger Spawned the SiC-Grain Mainstream. *Donald D. Clayton.* 598, 313 (2003)

Cosmological Mestel Disks and the Rossby Vortex Instability: The Origin of Supermassive Black Holes. *Stirling A. Colgate, Renyue Cen, Hui Li, Nathan Currier, & Michael S. Warren.* 598, L7 (2003)

Small-Scale Cosmic Microwave Background Temperature and Polarization Anisotropies due to Patchy Reionization. *Mário G. Santos, Asantha Cooray, Zoltán Haiman, Lloyd Knox, & Chung-Pei Ma.* 598, 756 (2003)

What Shapes the Luminosity Function of Galaxies? *A. J. Benson, R. G. Bower, C. S. Frenk, C. G. Lacey, C. M. Baugh, & S. Cole.* 599, 38 (2003)

The Influence of Supershells and Galactic Outflows on the Escape of Ionizing Radiation from Dwarf Starburst Galaxies. *Akima Fujita, Crystal L. Martin, Mordecai-Mark Mac Low, & Tom Abel.* 599, 50 (2003)

Chandra Detections of SCUBA Galaxies around High-z Radio Sources. *Ian Smail, C. A. Scharf, R. J. Ivison, J. A. Stevens, R. G. Bower, & J. S. Dunlop.* 599, 86 (2003)

Hubble Space Telescope Images of Submillimeter Sources: Large Irregular Galaxies at High Redshift. *S. C. Chapman, R. Windhorst, S. Odewahn, H. Yan, & C. Conselice.* 599, 92 (2003)

Mapping the Cosmic Web with Lyα Emission. *Steven R. Furlanetto, Joop Schaye, Volker Springel, & Lars Hernquist.* 599, L1 (2003)

Improvements in the M-T Relation, Mass Function, and Measured Value of Ω_m through Cluster Evolution. *A. Del Popolo.* 599, 723 (2003)

Observing H_2 Emission in Forming Galaxies. *Kazuyuki Omukai & Tetsu Kitayama.* 599, 738 (2003)

The Mass Spectrum of Metal-free Stars Resulting from Photodissociation Feedback: A Scenario for the Formation of Low-Mass Population III Stars. *Kazuyuki Omukai & Yuzuru Yoshii.* 599, 746 (2003)

Combining *Wilkinson Microwave Anisotropy Probe* and Sloan Digital Sky Survey Quasar Data on Reionization Constrains Cosmological Parameters and Star Formation Efficiency. *Weihsueh A. Chiu, Xiaohui Fan, & Jeremiah P. Ostriker.* 599, 759 (2003)

The Rest-Frame Optical Luminosity Density, Color, and Stellar Mass Density of the Universe from $z = 0$ to $z = 3$. *Gregory Rudnick, Hans-Walter Rix, Marijn Franx, Ivo Labbé, Michael Blanton, Emanuele Daddi, Natascha M. Förster Schreiber, Alan Moorwood, Huub Röttgering, Ignacio Trujillo, Arjen van de Wel, Paul van der Werf, Pieter G. van Dokkum, & Lottie van Starkenburg.* 599, 847 (2003)

GALAXIES: FUNDAMENTAL PARAMETERS

Tidally Triggered Star Formation in Close Pairs of Galaxies. II. Constraints on Burst Strengths and Ages. *Elizabeth Barton Gillespie, Margret J. Geller, & Scott J. Kenyon.* 582, 668 (2003)

Galactic Bulges from *Hubble Space Telescope* Near-Infrared Camera Multi-Object Spectrometer Observations: The Lack of $r^{1/4}$ Bulges. *Marc*

Balcells, Alister W. Graham, Lilian Domínguez-Palmero, & Reynier F. Peletier. 582, L79 (2003)

The Overdensities of Galaxy Environments as a Function of Luminosity and Color. *David W. Hogg, Michael R. Blanton, Daniel J. Eisenstein, James E. Gunn, David J. Schlegel, Idit Zehavi, Neta A. Bahcall, Jon Brinkmann, Istvan Csabai, Donald P. Schneider, David H. Weinberg, & Donald G. York.* 585, L5 (2003)

Stellar Masses of Luminous Compact Blue Galaxies at Redshifts $z = 0.4$–1.2. *R. Guzmán, G. Östlin, D. Kunth, M. A. Bershady, D. C. Koo, & M. A. Pahre.* 586, L45 (2003)

Hubble Space Telescope WFPC2 Morphologies of K-selected Extremely Red Galaxies. *Lin Yan & David Thompson.* 586, 765 (2003)

A New Approach to Galaxy Morphology. I. Analysis of the Sloan Digital Sky Survey Early Data Release. *Roberto G. Abraham, Sidney van den Bergh, & Preethi Nair.* 588, 218 (2003)

The Near-Infrared Ca II Triplet–σ Relation for Bulges of Spiral Galaxies. *Jesús Falcón-Barroso, Reynier F. Peletier, Alexandre Vazdekis, & Marc Balcells.* 588, L17 (2003)

Age, Metallicity, and Star Formation History of Cluster Galaxies at $z \sim 0.3$. *P. Merluzzi, F. La Barbera, M. Massarotti, G. Busarello, & M. Capaccioli.* 589, 147 (2003)

The Relation between Black Hole Mass, Bulge Mass, and Near-Infrared Luminosity. *Alessandro Marconi & Leslie K. Hunt.* 589, L21 (2003)

Emission-Line Galaxies in the STIS Parallel Survey. II. Star Formation Density. *Harry I. Teplitz, Nicholas R. Collins, Jonathan P. Gardner, Robert S. Hill, & Jason Rhodes.* 589, 704 (2003)

Cl 1358+62: Characterizing the Physical Properties of Cluster Galaxies at $z = 0.33$. *Kim-Vy H. Tran, Luc Simard, Garth Illingworth, & Marijn Franx.* 590, 238 (2003)

Emission-Line Galaxies in the Space Telescope Imaging Spectrograph Parallel Survey. I. Observations and Data Analysis. *Harry I. Teplitz, Nicholas R. Collins, Jonathan P. Gardner, Robert S. Hill, Sara R. Heap, Don J. Lindler, Jason Rhodes, & Bruce E. Woodgate.* 146, 209 (2003)

A Wide-Field *Hubble Space Telescope* Study of the Cluster Cl 0024+16 at $z = 0.4$. I. Morphological Distributions to 5 Mpc Radius. *Tommaso Treu, Richard S. Ellis, Jean-Paul Kneib, Alan Dressler, Ian Smail, Oliver Czoske, Augustus Oemler, & Priyamvada Natarajan.* 591, 53 (2003)

Dark and Luminous Matter Connections from Smoothed Particle Hydrodynamic Simulations of Isolated Triaxial Collapsing Systems. *P. Mazzei & A. Curir.* 591, 784 (2003)

Palomar/Las Campanas Imaging Atlas of Blue Compact Dwarf Galaxies. I. Images and Integrated Photometry. *A. Gil de Paz, B. F. Madore, & O. Pevunova.* 147, 29 (2003)

Mass-to-Light Ratios of 2dF Galaxies. *Tereasa G. Brainerd & Michael A. Specian.* 593, L7 (2003)

The Broadband Optical Properties of Galaxies with Redshifts $0.02 < z < 0.22$. *Michael R. Blanton, David W. Hogg, Neta A. Bahcall, Ivan K. Baldry, J. Brinkmann, István Csabai, Daniel Eisenstein, Masataka Fukugita, James E. Gunn, Željko Ivezić, D. Q. Lamb, Robert H. Lupton, Jon Loveday, Jeffrey A. Munn, R. C. Nichol, Sadanori Okamura, David J. Schlegel, Kazuhiro Shimasaku, Michael A. Strauss, Michael S. Vogeley, & David H. Weinberg.* 594, 186 (2003)

On the Invariant Distribution of Galaxies in the r_e-$\langle\mu\rangle_e$ Plane out to $z = 0.64$. *F. La Barbera, G. Busarello, P. Merluzzi, M. Massarotti, & M. Capaccioli.* 595, 127 (2003)

Hubble Space Telescope Imaging in the *Chandra* Deep Field–South. III. Quantitative Morphology of the 1 Million Second *Chandra* Counterparts and Comparison with the Field Population. *N. A. Grogin, A. M. Koekemoer, E. J. Schreier, J. Bergeron, R. Giacconi, G. Hasinger, L. Kewley, C. Norman, P. Rosati, P. Tozzi, & A. Zirm.* 595, 685 (2003)

The Munich Near-Infrared Cluster Survey. II. The K-Band Luminosity Function of Field Galaxies to $z \sim 1.2$. *N. Drory, R. Bender, G. Feulner, U. Hopp, C. Maraston, J. Snigula, & G. J. Hill.* 595, 698 (2003)

Evolution of Cluster Elliptical Galaxies. *L. Felipe Barrientos & Simon J. Lilly.* 596, 129 (2003)

The Cosmic Evolution of the Galaxy Luminosity Density. *Francesco Calura & Francesca Matteucci.* 596, 734 (2003)

Advanced Camera for Surveys Photometry of the Cluster RDCS 1252.9−2927: The Color-Magnitude Relation at $z = 1.24$. *John P. Blakeslee, Marijn Franx, Marc Postman, Piero Rosati, Brad P. Holden, G. D. Illingworth, H. C. Ford, N. J. G. Cross, Caryl Gronwall, N. Benítez, R. J. Bouwens, T. J. Broadhurst, M. Clampin, R. Demarco, D. A. Golimowski, G. F. Hartig, L. Infante, A. R. Martel, G. K. Miley, F. Menanteau, G. R. Meurer, M. Sirianni, & R. L. White.* 596, L143 (2003)

The Puzzlingly Large Ca II Triplet Absorption in Dwarf Elliptical Galaxies. *D. Michielsen, S. De Rijcke, H. Dejonghe, W. W. Zeilinger, & G. K. T. Hau.* 597, L21 (2003)

Lensing Effects of Misaligned Disks in Dark Matter Halos. *Ryan Quadri, Ole Möller, & Priyamvada Natarajan.* 597, 659 (2003)

Multicolor Photometry of the Galaxies in A2255 by the Beijing-Arizona-Taiwan-Connecticut Survey and Sloan Digital Sky Survey. *Qirong Yuan, Xu Zhou, & Zhaoji Jiang.* 149, 53 (2003)

The Internal Ultraviolet–Optical Color Dispersion: Quantifying the Morphological K-Correction. *Casey Papovich, Mauro Giavalisco, Mark Dickinson, Christopher J. Conselice, & Henry C. Ferguson.* 598, 827 (2003)

Near-Infrared Observations of BL Lacertae Host Galaxies. *C. C. Cheung, C. Megan Urry, Riccardo Scarpa, & Mauro Giavalisco.* 599, 155 (2003)

The Nature of E+A Galaxies in Intermediate Redshift Clusters. *Kim-Vy H. Tran, Marijn Franx, Garth Illingworth, Daniel D. Kelson, & Pieter van Dokkum.* 599, 865 (2003)

The DEEP Groth Strip Survey. VII. The Metallicity of Field Galaxies at $0.26 < z < 0.82$ and the Evolution of the Luminosity-Metallicity Relation. *Henry A. Kobulnicky, Christopher N. A. Willmer, Andrew C. Phillips, David C. Koo, S. M. Faber, Benjamin J. Weiner, Vicki L. Sarajedini, Luc Simard, & Nicole P. Vogt.* 599, 1006 (2003)

Measuring Global Galaxy Metallicities Using Emission-Line Equivalent Widths. *Henry A. Kobulnicky & Andrew C. Phillips.* 599, 1031 (2003)

A Face-on Tully-Fisher Relation. *David R. Andersen & Matthew A. Bershady.* 599, L79 (2003)

GALAXIES: GENERAL

Axisymmetric Dynamical Models of the Central Regions of Galaxies. *Karl Gebhardt, Douglas Richstone, Scott Tremaine, Tod R. Lauer, Ralf Bender, Gary Bower, Alan Dressler, S. M. Faber, Alexei V. Filippenko, Richard Green, Carl Grillmair, Luis C. Ho, John Kormendy, John Magorrian, & Jason Pinkney.* 583, 92 (2003)

New Mass Estimators for Tracer Populations. *N. W. Evans, M. I. Wilkinson, K. M. Perrett, & T. J. Bridges.* 583, 752 (2003)

A First Estimate of the Baryonic Mass Function of Galaxies. *Eric F. Bell, Daniel H. McIntosh, Neal Katz, & Martin D. Weinberg.* 585, L117 (2003)

Pearson-Readhead Survey Sources. II. The Long-Term Centimeter-Band Total Flux and Linear Polarization Properties of a Complete Radio Sample. *M. F. Aller, H. D. Aller, & P. A. Hughes.* 586, 33 (2003)

Estimating Star Formation Rates from Infrared and Radio Luminosities: The Origin of the Radio-Infrared Correlation. *Eric F. Bell.* 586, 794 (2003)

The Low Mass X-Ray Binary–Globular Cluster Connection. II. NGC 4472 X-Ray Source Properties and Source Catalogs. *Thomas J. Maccarone, Arunav Kundu, & Stephen E. Zepf.* 586, 814 (2003)

Small-Scale Clustering in Isotropic Arrival Distribution of Ultra–High-Energy Cosmic Rays and Implications for Their Source Candidates. *Hiroyuki Yoshiguchi, Shigehiro Nagataki, Sin-ya Tsubaki, & Katsuhiko Sato.* 586, 1211 (2003)

The Rate and the Origin of Type Ia Supernovae in Radio Galaxies. *Massimo Della Valle & Nino Panagia.* 587, L71 (2003)

Some Constraints on the Effects of Age and Metallicity on the Low-Mass X-Ray Binary Formation Rate. *Arunav Kundu, Thomas J. Maccarone, Stephen E. Zepf, & Thomas H. Puzia.* 589, L81 (2003)

Probing O VI Emission in the Halos of Edge-On Spiral Galaxies. *B. Otte, E. M. Murphy, J. C. Howk, Q. D. Wang, W. R. Oegerle, & K. R. Sembach.* 591, 821 (2003)

Probing Planck-Scale Physics with Extragalactic Sources? *Y. Jack Ng, W. A. Christiansen, & H. van Dam.* 591, L87 (2003)

Arrival Distribution of Ultra–High-Energy Cosmic Rays: Prospects for the Future. *Hiroyuki Yoshiguchi, Shigehiro Nagataki, & Katsuhiko Sato.* 592, 311 (2003)

A Deep *Chandra* X-Ray Observation of NGC 1637. *Stefan Immler, Q. Daniel Wang, Douglas C. Leonard, & Eric M. Schlegel.* 595, 727 (2003)

A New Method for Calculating Arrival Distribution of Ultra–High-Energy Cosmic Rays above 10^{19} eV with Modifications by the Galactic Magnetic Field. *Hiroyuki Yoshiguchi, Shigehiro Nagataki, & Katsuhiko Sato.* 596, 1044 (2003)

Chandra Observation of the Edge-on Galaxy NGC 3556 (M108): Violent Galactic Disk-Halo Interaction Revealed. *Q. Daniel Wang, Tara Chaves, & Judith A. Irwin.* 598, 969 (2003)

The Optical and Near-Infrared Properties of Galaxies. I. Luminosity and Stellar Mass Functions. *Eric F. Bell, Daniel H. McIntosh, Neal Katz, & Martin D. Weinberg.* 149, 289 (2003)

ADEMIS: A Library of Evolutionary Models for Emission-Line Galaxies. I. Dust-free Models. *Gladis Margis C., Luc Binette, & Gustavo Bruzual A.* 149, 313 (2003)

GALAXIES: HALOS

Event Rates and Timescale Distributions from Realistic Microlensing Models of M31. *Edward A. Baltz, Geza Gyuk, & Arlin Crotts.* 582, 30 (2003)

The Central Mass Distribution in Dwarf and Low Surface Brightness Galaxies. *R. A. Swaters, B. F. Madore, Frank C. van den Bosch, & M. Balcells.* 583, 732 (2003)

New Mass Estimators for Tracer Populations. *N. W. Evans, M. I. Wilkinson, K. M. Perrett, & T. J. Bridges.* 583, 752 (2003)

NGC 4608 and NGC 5701: Barred Galaxies without Disks? *D. A. Gadotti & R. E. de Souza.* 583, L75 (2003)

The Structural Evolution of Substructure. *Eric Hayashi, Julio F. Navarro, James E. Taylor, Joachim Stadel, & Thomas Quinn.* 584, 541 (2003)

Galactic Gamma-Ray Halo of the Nearby Starbust Galaxy NGC 253. *C. Itoh, R. Enomoto, S. Yanagita, T. Yoshida, & T. G. Tsuru.* 584, L65 (2003)

High-Latitude H I in NGC 2613: Buoyant Disk-Halo Outflow. *Judith A. Irwin & Tara Chaves.* 585, 268 (2003)

Dark Matter within High Surface Brightness Spiral Galaxies. *Thilo Kranz, Adrianne Slyz, & Hans-Walter Rix.* 586, 143 (2003)

On the Spiral Structure of NGC 2915 and Dark Matter. *F. S. Masset & M. Bureau.* 586, 152 (2003)

ROSAT HRI Investigation of the NGC 507 X-Ray Halo. *M. Paolillo, G. Fabbiano, G. Peres, & D.-W. Kim.* 586, 850 (2003)

The Kinematics in the Core of the Low Surface Brightness Galaxy DDO 39. *R. A. Swaters, M. A. W. Verheijen, M. A. Bershady, & D. R. Andersen.* 587, L19 (2003)

Environmental Effects on Evolution of Cluster Galaxies in a Λ-dominated Cold Dark Matter Universe. *Takashi Okamoto & Masahiro Nagashima.* 587, 500 (2003)

A Quadruple-Phase Strong Mg II Absorber at $z \sim 0.9902$ toward PG 1634+706. *Jie Ding, Jane C. Charlton, Nicholas A. Bond, Stephanie G. Zonak, & Christopher W. Churchill.* 587, 551 (2003)

Diffuse X-Ray Emission from M101. *K. D. Kuntz, S. L. Snowden, W. D. Pence, & K. Mukai.* 588, 264 (2003)

Dark Halo Cusp: Asymptotic Convergence. *Avishai Dekel, Itai Arad, Jonathan Devor, & Yuval Birnboim.* 588, 680 (2003)

Rapid Brightness Fluctuations in Q0957+561A,B: Microlensing or Seeing? *Wesley N. Colley, Irwin I. Shapiro, Jennifer Pegg, Edwin L. Turner, Tomislav Kundić, Karen Loomis, N. C. Hastings, & Russet McMillan.* 588, 711 (2003)

High-Resolution STIS/*Hubble Space Telescope* and HIRES/Keck Spectra of Three Weak Mg II Absorbers toward PG 1643+706. *Jane C. Charlton, Jie Ding, Stephanie G. Zonak, Christopher W. Churchill, Nicholas A. Bond, & Jane R. Rigby.* 589, 111 (2003)

The Absorption and Emission Kinematics in the $z = 0.7450$ Mg II Absorber toward Q1331+17. *Sara L. Ellison, Gabriela Mallén-Ornelas, & Marcin Sawicki.* 589, 709 (2003)

Dense Gas Clouds and the Unidentified EGRET Sources. *Mark Walker, Masaki Mori, & Michiko Ohishi.* 589, 810 (2003)

Gravitational Lensing by Burkert Halos. *Yousin Park & Henry C. Ferguson.* 589, L65 (2003)

The Multiphase Absorption Systems toward PG 1206+459. *Jie Ding, Jane C. Charlton, Christopher W. Churchill, & Christopher Palma.* 590, 746 (2003)

On the Spatial Correlations of Lyman Break Galaxies. *Evan Scannapieco & Robert J. Thacker.* 590, L69 (2003)

Modeling the Void H I Column Density Spectrum with Subgalactic Halos. *Curtis V. Manning.* 591, 79 (2003)

Dark and Luminous Matter Connections from Smoothed Particle Hydrodynamic Simulations of Isolated Triaxial Collapsing Systems. *P. Mazzei & A. Curir.* 591, 784 (2003)

Probing O VI Emission in the Halos of Edge-On Spiral Galaxies. *B. Otte, E. M. Murphy, J. C. Howk, Q. D. Wang, W. R. Oegerle, & K. R. Sembach.* 591, 821 (2003)

Dynamics of the Globular Cluster System Associated with M49 (NGC 4472): Cluster Orbital Properties and the Distribution of Dark Matter. *Patrick Côté, Dean E. McLaughlin, Judith G. Cohen, & John P. Blakeslee.* 591, 850 (2003)

Unstable Cold Dark Matter and the Cuspy Halo Problem in Dwarf Galaxies. *F. J. Sánchez-Salcedo.* 591, L107 (2003)

Extraplanar Emission-Line Gas in Edge-on Spiral Galaxies. II. Optical Spectroscopy. *Scott T. Miller & Sylvain Veilleux.* 592, 79 (2003)

Evidence of a Significant Intermediate-Age Population in the M31 Halo from Main-Sequence Photometry. *Thomas M. Brown, Henry C. Ferguson, Ed Smith, Randy A. Kimble, Allen V. Sweigart, Alvio Renzini, R. Michael Rich, & Don A. VandenBerg.* 592, L17 (2003)

The Halo Occupation Distribution and the Physics of Galaxy Formation. *Andreas A. Berlind, David H. Weinberg, Andrew J. Benson, Carlton M. Baugh, Shaun Cole, Romeel Davé, Carlos S. Frenk, Adrian Jenkins, Neal Katz, & Cedric G. Lacey.* 593, 1 (2003)

On the Origin of the Inner Structure of Halos. *Alberto Manrique, Andreu Raig, Eduard Salvador-Solé, Teresa Sanchis, & José María Solanes.* 593, 26 (2003)

Mass-to-Light Ratios of 2dF Galaxies. *Tereasa G. Brainerd & Michael A. Specian.* 593, L7 (2003)

High-Latitude H I in the Low Surface Brightness Galaxy UGC 7321. *L. D. Matthews & Kenneth Wood.* 593, 721 (2003)

A Rapid Microlensing Event in the Q0957+561A, B Gravitational Lens System. *Wesley N. Colley & Rudolph E. Schild.* 594, 97 (2003)

XMM-Newton and *Chandra* Observations of the Galaxy Group NGC 5044. I. Evidence for Limited Multiphase Hot Gas. *David A. Buote, Aaron D. Lewis, Fabrizio Brighenti, & William G. Mathews.* 594, 741 (2003)

Relaxation of a Collisionless System and the Transition to a New Equilibrium Velocity Distribution. *Thomas E. C. Merrall & Richard N. Henriksen.* 595, 43 (2003)

XMM-Newton and *Chandra* Observations of the Galaxy Group NGC 5044. II. Metal Abundances and Supernova Fraction. *David A. Buote, Aaron D. Lewis, Fabrizio Brighenti, & William G. Mathews.* 595, 151 (2003)

Gravitational Lensing by a Compound Population of Halos: Standard Models. *Li-Xin Li & Jeremiah P. Ostriker.* 595, 603 (2003)

Cooling in Coronal Gas in the M82 Starburst Superwind. *Charles G. Hoopes, Timothy M. Heckman, David K. Strickland, & J. Christopher Howk.* 596, L175 (2003)

Extraplanar Emission-Line Gas in Edge-On Spiral Galaxies. I. Deep Emission-Line Imaging. *Scott T. Miller & Sylvain Veilleux.* 148, 383 (2003)

Angular Momentum Distribution of Hot Gas and Implications for Disk Galaxy Formation. *D. N. Chen, Y. P. Jing, & Kohji Yoshikawa.* 597, 35 (2003)

Lensing Effects of Misaligned Disks in Dark Matter Halos. *Ryan Quadri, Ole Möller, & Priyamvada Natarajan.* 597, 659 (2003)

The Clustering of Intergalactic Metals. *Christophe Pichon, Evan Scannapieco, Bastien Aracil, Patrick Petitjean, Dominique Aubert, Jacqueline Bergeron, & Stéphane Colombi.* 597, L97 (2003)

The Effects of Non-Gaussian Initial Conditions on the Structure and Substructure of Cold Dark Matter Halos. *Vladimir Avila-Reese, Pedro Colín, Gabriella Piccinelli, & Claudio Firmani.* 598, 36 (2003)

Halo Substructure and the Power Spectrum. *Andrew R. Zentner & James S. Bullock.* 598, 49 (2003)

Galaxies under the Cosmic Microscope: A Gemini Multiobject Spectrograph Study of the Lensed Disk Galaxy 289 in A2218. *A. M. Swinbank, J. Smith, R. G. Bower, A. Bunker, I. Smail, R. S. Ellis, Graham P. Smith, J.-P. Kneib, M. Sullivan, & J. Allington-Smith.* 598, 162 (2003)

Observing the Dark Matter Density Profile of Isolated Galaxies. *Francisco Prada, Mayrita Vitvitska, Anatoly Klypin, Jon A. Holtzman, David J. Schlegel, Eva K. Grebel, H.-W. Rix, J. Brinkmann, T. A. McKay, & I. Csabai.* 598, 260 (2003)

Constraining Evolution in the Halo Model Using Galaxy Redshift Surveys. *Renbin Yan, Darren S. Madgwick, & Martin White.* 598, 848 (2003)

Lyα Emission in Starbursts: Implications for Galaxies at High Redshift. *J. M. Mas-Hesse, D. Kunth, G. Tenorio-Tagle, C. Leitherer, R. J. Terlevich, & E. Terlevich.* 598, 858 (2003)

Halo Properties in Models with Dynamical Dark Energy. *A. Klypin, A. V. Macciò, R. Mainini, & S. A. Bonometto.* 599, 31 (2003)

The Wendelstein Calar Alto Pixellensing Project (WeCAPP): First MACHO Candidates. *Arno Riffeser, Jürgen Fliri, Ralf Bender, Stella Seitz, & Claus A. Gössl.* 599, L17 (2003)

The Discovery of Globular Clusters in the Protospiral Galaxy NGC 2915: Implications for Hierarchical Galaxy Evolution. *Gerhardt R. Meurer, J. P. Blakeslee, M. Sirianni, H. C. Ford, G. D. Illingworth, N. Benítez, M. Clampin, F. Menanteau, H. D. Tran, R. A. Kimble, G. F. Hartig, D. R. Ardila, F. Bartko, R. J. Bouwens, T. J. Broadhurst, R. A. Brown, C. J.*

Burrows, E. S. Cheng, N. J. G. Cross, P. D. Feldman, D. A. Golimowski, C. Gronwall, L. Infante, J. E. Krist, M. P. Lesser, A. R. Martel, G. K. Miley, M. Postman, P. Rosati, W. B. Sparks, Z. I. Tsvetanov, R. L. White, & W. Zheng. 599, L83 (2003)

GALAXIES: HIGH-REDSHIFT

Molecular Gas and Dust at $z = 2.6$ in SMM J14011+0252: A Strongly Lensed Ultraluminous Galaxy, Not a Huge Massive Disk. *D. Downes & P. M. Solomon.* 582, 37 (2003)

Subaru Deep Survey. II. Luminosity Functions and Clustering Properties of Lyα Emitters at $z = 4.86$ in the Subaru Deep Field. *Masami Ouchi, Kazuhiro Shimasaku, Hisanori Furusawa, Masayuki Miyazaki, Mamoru Doi, Masaru Hamabe, Tomoki Hayashino, Masahiko Kimura, Keiichi Kodaira, Yutaka Komiyama, Yuichi Matsuda, Satoshi Miyazaki, Fumiaki Nakata, Sadanori Okamura, Maki Sekiguchi, Yasuhiro Shioya, Hajime Tamura, Yoshiaki Taniguchi, Masafumi Yagi, & Naoki Yasuda.* 582, 60 (2003)

An Obscured Radio Galaxy at High Redshift. *Michiel Reuland, Wil van Breugel, Huub Röttgering, Wim de Vries, Carlos De Breuk, & Daniel Stern.* 582, L71 (2003)

The Largest Balck Holes and the Most Luminous Galaxies. *Hagai Netzer.* 583, L5 (2003)

A SCUBA Galaxy in the Protocluster around 53W002 at $z = 2.4$. *Ian Smail, R. J. Ivison, D. G. Gilbank, J. S. Dunlop, W. C. Keel, K. Motohara, & J. A. Stevens.* 583, 551 (2003)

Galaxies and Intergalactic Matter at Redshift $z \sim 3$: Overview. *Kurt L. Adelberger, Charles C. Steidel, Alice E. Shapley, & Max Pettini.* 584, 45 (2003)

A Multiwavelength Approach to the Star Formation Rate Estimation in Galaxies at Intermediate Redshifts. *N. Cardiel, D. Elbaz, R. P. Schiavon, C. N. A. Willmer, D. C. Koo, A. C. Phillips, & J. Gallego.* 584, 76 (2003)

Faint Active Galactic Nuclei and the Ionizing Background. *Michael Schirber & James S. Bullock.* 584, 110 (2003)

Cosmological Effects of the First Stars: Evolving Spectra of Population III. *Jason Tumlinson, J. Michael Shull, & Aparna Venkatesan.* 584, 608 (2003)

Spatially Resolved Millimeter Interferometry of SMM J02399−0136: A Very Massive Galaxy at $z = 2.8$. *Reinhard Genzel, Andrew J. Baker, Linda J. Tacconi, Dieter Lutz, Pierre Cox, Stéphane Guilloteau, & Alain Omont.* 584, 633 (2003)

Three Emission-Line Galaxies at $z \sim 2.4$. *Richard Meyer, David Thompson, & Filippo Mannucci.* 585, 73 (2003)

Massive Elliptical Galaxies at High Redshift: NICMOS Imaging of $z \approx 1$ Radio Galaxies. *Andrew W. Zirm, Mark Dickinson, & Arjun Dey.* 585, 90 (2003)

Correlations of Richness and Global Properties in Galaxy Clusters. *H. K. C. Yee & E. Ellingson.* 585, 215 (2003)

No X-Ray–bright Type II Quasars among the Lyα Emitters. *S. Malhotra, J. X. Wang, J. E. Rhoads, T. M. Heckman, & C. A. Norman.* 585, L25 (2003)

Predictions for the Counts of Faint, High-Redshift Galaxies in the Mid-Infrared. *Zoltán Haiman, David N. Spergel, & Edwin L. Turner.* 585, 630 (2003)

Searching for $z \simeq 6$ Objects with the *Hubble Space Telescope* Advanced Camera for Surveys: Preliminary Analysis of a Deep Parallel Field. *Haojing Yan, Rogier A. Windhorst, & Seth H. Cohen.* 585, L93 (2003)

Three Epochs of Star Formation in the High-Redshift Universe. *Jonathan Mackey, Volker Bromm, & Lars Hernquist.* 586, 1 (2003)

Keck Spectroscopy and *Hubble Space Telescope* Imaging of GRB 000926: Probing a Host Galaxy at $z = 2.038$. *S. Castro, T. J. Galama, F. A. Harrison, J. A. Holtzman, J. S. Bloom, S. G. Djorgovski, & S. R. Kulkarni.* 586, 128 (2003)

Discovery of Early Optical Emission from GRB 021211. *D. W. Fox, P. A. Price, A. M. Soderberg, E. Berger, S. R. Kulkarni, R. Sari, D. A. Frail, F. A. Harrison, S. A. Yost, K. Matthews, B. A. Peterson, I. Tanaka, J. Christiansen, & G. H. Moriarty-Schieven.* 586, L5 (2003)

The Las Campanas Infrared Survey. IV. The Photometric Redshift Survey and the Rest-Frame R-Band Galaxy Luminosity Function at $0.5 \leq z \leq 1.5$. *Hsiao-Wen Chen, Ronald O. Marzke, Patrick J. McCarthy, P. Martini, R. G. Carlberg, S. E. Persson, A. Bunker, C. R. Bridge, & R. G. Abraham.* 586, 745 (2003)

Hubble Space Telescope WFPC2 Morphologies of K-selected Extremely Red Galaxies. *Lin Yan & David Thompson.* 586, 765 (2003)

Subaru Deep Survey. IV. Discovery of a Large-Scale Structure at Redshift $\simeq 5$. *K. Shimasaku, M. Ouchi, S. Okamura, N. Kashikawa, M. Doi, H. Furusawa, M. Hamabe, T. Hayashino, K. Kawabata, M. Kimura, K. Kodaira, Y. Komiyama, Y. Matsuda, M. Miyazaki, S. Miyazaki, F. Nakata, K. Ohta, Y. Ohyama, M. Sekiguchi, Y. Shioya, H. Tamura, Y. Taniguchi, M. Yagi, T. Yamada, & N. Yasuda.* 586, L111 (2003)

The Evolution of the Global Stellar Mass Density at $0 < z < 3$. *Mark Dickinson, Casey Papovich, Henry C. Ferguson, & Tamás Budavári.* 587, 25 (2003)

The Canada-UK Deep Submillimeter Survey. VI. The 3 Hour Field. *T. M. Webb, S. A. Eales, S. J. Lilly, D. L. Clements, L. Dunne, W. K. Gear, R. J. Ivison, H. Flores, & M. Yun.* 587, 41 (2003)

The Dust in Lyman Break Galaxies. *Uma P. Vijh, Adolph N. Witt, & Karl D. Gordon.* 587, 533 (2003)

A European Southern Observatory Very Large Telescope Survey of Near-Infrared ($Z \leq 25$) Selected Galaxies at Redshifts $4.5 < z < 6$: Constraining the Cosmic Star Formation Rate near the Reionization Epoch. *A. Fontana, F. Poli, N. Menci, M. Nonino, E. Giallongo, S. Cristiani, & S. D'Odorico.* 587, 544 (2003)

Chandra X-Ray Analysis of the Massive High-Redshift Galaxy Clusters Cl J1113.1−2615 and Cl J0152.7−1357. *B. J. Maughan, L. R. Jones, H. Ebeling, E. Perlman, P. Rosati, C. Frye, & C. R. Mullis.* 587, 589 (2003)

A Significant Population of Red, Near-Infrared–selected High-Redshift Galaxies. *Marijn Franx, Ivo Labbé, Gregory Rudnick, Pieter G. van Dokkum, Emanuele Daddi, Natascha M. Förster Schreiber, Alan Moorwood, Hans-Walter Rix, Huub Röttgering, Arjen van de Wel, Paul van der Werf, & Lottie van Starkenburg.* 587, L79 (2003)

Metal Absorption Lines as Probes of the Intergalactic Medium Prior to the Reionization Epoch. *Steven R. Furlanetto & Abraham Loeb.* 588, 18 (2003)

Detection of Strong Clustering of Red K-selected Galaxies at $2 < z_{\rm phot} < 4$ in the Hubble Deep Field–South. *E. Daddi, H. J. A. Röttgering, I. Labbé, G. Rudnick, M. Franx, A. F. M. Moorwood, H. W. Rix, P. P. van der Werf, & P. G. van Dokkum.* 588, 50 (2003)

Rest-Frame Ultraviolet Spectra of $z \sim 3$ Lyman Break Galaxies. *Alice E. Shapley, Charles C. Steidel, Max Pettini, & Kurt L. Adelberger.* 588, 65 (2003)

Photometric Redshift Using the Far-Infrared Spectral Energy Distribution. *T. Wiklind.* 588, 736 (2003)

Cosmological Origin of the Stellar Velocity Dispersions in Massive Early-Type Galaxies. *Abraham Loeb & P. J. E. Peebles.* 589, 29 (2003)

Discovery of Two Distant Type Ia Supernovae in the Hubble Deep Field–North with the Advanced Camera for Surveys. *John P. Blakeslee, Zlatan I. Tsvetanov, Adam G. Riess, Holland C. Ford, Garth D. Illingworth, Daniel Magee, John L. Tonry, Narciso Benítez, Mark Clampin, George F. Hartig, Gerhardt R. Meurer, Marco Sirianni, David R. Ardila, Frank Bartko, Rychard Bouwens, Tom Broadhurst, Nicholas Cross, P. D. Feldman, Marijn Franx, David A. Golimowski, Caryl Gronwall, Randy Kimble, John Krist, André R. Martel, Felipe Menanteau, George Miley, Marc Postman, Piero Rosati, William Sparks, L.-G. Strolger, Hien D. Tran, Richard L. White, & Wei Zheng.* 589, 693 (2003)

Quasar Elemental Abundances at High Redshifts. *M. Dietrich, F. Hamann, J. C. Shields, A. Constantin, J. Heidt, K. Jäger, M. Vestergaard, & S. J. Wagner.* 589, 722 (2003)

ERO R1 in the Field of Cl 0939+4713: Evidence for an S0-Like Galaxy at $z \sim 1.5$. *Masanori Iye, Kazuhiro Shimasaku, Satoshi Miyazaki, Chris Simpson, Masatoshi Imanishi, Nabunari Kashikawa, Takayuki Kodama, Masashi Chiba, Yoshihiko Saito, Miwa Goto, Fumihide Iwamuro, Naoto Kobayashi, Sadanori Okamura, & Hiroshi Terada.* 590, 770 (2003)

On the Spatial Correlations of Lyman Break Galaxies. *Evan Scannapieco & Robert J. Thacker.* 590, L69 (2003)

A Wide-Field *Hubble Space Telescope* Study of the Cluster Cl 0024+16 at $z = 0.4$. I. Morphological Distributions to 5 Mpc Radius. *Tommaso Treu, Richard S. Ellis, Jean-Paul Kneib, Alan Dressler, Ian Smail, Oliver Czoske, Augustus Oemler, & Priyamvada Natarajan.* 591, 53 (2003)

Hα Spectroscopy of Galaxies at $z > 2$: Kinematics and Star Formation. *Dawn K. Erb, Alice E. Shapley, Charles C. Steidel, Max Pettini, Kurt L. Adelberger, Matthew P. Hunt, Alan F. M. Moorwood, & Jean-Gabriel Cuby.* 591, 101 (2003)

The Implications of *Wilkinson Microwave Anisotropy Probe* Observations for Population III Star Formation Processes. *Renyue Cen.* 591, L5 (2003)

Large Disklike Galaxies at High Redshift. *Ivo Labbé, Gregory Rudnick, Marijn Franx, Emanuele Daddi, Pieter G. van Dokkum, Natascha M. Förster Schreiber, Konrad Kuijken, Alan Moorwood, Hans-Walter Rix, Huub Röttgering, Ignacio Trujillo, Arjen van der Wel, Paul van der Werf, & Lottie van Starkenburg.* 591, L95 (2003)

Tracing the Large-Scale Structure in the *Chandra* Deep Field South. *R. Gilli, A. Cimatti, E. Daddi, G. Hasinger, P. Rosati, G. Szokoly, P. Tozzi, J. Bergeron, S. Borgani, R. Giacconi, L. Kewley, V. Mainieri, M. Mignoli, M. Nonino, C. Norman, J. Wang, G. Zamorani, W. Zheng, & A. Zirm.* 592, 721 (2003)

Lyman Break Galaxies at Redshift $z \sim 3$: Survey Description and Full Data Set. *Charles C. Steidel, Kurt L. Adelberger, Alice E. Shapley, Max Pettini, Mark Dickenson, & Mauro Giavalisco.* 592, 728 (2003)

Giant Lyα Nebulae Associated with High-Redshift Radio Galaxies. *Michiel Reuland, Wil van Breugel, Huub Röttgering, Wim de Vries, S. A. Stanford, Arjun Dey, Mark Lacy, Joss Bland-Hawthorn, Michael Dopita, & George Miley.* 592, 755 (2003)

Cloning Dropouts: Implications for Galaxy Evolution at High Redshift. *Rychard Bouwens, Tom Broadhurst, & Garth Illingworth.* 593, 640 (2003)

Beyond the Hubble Deep Field Limiting Magnitude: Faint Galaxy Number Counts from Surface Brightness Fluctuations. *A. Marín-Franch & A. Aparicio.* 594, 63 (2003)

Lyman Break Galaxies and the Lyα Forest. *Juna A. Kollmeier, David H. Weinberg, Romeel Davé, & Neal Katz.* 594, 75 (2003)

The Assembly of Massive Galaxies from Near-Infrared Observations of the Hubble Deep Field–South. *A. Fontana, I. Donnarumma, E. Vanzella, E. Giallongo, N. Menci, M. Nonino, P. Saracco, S. Cristiani, S. D'Odorico, & F. Poli.* 594, L9 (2003)

The C IV Mass Density of the Universe at Redshift 5. *Max Pettini, Piero Madau, Michael Bolte, Jason X. Prochaska, Sara L. Ellison, & Xiaohui Fan.* 594, 695 (2003)

The [C II] 158 Micron Line Deficit in Ultraluminous Infrared Galaxies Revisited. *M. L. Luhman, S. Satyapal, J. Fischer, M. G. Wolfire, E. Sturm, C. C. Dudley, D. Lutz, & R. Genzel.* 594, 758 (2003)

K_s Number Counts in the Groth and Coppi Fields. *David Cristóbal-Hornillos, Marc Balcells, Mercedes Prieto, Rafael Guzmán, Jesús Gallego, Nicolás Cardiel, Ángel Serrano, & Roser Pelló.* 595, 71 (2003)

Star Formation at $z \sim 6$: i-Dropouts in the Advanced Camera for Surveys Guaranteed Time Observation Fields. *R. J. Bouwens, G. D. Illingworth, P. Rosati, C. Lidman, T. Broadhurst, M. Franx, H. C. Ford, D. Magee, N. Benítez, J. P. Blakeslee, G. R. Meurer, M. Clampin, G. F. Hartig, D. R. Ardila, F. Bartko, R. A. Brown, C. J. Burrows, E. S. Cheng, N. J. G. Cross, P. D. Feldman, D. A. Golimowski, C. Gronwall, L. Infante, R. A. Kimble, J. E. Krist, M. P. Lesser, A. R. Martel, F. Menanteau, G. K. Miley, M. Postman, M. Sirianni, W. B. Sparks, H. D. Tran, Z. I. Tsvetanov, R. L. White, & W. Zheng.* 595, 589 (2003)

Extended X-Ray Emission around 4C 41.17 at $z = 3.8$. *Caleb Scharf, Ian Smail, Rob Ivison, Richard Bower, Wil van Breugel, & Michiel Reuland.* 596, 105 (2003)

Evolution of Cluster Elliptical Galaxies. *L. Felipe Barrientos & Simon J. Lilly.* 596, 129 (2003)

The Star-forming Dwarf Galaxy Populations of two $z \sim 0.4$ Clusters: MS 1512.4+3647 and A851. *Jennifer M. Lotz, Crystal L. Martin, & Henry C. Ferguson.* 596, 143 (2003)

Evidence for a Major Merger Origin of High Redshift Sub-millimeter Galaxies. *Christopher J. Conselice, Scott C. Chapman, & Rogier A. Windhorst.* 596, L5 (2003)

The Cosmic Evolution of the Galaxy Luminosity Density. *Francesco Calura & Francesca Matteucci.* 596, 734 (2003)

Star Formation History and Other Properties of the Northern Hubble Deep Field. *Rodger I. Thompson.* 596, 748 (2003)

Massive Star Formation in a Gravitationally Lensed H II Galaxy at $z = 3.357$. *R. A. E. Fosbury, M. Villar-Martín, A. Humphrey, M. Lombardi, P. Rosati, D. Stern, R. N. Hook, B. P. Holden, S. A. Stanford, G. K. Squires, M. Rauch, & W. L. W. Sargent.* 596, 797 (2003)

Clustering of Galaxies at $z \sim 3$ Around the Probable Damped Lyα Absorber Toward QSO APM 08279+5255. *Nicolas Bouche & James D. Lowenthal.* 596, 810 (2003)

Fe II/Mg II Emission-Line Ratio in High-Redshift Quasars. *M. Dietrich, F. Hamann, I. Appenzeller, & M. Vestergaard.* 596, 817 (2003)

Early Star Formation Traced by the Highest Redshift Quasars. *R. Maiolino, Y. Juarez, R. Mujica, N. M. Nagar, & E. Oliva.* 596, L155 (2003)

New Damped Lyα Metallicities from ESI Spectroscopy of Five Palomar Sky Survey Quasars. *Jason X. Prochaska, Sandra Castro, & S. G. Djorgovski.* 148, 317 (2003)

Lyman Break Galaxies and Reionization of the Universe. *A. Gayler Harford & Nickolay Y. Gnedin.* 597, 74 (2003)

Galaxies inside Strömgren Spheres of Luminous Quasars at $z > 6$: Detection of the First Galaxies. *Renyue Cen.* 597, L13 (2003)

The Canada-UK Deep Submillimeter Survey. VII. Optical and Near-Infrared Identifications for the 14 Hour Field. *T. M. A. Webb, S. J. Lilly, D. L. Clements, S. Eales, M. Yun, M. Brodwin, L. Dunne, & W. K. Gear.* 597, 680 (2003)

The Metallicities of Star-forming Galaxies at Intermediate Redshifts $0.47 < z < 0.92$. *Simon J. Lilly, C. Marcella Carollo, & Alan N. Stockon.* 597, 730 (2003)

The K-selected Butcher-Oemler Effect. *Roberto De Propris, S. A. Stanford, Peter R. Eisenhardt, & Mark Dickinson.* 598, 20 (2003)

Galaxies under the Cosmic Microscope: A Gemini Multiobject Spectrograph Study of the Lensed Disk Galaxy 289 in A2218. *A. M. Swinbank, J. Smith, R. G. Bower, A. Bunker, I. Smail, R. S. Ellis, Graham P. Smith, J.-P. Kneib, M. Sullivan, & J. Allington-Smith.* 598, 162 (2003)

Infrared Spectroscopy of 15 Radio Galaxies at $2 < z < 2.6$. *Fumihide Iwamuro, Kentaro Motohara, Toshinori Maihara, Masahiko Kimura, Shigeru Eto, Takanori Shima, Daisaku Mochida, Shinpei Wada, Satoko Imai, & Kentaro Aoki.* 598, 178 (2003)

The Internal Ultraviolet–Optical Color Dispersion: Quantifying the Morphological K-Correction. *Casey Papovich, Mauro Giavalisco, Mark Dickinson, Christopher J. Conselice, & Henry C. Ferguson.* 598, 827 (2003)

Constraining Evolution in the Halo Model Using Galaxy Redshift Surveys. *Renbin Yan, Darren S. Madgwick, & Martin White.* 598, 848 (2003)

Lyα Emission in Starbursts: Implications for Galaxies at High Redshift. *J. M. Mas-Hesse, D. Kunth, G. Tenorio-Tagle, C. Leitherer, R. J. Terlevich, & E. Terlevich.* 598, 858 (2003)

Hubble Space Telescope Images of Submillimeter Sources: Large Irregular Galaxies at High Redshift. *S. C. Chapman, R. Windhorst, S. Odewahn, H. Yan, & C. Conselice.* 599, 92 (2003)

Gas and Dust in the Extremely Red Object ERO J164502+4626.4. *Thomas R. Greve, Rob J. Ivison, & Padeli P. Papadopoulos.* 599, 839 (2003)

The Rest-Frame Optical Luminosity Density, Color, and Stellar Mass Density of the Universe from $z = 0$ to $z = 3$. *Gregory Rudnick, Hans-Walter Rix, Marijn Franx, Ivo Labbé, Michael Blanton, Emanuele Daddi, Natascha M. Förster Schreiber, Alan Moorwood, Huub Röttgering, Ignacio Trujillo, Arjen van de Wel, Paul van der Werf, Pieter G. van Dokkum, & Lottie van Starkenburg.* 599, 847 (2003)

The Nature of E+A Galaxies in Intermediate Redshift Clusters. *Kim-Vy H. Tran, Marijn Franx, Garth Illingworth, Daniel D. Kelson, & Pieter van Dokkum.* 599, 865 (2003)

The DEEP2 Galaxy Redshift Survey: Spectral Classification of Galaxies at $z \sim 1$. *Darren S. Madgwick, Alison L. Coil, Christopher J. Conselice, Michael C. Cooper, Marc Davis, Richard S. Ellis, Sandy M. Faber, Douglas P. Finkbeiner, Brian Gerke, Puragra Guhathakurta, Nick Kaiser, David C. Koo, Jeffrey A. Newman, Andrew C. Phillips, Charles C. Steidel, Benjamin J. Weiner, Christopher N. A. Willmer, & R. Yan.* 599, 997 (2003)

GALAXIES: INDIVIDUAL

Messier Number: M31

Event Rates and Timescale Distributions from Realistic Microlensing Models of M31. *Edward A. Baltz, Geza Gyuk, & Arlin Crotts.* 582, 30 (2003)

New Mass Estimators for Tracer Populations. *N. W. Evans, M. I. Wilkinson, K. M. Perren, & T. J. Bridges.* 583, 752 (2003)

Chandra Studies of the X-Ray Point Source Luminosity Functions of M31. *Albert K. H. Kong, Rosanne DiStefano, Michael R. Garcia, & Jochen Greiner.* 585, 298 (2003)

Disk-Bulge-Halo Models for the Andromeda Galaxy. *Lawrence M. Widrow, Kathryn M. Perrett, & Sherry H. Suyu.* 588, 311 (2003)

Substructure in the Andromeda Galaxy Globular Cluster System. *K. M. Perrett, D. A. Stiff, D. A. Hanes, & T. J. Bridges.* 589, 790 (2003)

Discovery of Radio/X-Ray/Optical–resolved Supernova Remnants in the Center of the Andromeda Galaxy. *A. K. H. Kong, L. O. Sjouwerman, B. F. Williams, M. R. Garcia, & J. R. Dickel.* 590, L21 (2003)

Evidence of a Significant Intermediate-Age Population in the M31 Halo from Main-Sequence Photometry. *Thomas M. Brown, Henry C. Ferguson, Ed Smith, Randy A. Kimble, Allen V. Sweigart, Alvio Renzini, R. Michael Rich, & Don A. VandenBerg.* 592, L17 (2003)

Theory of Pixel Lensing toward M31. II. The Velocity Anisotropy and Flattening of the MACHO Distribution. *E. Kerins, J. An, N. W. Evans, P. Baillon, B. J. Carr, Y. Giraud-Héraud, A. Gould, P. Hewett, J. Kaplan, S.*

Paulin-Henriksson, S. J. Smartt, Y. Tsarpras, & D. Valls-Gabaud. 598, 993 (2003)

The Wendelstein Calar Alto Pixellensing Project (WeCAPP): First MACHO Candidates. *Arno Riffeser, Jürgen Fliri, Ralf Bender, Stella Seitz, & Claus A. Gössl.* 599, L17 (2003)

Messier Number: M32

Detection of the "Active" Nucleus of M32. *Luis C. Ho, Yuichi Terashima, & James S. Ulvestad.* 589, 783 (2003)

Messier Number: M33

Spectral Visibility of the Nucleus of M33 in a *Chandra*/ACIS Observation. *V. La Parola, F. Damiani, G. Fabbiano, & G. Peres.* 583, 758 (2003)

Optical Spectroscopy and Ionization Models of the Diffuse Ionized Gas in M33, M51/NGC 5195, and M81. *Charles G. Hoopes & René A. M. Walterbos.* 586, 902 (2003)

Infrared Space Observatory Long-Wavelength Spectrometer Spectroscopy of Star-forming Regions in M33. *S. J. U. Higdon, J. L. Higdon, J. M. van der Hulst, & G. J. Stacey.* 592, 161 (2003)

Searches for Giant Pulses from Extragalactic Pulsars. *M. A. McLaughlin & J. M. Cordes.* 596, 982 (2003)

Giant Molecular Clouds in M33. II. High-Resolution Observations. *E. Rosolowsky, G. Engargiola, R. Plambeck, & L. Blitz.* 599, 257 (2003)

Giant Molecular Clouds in M33. I. BIMA All-Disk Survey. *G. Engargiola, R. L. Plambeck, E. Rosolowsky, & L. Blitz.* 149, 343 (2003)

Messier Number: M49

Dynamics of the Globular Cluster System Associated with M49 (NGC 4472): Cluster Orbital Properties and the Distribution of Dark Matter. *Patrick Côté, Dean E. McLaughlin, Judith G. Cohen, & John P. Blakeslee.* 591, 850 (2003)

Hubble Space Telescope Observations of Novae in M49. *Laura Ferrarese, Patrick Côté, & Andrés Jordán.* 599, 1302 (2003)

Messier Number: M51

Kinematics of Planetary Nebulae in M51's Tidal Debris. *Patrick R. Durrell, J. Christopher Mihos, John J. Feldmeier, George H. Jacoby, & Robin Ciardullo.* 582, 170 (2003)

Optical Spectroscopy and Ionization Models of the Diffuse Ionized Gas in M33, M51/NGC 5195, and M81. *Charles G. Hoopes & René A. M. Walterbos.* 586, 902 (2003)

Luminous Supersoft X-Ray Sources in External Galaxies. *R. Di Stefano & A. K. H. Kong.* 592, 884 (2003)

Messier Number: M74

Spectropolarimetry of the Type Ic Supernova SN 2002ap in M74: More Evidence for Asymmetric Core Collapse. *Lifan Wang, Dietrich Baade, Peter Höflich, & J. Craig Wheeler.* 592, 457 (2003)

Messier Number: M81

A Scattered Light Echo around SN 1993J in M81. *Ji-Feng Liu, Joel N. Bregman, & Patrick Seitzer.* 582, 919 (2003)

Chandra X-Ray Observations of the Spiral Galaxy M81. *Douglas A. Swartz, Kajal K. Ghosh, Michael L. McCollough, Thomas G. Pannuti, Allyn F. Tennant, & Kinwah Wu.* 144, 213 (2003)

Optical Spectroscopy and Ionization Models of the Diffuse Ionized Gas in M33, M51/NGC 5195, and M81. *Charles G. Hoopes & René A. M. Walterbos.* 586, 902 (2003)

Messier Number: M82

The Missing Link in Star Cluster Evolution. *Richard de Grijs, Nate Bastian, & Henney J. G. L. M. Lamers.* 583, L17 (2003)

Discovery of X-Ray Quasi-periodic Oscillations from an Ultraluminous X-Ray Source in M82: Evidence against Beaming. *Tod E. Strohmayer & Richard F. Mushotzky.* 586, L61 (2003)

A ^{12}CO Map of M82: The Significance of Warm Molecular Gas. *John S. Ward, Jonas Zmuidzinas, Andrew I. Harris, & Kate G. Isaak.* 587, 171 (2003)

QSOs Associated with Messier 82. *E. Margaret Burbidge, Geoffrey Burbidge, Halton C. Arp, & Stefano Zibetti.* 591, 690 (2003)

Kinematic Masses of Super–Star Clusters in M82 from High-Resolution Near-Infrared Spectroscopy. *Nate McCrady, Andrea M. Gilbert, & James R. Graham.* 596, 240 (2003)

Cooling in Coronal Gas in the M82 Starburst Superwind. *Charles G. Hoopes, Timothy M. Heckman, David K. Strickland, & J. Christopher Howk.* 596, L175 (2003)

The Nature of Starburst Activity in M82. *N. M. Förster Schreiber, R. Genzel, D. Lutz, & A. Sternberg.* 599, 193 (2003)

Messier Number: M83

The Cepheid Distance to NGC 5236 (M83) with the ESO Very Large Telescope. *Frank Thim, G. A. Tammann, A. Saha, A. Dolphin, Allan Sandage, E. Tolstoy, & Lukas Labhardt.* 590, 256 (2003)

Reanalysis of Very Large Telescope Data for M83 with Image Subtraction—Ninefold Increase in Number of Cepheids. *A. Z. Bonanos & K. Z. Stanek.* 591, L111 (2003)

Luminous Supersoft X-Ray Sources in External Galaxies. *R. Di Stefano & A. K. H. Kong.* 592, 884 (2003)

Messier Number: M87

Accretion onto the Supermassive Black Hole in M87. *Tiziana Di Matteo, Steven W. Allen, Andrew C. Fabian, Andrew S. Wilson, & Andrew J. Young.* 582, 133 (2003)

Emission and Absorption in the M87 LINER. *Bassem M. Sabra, Joseph C. Shields, Luis C. Ho, Aaron J. Barth, & Alexei V. Filippenko.* 584, 164 (2003)

Flaring X-Ray Emission from HST-1, a Knot in the M87 Jet. *D. E. Harris, J. A. Biretta, W. Junor, E. S. Perlman, W. B. Sparks, & A. S. Wilson.* 586, L41 (2003)

Modeling the Dynamical Evolution of the M87 Globular Cluster System. *E. Vesperini, S. E. Zepf, A. Kundu, & K. M. Ashman.* 593, 760 (2003)

High-Energy Gamma Rays From FR I Jets. *L. Stawarz, M. Sikora, & M. Ostrowski.* 597, 186 (2003)

Month-Timescale Optical Variability in the M87 Jet. *Eric S. Perlman, D. E. Harris, John A. Biretta, William B. Sparks, & F. Duccio Macchetto.* 599, L65 (2003)

Messier Number: M100

SN 1979C VLBI: 22 Years of Almost Free Expansion. *Norbert Bartel & Michael F. Bietenholz.* 591, 301 (2003)

Messier Number: M101

Chandra Observation of Luminous and Ultraluminous X-Ray Binaries in M101. *K. Mukai, W. D. Pence, S. L. Snowden, & K. D. Kuntz.* 582, 184 (2003)

Diffuse X-Ray Emission from M101. *K. D. Kuntz, S. L. Snowden, W. D. Pence, & K. Mukai.* 588, 264 (2003)

The Composition Gradient in M101 Revisited. II. Electron Temperatures and Implications for the Nebular Abundance Scale. *Robert C. Kennicutt, Jr., Fabio Bresolin, & Donald R. Garnett.* 591, 801 (2003)

Luminous Supersoft X-Ray Sources in External Galaxies. *R. Di Stefano & A. K. H. Kong.* 592, 884 (2003)

Messier Number: M104

X-Ray Point Sources in the Sombrero Galaxy: Supersoft Sources, the Globular Cluster/Low-Mass X-Ray Binary Connection, and an Overview. *R. DiStefano, A. K. H. Kong, M. L. VanDalfsen, W. E. Harris, S. S. Murray, & K. M. Delain.* 599, 1067 (2003)

NGC Number: NGC 205

The Asymptomatic Giant Branch of NGC 205: The Characteristics of Carbon Stars and M Giants Identified From JHK' Images. *T. J. Davidge.* 597, 289 (2003)

NGC Number: NGC 253

The Collimated Wind in NGC 253. *H. Sugai, R. I. Davies, & M. J. Ward.* 584, L9 (2003)

Galactic Gamma-Ray Halo of the Nearby Starbust Galaxy NGC 253. *C. Itoh, R. Enomoto, S. Yanagita, T. Yoshida, & T. G. Tsuru.* 584, L65 (2003)

Signatures of Hadronic Cosmic Rays in Starbursts? High-Energy Photons and Neutrinos from NGC 253. *Gustavo E. Romero & Diego F. Torres.* 586, L33 (2003)

CO $J = 7 \rightarrow 6$ Observations of NGC 253: Cosmic-Ray–heated Warm Molecular Gas. *C. M. Bradford, T. Nikola, G. J. Stacey, A. D. Bolatto, J. M. Jackson, M. L. Savage, J. A. Davidson, & S. J. Higdon.* 586, 891 (2003)

Constraints on Cold Dark Matter in the Gamma-Ray Halo of NGC 253. *R. Enomoto, T. Yoshida, S. Yanagita, & C. Itoh.* 596, 216 (2003)

NGC Number: NGC 300

A Luminous Recurrent Supersoft X-Ray Source in NGC 300. *A. K. H. Kong & R. Di Stefano.* 590, L13 (2003)

NGC Number: NGC 598

Giant Molecular Clouds in M33. II. High-Resolution Observations. *E. Rosolowsky, G. Engargiola, R. Plambeck, & L. Blitz.* 599, 257 (2003)

Giant Molecular Clouds in M33. I. BIMA All-Disk Survey. *G. Engargiola, R. L. Plambeck, E. Rosolowsky, & L. Blitz.* 149, 343 (2003)

NGC Number: NGC 628

Spectropolarimetry of the Type Ic Supernova SN 2002ap in M74: More Evidence for Asymmetric Core Collapse. *Lifan Wang, Dietrich Baade, Peter Höflich, & J. Craig Wheeler.* 592, 457 (2003)

NGC Number: NGC 720

X-Ray Source Population in the Elliptical Galaxy NGC 720 with *Chandra*. *Tesla E. Jeltema, Claude R. Canizares, David A. Buote, & Gordon P. Garmire.* 585, 756 (2003)

NGC Number: NGC 891

Probing O VI Emission in the Halos of Edge-On Spiral Galaxies. *B. Otte, E. M. Murphy, J. C. Howk, Q. D. Wang, W. R. Oegerle, & K. R. Sembach.* 591, 821 (2003)

NGC Number: NGC 1068

A *Chandra* X-Ray Study of NGC 1068. II. The Luminous X-Ray Source Population. *David A. Smith & Andrew S. Wilson.* 591, 138 (2003)

NGC Number: NGC 1097

A Minor-Merger Interpretation for NGC 1097's "Jets." *James L. Higdon & John F. Wallin.* 585, 281 (2003)

Evolution of the Nuclear Accretion Disk Emission in NGC 1097: Getting Closer to the Black Hole. *Thaisa Storchi-Bergmann, Rodrigo Nemmen da Silva, Michael Eracleous, Jules P. Halpern, Andrew S. Wilson, Alexei V. Filippenko, Maria Teresa Ruiz, R. Chris Smith, & Neil M. Nagar.* 598, 956 (2003)

NGC Number: NGC 1097A

A Minor-Merger Interpretation for NGC 1097's "Jets." *James L. Higdon & John F. Wallin.* 585, 281 (2003)

NGC Number: NGC 1097B

A Minor-Merger Interpretation for NGC 1097's "Jets." *James L. Higdon & John F. Wallin.* 585, 281 (2003)

NGC Number: NGC 1129

Chandra Observation of the Core of the Galaxy Cluster AWM 7. *T. Furusho, N. Y. Yamasaki, & T. Ohashi.* 596, 181 (2003)

NGC Number: NGC 1143

Azimuthal and Kinematic Segregation of Neutral and Molecular Gas in Arp 118: The Yin-Yang Galaxy NGC 1144. *P. N. Appleton, V. Charmandaris, Yu Gao, Tom Jarrett, & M. A. Bransford.* 586, 112 (2003)

NGC Number: NGC 1144

Azimuthal and Kinematic Segregation of Neutral and Molecular Gas in Arp 118: The Yin-Yang Galaxy NGC 1144. *P. N. Appleton, V. Charmandaris, Yu Gao, Tom Jarrett, & M. A. Bransford.* 586, 112 (2003)

NGC Number: NGC 1241

Circumnulear Structures in the Interacting Seyfert Galaxy of NGC 1241: Kinematics and Optical/Infrared Morphology. *Rubén J. Díaz, Horacio Dottori, Nelson Vera-Villamizar, & Gustavo Carranza.* 597, 860 (2003)

NGC Number: NGC 1275

XMM-Newton Observations of the Perseus Cluster. I. The Temperature and Surface Brightness Structure. *E. Churazov, W. Forman, C. Jones, & H. Boehringer.* 590, 225 (2003)

NGC Number: NGC 1316

Chandra X-Ray Observations of NGC 1316 (Fornax A). *Dong-Woo Kim & G. Fabbiano.* 586, 826 (2003)

NGC Number: NGC 1448

Spectropolarimetry of SN 2001el in NGC 1448: Asphericity of a Normal Type Ia Supernova. *Lifan Wang, Dietrich Baade, Peter Höflich, Alexei Khokhlov, J. Craig Wheeler, D. Kasen, Peter E. Nugent, Saul Perlmutter, Claes Fransson, & Peter Lundqvist.* 591, 1110 (2003)

NGC Number: NGC 1550

Chandra Observations of the NGC 1550 Galaxy Group: Implication for the Temperature and Entropy Profiles of 1 keV Galaxy Groups. *M. Sun, W. Forman, A. Vikhlinin, A. Hornstrup, C. Jones, & S. S. Murray.* 598, 250 (2003)

NGC Number: NGC 1569

Discovery of Bright Variable X-Ray Sources in NGC 569 with *Chandra*. *K. Heike, H. Awaki, Y. Misao, K. Hayashida, & K. A. Weaver.* 591, L99 (2003)

NGC Number: NGC 1637

The Cepheid Distance to NGC 1637: A Direct Test of the Expanding Photosphere Method Distance to SN 1999em. *Douglas C. Leonard, Shashi M. Kanbur, Choong C. Ngeow, & Nial R. Tanvir.* 594, 247 (2003)

A Deep *Chandra* X-Ray Observation of NGC 1637. *Stefan Immler, Q. Daniel Wang, Douglas C. Leonard, & Eric M. Schlegel.* 595, 727 (2003)

NGC Number: NGC 2445

The Structure of High Strehl Ratio Point-Spread Functions. *Marshall D. Perrin, Anand Sivaramakrishnan, Russell B. Makidon, Ben R. Oppenheimer, & James R. Graham.* 596, 702 (2003)

NGC Number: NGC 2552

High-Resolution Measurements of the Dark Matter Halo of NGC 2976: Evidence for a Shallow Density Profile. *Joshua D. Simon, Alberto D. Bolatto, Adam Leroy, & Leo Blitz.* 596, 957 (2003)

NGC Number: NGC 2613

High-Latitude H I in NGC 2613: Buoyant Disk-Halo Outflow. *Judith A. Irwin & Tara Chaves.* 585, 268 (2003)

NGC Number: NGC 2787

When Is a Bulge Not a Bulge? Inner Disks Masquerading as Bulges in NGC 2787 and NGC 3945. *Peter Erwin, Juan Carlos Vega Beltrán, Alister W. Graham, & John E. Beckman.* 597, 929 (2003)

NGC Number: NGC 2915

On the Spiral Structure of NGC 2915 and Dark Matter. *F. S. Masset & M. Bureau.* 586, 152 (2003)

The Discovery of Globular Clusters in the Protospiral Galaxy NGC 2915: Implications for Hierarchical Galaxy Evolution. *Gerhardt R. Meurer, J. P. Blakeslee, M. Sirianni, H. C. Ford, G. D. Illingworth, N. Benítez, M. Clampin, F. Menanteau, H. D. Tran, R. A. Kimble, G. F. Hartig, D. R. Ardila, F. Bartko, R. J. Bouwens, T. J. Broadhurst, R. A. Brown, C. J. Burrows, E. S. Cheng, N. J. G. Cross, P. D. Feldman, D. A. Golimowski, C. Gronwall, L. Infante, J. E. Krist, M. P. Lesser, A. R. Martel, G. K. Miley, M. Postman, P. Rosati, W. B. Sparks, Z. I. Tsvetanov, R. L. White, & W. Zheng.* 599, L83 (2003)

NGC Number: NGC 2950

Direct Confirmation of Two Pattern Speeds in the Double-barred Galaxy NGC 2950. *E. M. Corsini, Victor P. Debattista, & J. A. L. Aguerri.* 599, L29 (2003)

NGC Number: NGC 2976

High-Resolution Measurements of the Dark Matter Halo of NGC 2976: Evidence for a Shallow Density Profile. *Joshua D. Simon, Alberto D. Bolatto, Adam Leroy, & Leo Blitz.* 596, 957 (2003)

NGC Number: NGC 3011

Discovery of a Double Ring in the Dwarf Galaxy Markarian 409. *A. Gil de Paz, B. F. Madore, K. Noeske, L. M. Cairós, P. Papaderos, & S. A. Silich.* 596, L179 (2003)

NGC Number: NGC 3077

Chandra Observations of Expanding Shells in the Dwarf Starburst Galaxy NGC 3077. *Jürgen Ott, Crystal L. Martin, & Fabian Walter.* 594, 776 (2003)

NGC Number: NGC 3115

Some Constraints on the Effects of Age and Metallicity on the Low-Mass X-Ray Binary Formation Rate. *Arunav Kundu, Thomas J. Maccarone, Stephen E. Zepf, & Thomas H. Puzia.* 589, L81 (2003)

NGC Number: NGC 3227

Black Hole Masses in Three Seyfert Galaxies. *C. A. Onken, B. M. Peterson, M. Dietrich, A. Robinson, & I. M. Salamanca.* 585, 121 (2003)

NGC Number: NGC 3256

Radio Emission Associated with Ultraluminous X-Ray Sources in the Galaxy Merger NGC 3256. *S. G. Neff, James S. Ulvestad, & S. D. Campion.* 599, 1043 (2003)

NGC Number: NGC 3368

The Leo I Cloud: Secular Nuclear Evolution of NGC 3379, NGC 3384, and NGC 3368? *O. K. Sil'chenko, A. V. Moiseev, V. L. Afanasiev, V. H. Chavushyan, & J. R. Valdes.* 591, 185 (2003)

NGC Number: NGC 3379

The Leo I Cloud: Secular Nuclear Evolution of NGC 3379, NGC 3384, and NGC 3368? *O. K. Sil'chenko, A. V. Moiseev, V. L. Afanasiev, V. H. Chavushyan, & J. R. Valdes.* 591, 185 (2003)

NGC Number: NGC 3384

The Leo I Cloud: Secular Nuclear Evolution of NGC 3379, NGC 3384, and NGC 3368? *O. K. Sil'chenko, A. V. Moiseev, V. L. Afanasiev, V. H. Chavushyan, & J. R. Valdes.* 591, 185 (2003)

NGC Number: NGC 3516

Black Hole Masses in Three Seyfert Galaxies. *C. A. Onken, B. M. Peterson, M. Dietrich, A. Robinson, & I. M. Salamanca.* 585, 121 (2003)

Elemental Abundances in NGC 3516. *T. J. Turner, S. B. Kraemer, R. F. Mushotzky, I. M. George, & J. R. Gabel.* 594, 128 (2003)

NGC Number: NGC 3556

Chandra Observation of the Edge-on Galaxy NGC 3556 (M108): Violent Galactic Disk-Halo Interaction Revealed. *Q. Daniel Wang, Tara Chaves, & Judith A. Irwin.* 598, 969 (2003)

NGC Number: NGC 3690

Chandra Observations of the X-Ray–luminous Star-forming Galaxy Merger Arp 299. *A. Zezas, M. J. Ward, & S. S. Murray.* 594, L31 (2003)

NGC Number: NGC 3783

The Ionized Gas and Nuclear Environment in NGC 3783. II. Averaged *Hubble Space Telescope*/STIS and *Far Ultraviolet Spectroscopic Explorer* Spectra. *Jack R. Gabel, D. Michael Crenshaw, Steven B. Kraemer, W. N. Brandt, Ian M. George, Frederick W. Hamann, Mary Elizabeth Kaiser, Shai Kaspi, Gerard A. Kriss, Smita Mathur, Richard F. Mushotzky, Kirpal Nandra, Hagai Netzer, Bradley M. Peterson, Joseph C. Shields, T. J. Turner, & Wei Zheng.* 583, 178 (2003)

The Ionized Gas and Nuclear Environment in NGC 3783. III. Detection of a Decreasing Radial Velocity in an Intrinsic Ultraviolet Absorber. *Jack R. Gabel, D. Michael Crenshaw, Steven B. Kraemer, W. N. Brandt, Ian M. George, Frederick W. Hamann, Mary Elizabeth Kaiser, Shai Kaspi, Gerard A. Kriss, Smita Mathur, Richard F. Mushotzky, Kirpal Nandra, Hagai Netzer, Bradley M. Paterson, Joseph C. Shields, T. J. Turner, & Wei Zheng.* 595, 120 (2003)

Toward a Self-Consistent Model of the Ionized Absorber in NGC 3783. *Y. Krongold, F. Nicastro, N. S. Brickhouse, M. Elvis, D. A. Liedahl, & S. Mathur.* 597, 832 (2003)

A Long Look at NGC 3783 with the *XMM-Newton* Reflection Grating Spectrometer. *Ehud Behar, Andrew P. Rasmussen, Alexander J. Blustin, Masao Sako, Steven M. Kahn, Jelle S. Kaastra, Graziella Branduardi-Raymont, & Katrien C. Steenbrugge.* 598, 232 (2003)

The Ionized Gas and Nuclear Environment in NGC 3783. IV. Variability and Modeling of the 900 Kilosecond *Chandra* Spectrum. *Hagai Netzer, Shai Kaspi, Ehud Behar, W. N. Brandt, Doron Chelouche, Ian M. George, D. Michael Crenshaw, Jack R. Gabel, Frederick W. Hamann, Steven B. Kraemer, Gerard A. Kriss, Kirpal Nandra, Bradley M. Peterson, Joseph C. Shields, & T. J. Turner.* 599, 933 (2003)

NGC Number: NGC 3945

When Is a Bulge Not a Bulge? Inner Disks Masquerading as Bulges in NGC 2787 and NGC 3945. *Peter Erwin, Juan Carlos Vega Beltrán, Alister W. Graham, & John E. Beckman.* 597, 929 (2003)

NGC Number: NGC 4038/4039

The Time-variable Ultraluminous X-Ray Sources of "The Antennae." *G. Fabbiano, A. Zezas, A. R. King, T. J. Ponman, A. Rots, & Francois Schweizer.* 584, L5 (2003)

A Variable Ultraluminous Supersoft X-Ray Source in "The Antennae": Stellar-Mass Black Hole or White Dwarf? *G. Fabbiano, A. R. King, A. Zezas, T. J. Ponman, A. Rots, & François Schweizer.* 591, 843 (2003)

NGC Number: NGC 4038

A Multitransition CO Study of the Antennae Galaxies NGC 4038/9. *Ming Zhu, E. R. Seaquist, & Nario Kuno.* 588, 243 (2003)

The Multicolored Hot Interstellar Medium of the "Antennae" Galaxies (NGC 4038/4039). *G. Fabbiano, M. Krauss, A. Zezas, A. Rots, & S. Neff.* 598, 272 (2003)

The Mass Function of Supergiant Molecular Complexes and Implications for Forming Young Massive Star Clusters in the Antennae (NGC 4038/4039). *Christine D. Wilson, Nicholas Scoville, Suzanne C. Madden, & Vassilis Charmandaris.* 599, 1049 (2003)

NGC Number: NGC 4039

A Multitransition CO Study of the Antennae Galaxies NGC 4038/9. *Ming Zhu, E. R. Seaquist, & Nario Kuno.* 588, 243 (2003)

The Multicolored Hot Interstellar Medium of the "Antennae" Galaxies (NGC 4038/4039). *G. Fabbiano, M. Krauss, A. Zezas, A. Rots, & S. Neff.* 598, 272 (2003)

The Mass Function of Supergiant Molecular Complexes and Implications for Forming Young Massive Star Clusters in the Antennae (NGC 4038/4039). *Christine D. Wilson, Nicholas Scoville, Suzanne C. Madden, & Vassilis Charmandaris.* 599, 1049 (2003)

NGC Number: NGC 4041

Is There Really a Black Hole at the Center of NGC 4041? Constraints from Gas Kinematics. *A. Marconi, D. J. Axon, A. Capetti, W. Maciejewski, J. Atkinson, D. Batcheldor, J. Binney, M. Carollo, L. Dressel, H. Ford, J. Gerssen, M. A. Hughes, D. Macchetto, M. R. Merrifield, C. Scarlata, W. Sparks, M. Stiavelli, Z. Tsvetanov, & R. P. van der Marel.* 586, 868 (2003)

NGC Number: NGC 4051

Catching NGC 4051 in the Low State with *Chandra*. *Philip Uttley, Antonella Fruscione, Ian M. Hardy, & Georg Lamer.* 595, 656 (2003)

NGC Number: NGC 4151

The Nuclear Regions of the Seyfert Galaxy NGC 4151: Parsec-Scale H I Absorption and a Remarkable Radio Jet. *C. G. Mundell, J. M. Wrobel, A. Pedlar, & J. F. Gallimore.* 583, 192 (2003)

Resolved Mid-Infrared Emission in the Narrow-Line Region of NGC 4151. *James T. Radomski, Robert K. Piña, Christopher Packham, Charles M. Telesco, James M. De Buizer, R. Scott Fisher, & A. Robinson.* 587, 117 (2003)

Interferometer Observations of Subparsec-Scale Infrared Emission in the Nucleus of NGC 4151. *Mark Swain, G. Vasisht, R. Akeson, J. Monnier, R. Millan-Gabet, E. Serabyn, M. Creech-Eakman, G. van Belle, J. Beletic, C. Beichman, A. Boden, A. Booth, M. Colavita, J. Gathright, M. Hrynevych, C. Koresko, D. Le Mignant, R. Ligon, B. Mennesson, C. Neyman, A. Sargent, M. Shao, R. Thompson, S. Unwin, & P. Wizinowich.* 596, L163 (2003)

NGC Number: NGC 4244

1WGA J1216.9+3743: *Chandra* Finds an Extremely Steep Ultraluminous X-Ray Source. *I. Cagnoni, R. Turolla, A. Treaves, J.-S. Huang, D. W. Kim, M. Elvis, & A. Celotti.* 582, 654 (2003)

NGC Number: NGC 4261

The *XMM-Newton* View of the Nucleus of NGC 4261. *R. M. Sambruna, M. Gliozzi, M. Eracleous, W. N. Brandt, & R. Mushotzky.* 586, L37 (2003)

Shadowing of the Nascent Jet in NGC 4261 by a Line-Emitting Supersonic Accretion Disk. *Siming Liu, Michael J. Fromerth, & Fulvio Melia.* 596, 879 (2003)

NGC 4261 and NGC 4697: Rejuvenated Elliptical Galaxies. *A. Zezas, L. Hernquist, G. Fabbiano, & J. Miller.* 599, L73 (2003)

NGC Number: NGC 4303

Nuclear Activity and Massive Star Formation in the Low-Luminosity Active Galactic Nucleus NGC 4303: *Chandra* X-Ray Observations. *E. Jiménez-Bailón, M. Santos-Lleó, J. M. Mas-Hesse, M. Guainazzi, L. Colina, M. Cerviño, & Rosa M. González Delgado.* 593, 127 (2003)

NGC Number: NGC 4365

Evidence for an Intermediate-Age, Metal-rich Population of Globular Clusters in NGC 4365. *Søren S. Larsen, Jean P. Brodie, Michael A. Beasley, Duncan A. Forbes, Markus Kissler-Patig, Harald Kuntschner, & Thomas H. Puzia.* 585, 767 (2003)

Some Constraints on the Effects of Age and Metallicity on the Low-Mass X-Ray Binary Formation Rate. *Arunav Kundu, Thomas J. Maccarone, Stephen E. Zepf, & Thomas H. Puzia.* 589, L81 (2003)

NGC Number: NGC 4395

A Low-Mass Central Black Hole in the Bulgeless Seyfert 1 Galaxy NGC 4395. *Alexei V. Filippenko & Luis C. Ho.* 588, L13 (2003)

NGC Number: NGC 4418

Nascent Starbursts in Synchrotron-deficient Galaxies with Hot Dust. *H. Roussel, G. Helou, R. Beck, J. J. Condon, A. Bosma, K. Matthews, & T. H. Jarrett.* 593, 733 (2003)

NGC Number: NGC 4449

Chandra Observations of the Luminous, Oxygen-rich Supernova Remnants in the Irregular Galaxy NGC 4449. *Daniel J. Patnaude & Robert A. Fesen.* 587, 221 (2003)

NGC Number: NGC 4472

Dust in Hot Gas: Far-Infrared Emission from Three Local Elliptical Galaxies. *Pasquale Temi, William G. Mathews, Fabrizio Brighenti, & Jesse D. Bregman.* 585, L121 (2003)

The Low Mass X-Ray Binary–Globular Cluster Connection. II. NGC 4472 X-Ray Source Properties and Source Catalogs. *Thomas J. Maccarone, Arunav Kundu, & Stephen E. Zepf.* 586, 814 (2003)

Dynamics of the Globular Cluster System Associated with M49 (NGC 4472): Cluster Orbital Properties and the Distribution of Dark Matter. *Patrick Côté, Dean E. McLaughlin, Judith G. Cohen, & John P. Blakeslee.* 591, 850 (2003)

The Ages and Abundances of a Sample of Globular Clusters in M49 (NGC 4472). *Judith G. Cohen, J. P. Blakeslee, & P. Côté.* 592, 866 (2003)

Hubble Space Telescope Observations of Novae in M49. *Laura Ferrarese, Patrick Côté, & Andrés Jordán.* 599, 1302 (2003)

NGC Number: NGC 4486

The Ages and Abundances of a Sample of Globular Clusters in M49 (NGC 4472). *Judith G. Cohen, J. P. Blakeslee, & P. Côté.* 592, 866 (2003)

NGC Number: NGC 4491

Nascent Starbursts in Synchrotron-deficient Galaxies with Hot Dust. *H. Roussel, G. Helou, R. Beck, J. J. Condon, A. Bosma, K. Matthews, & T. H. Jarrett.* 593, 733 (2003)

NGC Number: NGC 4593

Black Hole Masses in Three Seyfert Galaxies. *C. A. Onken, B. M. Peterson, M. Dietrich, A. Robinson, & I. M. Salamanca.* 585, 121 (2003)

The Kinematics and Physical Conditions of the Ionized Gas in NGC 4593 from *Chandra* High-Energy Grating Spectroscopy. *Barry McKernan, Tahir Yaqoob, Ian M. George, & T. J. Turner.* 593, 142 (2003)

NGC Number: NGC 4594

An *XMM-Newton* and *Chandra* Investigation of the Nuclear Accretion in the Sombrero Galaxy (NGC 4594). *S. Pellegrini, A. Baldi, G. Fabbiano, & D.-W. Kim.* 597, 175 (2003)

NGC Number: NGC 4608

NGC 4608 and NGC 5701: Barred Galaxies without Disks? *D. A. Gadotti & R. E. de Souza.* 583, L75 (2003)

NGC Number: NGC 4631

Probing O VI Emission in the Halos of Edge-On Spiral Galaxies. *B. Otte, E. M. Murphy, J. C. Howk, Q. D. Wang, W. R. Oegerle, & K. R. Sembach.* 591, 821 (2003)

NGC Number: NGC 4639

Dust in Hot Gas: Far-Infrared Emission from Three Local Elliptical Galaxies. *Pasquale Temi, William G. Mathews, Fabrizio Brighenti, & Jesse D. Bregman.* 585, L121 (2003)

NGC Number: NGC 4649

Dust in Hot Gas: Far-Infrared Emission from Three Local Elliptical Galaxies. *Pasquale Temi, William G. Mathews, Fabrizio Brighenti, & Jesse D. Bregman.* 585, L121 (2003)

NGC Number: NGC 4650A

Stellar Motions in the Polar Ring Galaxy NGC 4650A. *Rob A. Swaters & Vera C. Rubin.* 587, L23 (2003)

NGC Number: NGC 4697

Luminous Supersoft X-Ray Sources in External Galaxies. *R. Di Stefano & A. K. H. Kong.* 592, 884 (2003)

NGC Number: NGC 4698

Chandra Observations of NGC 4698: A Seyfert 2 Galaxy with No Absorption. *I. Georgantopoulos & A. Zezas.* 594, 704 (2003)

NGC Number: NGC 4945

Simultaneous *Chandra* and *Rossi X-Ray Timing Explorer* Observations of the Nearby Bright Seyfert 2 Galaxy NGC 4945. *Chris Done, Greg M. Madejski, Piotr T. Życki, & Lincoln J. Greenhill.* 588, 763 (2003)

NGC Number: NGC 5033

Radio Emission from SN 2001gd in NGC 5033. *Christopher J. Stockdale, Kurt W. Weiler, Schuyler D. Van Dyk, Marcos J. Montes, Nino Panagia, Richard A. Sramek, M. A. Perez-Torres, & J. M. Marcaide.* 592, 900 (2003)

NGC Number: NGC 5044

XMM-Newton and *Chandra* Observations of the Galaxy Group NGC 5044. II. Metal Abundances and Supernova Fraction. *David A. Buote, Aaron D. Lewis, Fabrizio Brighenti, & William G. Mathews.* 595, 151 (2003)

NGC Number: NGC 5128

X-Ray Emission from the Hot Interstellar Medium and Southwest Radio Lobe of the Nearby Radio Galaxy Centaurus A. *R. P. Kraft, S. E. Vázquez, W. R. Forman, C. Jones, S. S. Murray, M. J. Hardcastle, D. M. Worrall, & E. Churazov.* 592, 129 (2003)

Radio and X-Ray Observations of the Jet in Centaurus A. *M. J. Hardcastle, D. M. Worrall, R. P. Kraft, W. R. Forman, C. Jones, & S. S. Murray.* 593, 169 (2003)

Spatially Resolved Circumnuclear Dust in Centaurus A. *Margarita Karovska, Massimo Marengo, Martin Elvis, Giovanni G. Fazio, Joseph L. Hora, Philip M. Hinz, William F. Hoffmann, Michael Meyer, & Eric Mamajek.* 598, L91 (2003)

NGC Number: NGC 5195

Optical Spectroscopy and Ionization Models of the Diffuse Ionized Gas in M33, M51/NGC 5195, and M81. *Charles G. Hoopes & René A. M. Walterbos.* 586, 902 (2003)

NGC Number: NGC 5236

Reanalysis of Very Large Telescope Data for M83 with Image Subtraction—Ninefold Increase in Number of Cepheids. *A. Z. Bonanos & K. Z. Stanek.* 591, L111 (2003)

NGC Number: NGC 5252

The Infrared Spectral Energy Distribution of the Seyfert 2 Prototype NGC 5252. *M. Almudena Prieto & J. A. Acosta-Pulido.* 583, 689 (2003)

NGC Number: NGC 5253

The Cepheid Distance to NGC 5236 (M83) with the ESO Very Large Telescope. *Frank Thim, G. A. Tammann, A. Saha, A. Dolphin, Allan Sandage, E. Tolstoy, & Lukas Labhardt.* 590, 256 (2003)

NGC Number: NGC 5457

Diffuse X-Ray Emission from M101. *K. D. Kuntz, S. L. Snowden, W. D. Pence, & K. Mukai.* 588, 264 (2003)

The Composition Gradient in M101 Revisited. II. Electron Temperatures and Implications for the Nebular Abundance Scale. *Robert C. Kennicutt, Jr., Fabio Bresolin, & Donald R. Garnett.* 591, 801 (2003)

NGC Number: NGC 5548

Correlated Long-Term Optical and X-Ray Variations in NGC 5548. *Philip Uttley, Rick Edelson, Ian M. McHardy, Bradley M. Peterson, & Alex Markowitz.* 584, L53 (2003)

Using Multiwavelength Observations to Determine the Black Hole Mass and Accretion Rate in the Type 1 Seyfert Galaxy NGC 5548. *James Chiang & Omer Blaes.* 586, 97 (2003)

An Intrinsic Baldwin Effect in the Hβ Broad Emission Line in the Spectrum of NGC 5548. *Karoline M. Gilbert & Bradley M. Peterson.* 587, 123 (2003)

Contrasting the Ultraviolet and X-Ray O VI Column Density Inferred for the Outflow in NGC 5548. *Nahum Arav, Jelle Kaastra, Katrien Steenbrugge, Bert Brinkman, Rick Edelson, Kirk T. Korista, & Martijn de Kool.* 590, 174 (2003)

Simultaneous Ultraviolet and X-Ray Spectroscopy of the Seyfert 1 Galaxy NGC 5548. I. Physical Conditions in the Ultraviolet Absorbers. *D. M. Crenshaw, S. B. Kraemer, J. R. Gabel, J. S. Kaastra, K. C. Steenbrugge, A. C. Brinkman, J. P. Dunn, I. M. George, D. A. Liedahl, F. B. S. Paerels, T. J. Turner, & T. Yaqoob.* 594, 116 (2003)

X-Ray–Extreme Ultraviolet Simultaneous Observations of NGC 5548: Fast Extreme Ultraviolet Dip without X-Ray Variation. *Y. Haba, H. Kunieda, K. Misaki, Y. Terashima, J. S. Kaastra, R. Mewe, A. C. Fabian, & K. Iwasawa.* 599, 949 (2003)

NGC Number: NGC 5643

The Discovery of H_2O Maser Emission in Seven Active Galactic Nuclei and at High Velocities in the Circinus Galaxy. *L. J. Greenhill, P. T. Kondrakto, J. E. J. Lovell, T. B. H. Kuiper, J. M. Moran, D. L. Jauncey, & G. P. Baines.* 582, L11 (2003)

NGC Number: NGC 5701

NGC 4608 and NGC 5701: Barred Galaxies without Disks? *D. A. Gadotti & R. E. de Souza.* 583, L75 (2003)

NGC Number: NGC 5905

Follow-Up *Hubble Space Telescope*/Space Telescope Imaging Spectroscopy of Three Candidate Tidal Disruption Events. *S. Gezari, J. P. Halpern, S. Komossa, D. Grupe, & K. M. Leighly.* 592, 42 (2003)

NGC Number: NGC 6251

The Nuclear Spectral Energy Distribution of NGC 6251: A BL Lacertae Object in the Center of an FR I Radio Galaxy. *Marco Chiaberge, Roberto Gilli, Alessandro Capetti, & F. Duccio Macchetto.* 597, 166 (2003)

NGC Number: NGC 6300

The Discovery of H_2O Maser Emission in Seven Active Galactic Nuclei and at High Velocities in the Circinus Galaxy. *L. J. Greenhill, P. T. Kondrakto, J. E. J. Lovell, T. B. H. Kuiper, J. M. Moran, D. L. Jauncey, & G. P. Baines.* 582, L11 (2003)

NGC NUmber: NGC 6753

Ultraviolet-Optical Pixel Maps of Face-on Spiral Galaxies: Clues for Dynamics and Star Formation Histories. *Paul B. Eskridge, Jay A. Frogel, Violet A. Taylor, Rogier A. Windhorst, Stephen C. Odewahn, Claudia A. T. C. Chiarenza, Christopher J. Conselice, Richard de Grijs, Lynn D. Matthews, Robert W. O'Connell, & John S. Gallagher III.* 586, 923 (2003)

NGC Number: NGC 6782

Ultraviolet-Optical Pixel Maps of Face-on Spiral Galaxies: Clues for Dynamics and Star Formation Histories. *Paul B. Eskridge, Jay A. Frogel, Violet A. Taylor, Rogier A. Windhorst, Stephen C. Odewahn, Claudia A. T. C. Chiarenza, Christopher J. Conselice, Richard de Grijs, Lynn D. Matthews, Robert W. O'Connell, & John S. Gallagher III.* 586, 923 (2003)

NGC Number: NGC 6814

X-Ray Variability of the Magnetic Cataclysmic Variable V1432 Aquilae and the Seyfert Galaxy NGC 6814. *K. Mukai, C. Hellier, G. Madejski, J. Patterson, & D. R. Skillman.* 597, 479 (2003)

NGC Number: NGC 6822

RR Lyrae and Short-Period Variable Stars in the Dwarf Irregular Galaxy NGC 6822. *Gisella Clementini, Enrico V. Held, Lara Baldacci, & Luca Rizzi.* 588, L85 (2003)

Discovery of Latent Star Formation in the Extended H I Gas around the Local Group Dwarf Irregular Galaxy NGC 6822. *Yutaka Komiyama, Sadanori Okamura, Masafumi Yagi, Hisanori Furusawa, Mamoru Doi, Masaru Hamabe, Katsumi Imi, Masahiko Kimura, Satoshi Miyazaki, Fumiaki Nakata, Norio Okada, Masami Ouchi, Maki Sekiguchi, Kazuhiro Shimasaku, Naoki Yasuda, Nobuo Arimoto, & Chisato Ikuta.* 590, L17 (2003)

NGC Number: NGC 6946

Chandra Observation of the X-Ray Source Population of NGC 6946. *S. S. Holt, E. M. Schlegel, U. Hwang, & R. Petre.* 588, 792 (2003)

A *Chandra* Observation of The Diffuse Emission in the Face-on Spiral NGC 6946. *Eric M. Schlegel, S. S. Holt, & R. Petre.* 598, 982 (2003)

NGC Number: NGC 6951

Optical and Near-Infrared Photometry of the Type Ia Supernova 2000E in NGC 6951. *G. Valentini, E. Di Carlo, F. Massi, M. Dolci, A. A. Arkharov, V. M. Larionov, A. Pastorello, A. Di Paola, S. Benetti, E. Cappellaro, M. Turatto, F. Pedichini, F. D'Alessio, A. Caratti o Garatti, G. Li Causi, R. Speziali, I. J. Danziger, & A. Tornambé.* 595, 779 (2003)

NGC Number: NGC 7674

Sensitive VLBI Continuum and H I Absorption Observations of NGC 7474: First Scientific Observations with the Combined Array VLBA, VLA, and Arecibo. *Emmanuel Momjian, Jonathan D. Romney, Christopher L. Carilli, & Thomas H. Troland.* 597, 809 (2003)

NGC Number: NGC 7714/7715

Models of the Morphology, Kinematics, and Star Formation History of the Prototypical Collisional Starburst System NGC 7714/7715=Arp 284. *Curtis Struck & Beverly J. Smith.* 589, 157 (2003)

Name: Antennae

The Multicolored Hot Interstellar Medium of the "Antennae" Galaxies (NGC 4038/4039). *G. Fabbiano, M. Krauss, A. Zezas, A. Rots, & S. Neff.* 598, 272 (2003)

Name: Arp 102B

The *ASCA* X-Ray Spectrum of Arp 102B and Evaluation of Simple Models for Its Associated, Metastable Fe II Absorber. *Michael Eracleous, Jules P. Halpern, & Jane C. Charlton.* 582, 633 (2003)

Name: Arp 118

Azimuthal and Kinematic Segregation of Neutral and Molecular Gas in Arp 118: The Yin-Yang Galaxy NGC 1144. *P. N. Appleton, V. Charmandaris, Yu Gao, Tom Jarrett, & M. A. Bransford.* 586, 112 (2003)

Name: Arp 188

Advanced Camera for Surveys Observations of Young Star Clusters in the Interacting Galaxy UGC 10214. *H. D. Tran, M. Sirianni, H. C. Ford, G. D. Illingworth, M. Clampin, G. Hartig, R. H. Becker, R. L. White, F. Bartko, N. Benítez, J. P. Blakeslee, R. Bouwens, T. J. Broadhurst, R. Brown, C. Burrows, E. Cheng, N. Cross, P. D. Feldman, M. Franx, D. A. Golimowski, C. Gronwall, L. Infante, R. A. Kimble, J. Krist, M. Lesser, D. Magee, A. R. Martel, Wm. J. McCann, G. R. Meurer, G. Miley, M. Postman, P. Rosati, W. B. Sparks, & Z. Tsvetanov.* 585, 750 (2003)

Name: Arp 220

Chandra Observations of Extended X-Ray Emission in Arp 220. *J. C. McDowell, D. L. Clements, S. A. Lamb, S. Shaked, N. C. Hearn, L. Colina, C. Mundell, K. Borne, A. C. Baker, & S. Arribas.* 591, 154 (2003)

Name: Arp 244

The Mass Function of Supergiant Molecular Complexes and Implications for Forming Young Massive Star Clusters in the Antennae (NGC 4038/4039). *Christine D. Wilson, Nicholas Scoville, Suzanne C. Madden, & Vassilis Charmandaris.* 599, 1049 (2003)

Name: Arp 299

Chandra Observations of the X-Ray–luminous Star-forming Galaxy Merger Arp 299. *A. Zezas, M. J. Ward, & S. S. Murray.* 594, L31 (2003)

Name: Carina

Clues to the Evolution of the Carina Dwarf Spheroidal Galaxy from the Color Distribution of Its Red Giant Stars. *Luca Rizzi, Enrico V. Held, Gianpaolo Bertelli, & Ivo Saviane.* 589, L85 (2003)

Name: Cartwheel

Nonnuclear Hyper/Ultralumious X-Ray Sources in the Starbursting Carthwheel Ring Galaxy. *Yu Gao, Q. Daniel Wang, P. N. Appleton, & Ray A. Lucas.* 596, L171 (2003)

Name: Centaurus A

X-Ray Emission from the Hot Interstellar Medium and Southwest Radio Lobe of the Nearby Radio Galaxy Centaurus A. *R. P. Kraft, S. E. Vázquez, W. R. Forman, C. Jones, S. S. Murray, M. J. Hardcastle, D. M. Worrall, & E. Churazov.* 592, 129 (2003)

BeppoSAX Observations of Centaurus A: The Hard Continuum and the Iron-Line Feature. *P. Grandi, M. Fiocchi, C. G. Perola, C. M. Urry, L. Maraschi, E. Massaro, G. Matt, A. Preite-Martinez, H. Steinle, & W. Collmar.* 593, 160 (2003)

Radio and X-Ray Observations of the Jet in Centaurus A. *M. J. Hardcastle, D. M. Worrall, R. P. Kraft, W. R. Forman, C. Jones, & S. S. Murray.* 593, 169 (2003)

High-Energy Gamma Rays From FR I Jets. *L. Stawarz, M. Sikora, & M. Ostrowski.* 597, 186 (2003)

Spatially Resolved Circumnuclear Dust in Centaurus A. *Margarita Karovska, Massimo Marengo, Martin Elvis, Giovanni G. Fazio, Joseph L. Hora, Philip M. Hinz, William F. Hoffmann, Michael Meyer, & Eric Mamajek.* 598, L91 (2003)

Name: Circinus

The Discovery of H_2O Maser Emission in Seven Active Galactic Nuclei and at High Velocities in the Circinus Galaxy. *L. J. Greenhill, P. T. Kondrakto, J. E. J. Lovell, T. B. H. Kuiper, J. M. Moran, D. L. Jauncey, & G. P. Baines.* 582, L11 (2003)

A Warped Accretion Disk and Wide-Angle Outflow in the Inner Parsec of the Circinus Galaxy. *L. J. Greenhill, R. S. Booth, S. P. Ellingsen, J. R. Herrnstein, D. L. Jauncey, P. M. McCulloch, J. M. Moran, R. P. Norris, J. E. Reynolds, & A. K. Tzioumis.* 590, 162 (2003)

Name: Cygnus A

Adaptive Optics Imaging and Spectroscopy of Cygnus A. I. Evidence for a Minor Merger. *Gabriela Canalizo, Claire Max, David Whysong, Robert Antonucci, & Scott E. Dahm.* 597, 823 (2003)

Name: Draco

Sloan Digital Sky Survey Catalog of Stars in the Draco Dwarf Spheroidal Galaxy. *Heather A. Rave, Chongshan Zhao, Heidi Jo Newberg, Brian Yanny, Donald P. Schneider, J. Brinkman, & Don Q. Lamb.* 145, 245 (2003)

A Search for Ionized Gas in the Draco and Ursa Minor Dwarf Spheroidal Galaxies. *J. S. Gallagher, G. J. Madsen, R. J. Reynolds, E. K. Grebel, & T. A. Smecker-Hane.* 588, 326 (2003)

Name: Henize 2-10

The Stellar Content of Henize 2-10 from Space Telescope Imaging Spectrograph Ultraviolet Spectroscopy. *Rupali Chandar, Claus Leitherer, Christy Tremonti, & Daniela Calzetti.* 586, 939 (2003)

The Spectral Energy Distributions of Infant Super–Star Clusters in Henize 2-10 from 7 Millimeters to 6 Centimeters. *Kelsey E. Johnson & Henry A. Kobulnicky.* 597, 923 (2003)

Name: Hydra A

Equilibrium Models of Galaxy Clusters with Cooling, Heating, and Conduction. *M. Brüggen.* 593, 700 (2003)

Name: Large Magellanic Cloud

Constraints on the Ionization Balance of Hot-Star Winds from *FUSE* Observations of O Stars in the Large Magellanic Cloud. *D. Massa, A. W. Fullerton, G. Sonneborn, & J. B. Hutchings.* 586, 996 (2003)

The Distance to the Large Magellanic Cloud Cluster NGC 1866 and the Surrounding Field. *M. Salaris, S. Percival, E. Brocato, G. Raimondo, & A. R. Walker.* 588, 801 (2003)

Name: Maffei 1

The Extinction and Distance of Maffei 1. *Robin L. Fingerhut, Marshall L. McCall, Michael De Robertis, Robin L. Kingsburgh, Michael Komljenovic, Henry Lee, & Ronald J. Buta.* 587, 672 (2003)

Name: Magellanic Stream

Hα Emission from High-Velocity Clouds and Their Distances. *M. E. Putman, J. Bland-Hawthorn, S. Veilleux, B. K. Gibson, K. C. Freeman, & P. R. Maloney.* 597, 948 (2003)

Name: Markarian 231

XMM-Newton Observation of Fe Kα Emission from a Broad Absorption Line Quasar: Markarian 231. *T. J. Turner & S. B. Kraemer.* 598, 916 (2003)

Name: Markarian 348

The Flaring H_2O Megamaser and Conpact Radio Source in Markarian 348. *A. B. Peck, C. Henkel, J. S. Ulvestad, A. Brunthaler, H. Falcke, M. Elitzur, K. M. Menten, & J. F. Gallimore.* 590, 149 (2003)

Name: Markarian 409

Discovery of a Double Ring in the Dwarf Galaxy Markarian 409. *A. Gil de Paz, B. F. Madore, K. Noeske, L. M. Cairós, P. Papaderos, & S. A. Silich.* 596, L179 (2003)

Name: Markarian 509

The Kinematics and Physical Conditions of the Ionized Gas in Markarian 509. I. *Chandra* High Energy Grating Spectroscopy. *Tahir Yaqoob, Barry McKernan, Steven B. Kraemer, D. Michael Crenshaw, Jack R. Gabel, Ian M. George, & T. Jane Turner.* 582, 105 (2003)

The Kinematics and Physical Conditions of the Ionized Gas in Markarian 509. II. STIS Echelle Observations. *S. B. Kraemer, D. M. Crenshaw, T. Yaqoob, B. McKernan, J. R. Gabel, I. M. George, T. J. Turner, & J. P. Dunn.* 582, 125 (2003)

Name: Markarian 766

The X-Ray Spectrum of the Seyfert I Galaxy Markarian 766: Dusty Warm Absorber or Relativistic Emission Lines? *K. O. Mason, G. Branduardi-Raymont, P. M. Ogle, M. J. Page, E. M. Puchnarewicz, E. Behar, F. A. Córdova, S. Davis, L. Maraschi, I. M. McHardy, P. T. O'Brien, W. C. Priedhorsky, & T. P. Sasseen.* 582, 95 (2003)

Name: Markarian 1039

Radio Constraints on the Starburst Ages of Two Wolf-Rayet Galaxies. *Q. F. Yin, J. H. Huang, & W. Zheng.* 597, 274 (2003)

Name: Markarian 1501

The Line Emission Region in III Zw 2: Kinematics and Variability. *L. Č. Popović, E. G. Mediavilla, E. Bon, N. Stanić, & A. Kubičela.* 599, 185 (2003)

Name: Pictor A

Detection of X-Ray Emission from the Eastern Radio Lobe of Pictor A. *Paola Grandi, Matteo Guainazzi, Laura Maraschi, Raffaella Morganti, Roberto Fusco-Femiano, Mariateresa Fiocchi, Lucia Ballo, & Fabrizio Tavecchio.* 586, 123 (2003)

Name: Sagittarius

Sagittarius Tidal Debris 90 kiloparsecs from the Galactic Center. *Heidi Jo Newberg, Brian Yanny, Eva K. Grebel, Greg Hennessy, Zeljko Ivezic, David Martinez-Delgado, Michael Odenkirchen, Hans-Walter Rix, Jon Brinkmann, Don Q. Lamb, Donald P. Schneider, & Donald G. York.* 596, L191 (2003)

Blue Horizontal-Branch Stars in the Sagittarius Dwarf Spheroidal Galaxy. *Lorenzo Monaco, Michele Bellazzini, Francesco R. Ferraro, & Elena Pancino.* 597, L25 (2003)

Name: Sagittarius dSph

Evidence for Coupling between the Sagittarius Dwarf Galaxy and the Milky Way Warp. *Jeremy Bailin.* 583, L79 (2003)

Name: Sagittarius Dwarf

To Circularize or Not to Circularize?—Orbital Evolution of Satellite Galaxies. *Yoshikazu Hashimoto, Yoko Funato, & Junichiro Makino.* 582, 196 (2003)

A Two Micron All Sky Survey All-Sky View of the Sagittarius Dwarf Galaxy. I. Morphology of the Sagittarius Core and Tidal Arms. *Steven R. Majewski, M. F. Skrutskie, Martin D. Weinberg, & James C. Ostheimer.* 599, 1082 (2003)

Name: Sagittarius Dwarf Spheroidal

Constraints on the Origin of Manganese from the Composition of the Sagittarius Dwarf Spheroidal Galaxy and the Galactic Bulge. *Andrew McWilliam, R. Michael Rich, & Tammy A. Smecker-Hane.* 592, L21 (2003)

Name: Small Magellanic Cloud

Three New Long-Period X-Ray Pulsars Discovered in the Small Magellanic Cloud. *D. J. Macomb, D. W. Fox, R. C. Lamb, & T. A. Prince.* 584, L79 (2003)

Constraints on the Ionization Balance of Hot-Star Winds from *FUSE* Observations of O Stars in the Large Magellanic Cloud. *D. Massa, A. W. Fullerton, G. Sonneborn, & J. B. Hutchings.* 586, 996 (2003)

Name: Tol 1238−364

Analysis of the Interaction Effects in the Southern Galaxy Pair Tol 1238−364 and ESO 381-G009. *S. Temporin, S. Ciroi, P. Rafanelli, M. Radovich, J. Vennik, G. M. Richter, & K. Birkle.* 148, 353 (2003)

Name: Ursa Minor

A New Method of Estimating the Mass-to-Light Ratio of the Ursa Minor Dwarf Spheroidal Galaxy. *M. ángeles Gómez-Flechoso & D. Martínez-Delgado.* 586, L123 (2003)

A Search for Ionized Gas in the Draco and Ursa Minor Dwarf Spheroidal Galaxies. *J. S. Gallagher, G. J. Madsen, R. J. Reynolds, E. K. Grebel, & T. A. Smecker-Hane.* 588, 326 (2003)

Name: Ursa Minor dwarf spheroidal

A Dynamical Fossil in the Ursa Minor Dwarf Spheroidal Galaxy. *Jan T. Kleyna, Mark I. Wilkinson, Gerard Gilmore, & N. Wyn Evans.* 588, L21 (2003)

Alphanumeric: A1201

A Unique Small-Scale Gravitational Arc in A1201. *Alastair C. Edge, Graham P. Smith, David J. Sand, Tommaso Treu, Harald Ebeling, Steven W. Allen, & Pieter G. van Dokkum.* 599, L69 (2003)

Alphanumeric: B0218+357

The Redshift of the Lensed Object in the Einstein Ring B0218+357. *Judith G. Cohen, Charles R. Lawrence, & Roger D. Blandford.* 583, 67 (2003)

Alphanumeric: B1608+656

The Gravitational Lens B1608+656. I. *V*-, *I*-, and *H*-Band *Hubble Space Telescope* Imaging. *G. Surpi & R. D. Blandford.* 584, 100 (2003)

Alphanumeric: 3C 120

Long-Term Continuous Monitoring of the Broad-Line Radio Galaxies 3C 390.3 and 3C 120 with the *Rossi X-Ray Timing Explorer*. *Mario Gliozzi, Rita M. Sambruna, & Michael Eracleous.* 584, 176 (2003)

Modeling Helical Structures in Relativistic Jets. *Philip E. Hardee.* 597, 798 (2003)

A Warm/Hot Intergalactic Medium toward 3C 120? *Barry McKernan, Tahir Yaqoob, Richard Mushotzky, Ian M. George, & T. Jane Turner.* 598, L83 (2003)

Alphanumeric: 3C 147

A Search for Correlations of TeV Gamma Rays with Ultra–High-Energy Cosmic Rays. *C. W. Akerlof, S. Biller, P. Boyle, J. Buckley, D. A. Carter-Lewis, M. Catanese, M. F. Cawley, V. Connaughton, D. J. Fegan, J. Finley, J. Gaidos, A. M. Hillas, F. Krennrich, R. C. Lamb, R. Lessard, J. McEnery, G. Mohanty, N. A. Porter, J. Quinn, A. Rodgers, H. J. Rose, F. Samuelson, M. S. Schubnell, G. Sembroski, R. Srinivasan, T. C. Weekes, & J. Zweerink.* 586, 1232 (2003)

Alphanumeric: 3C 270

What Do the *Hubble Space Telescope* and *Chandra* Tell Us about the Jet and the Nuclear Region of the Radio Galaxy 3C 270? *Marco Chiaberge, Roberto Gilli, F. Duccio Macchetto, William B. Sparks, & Alessandro Capetti.* 582, 645 (2003)

The *XMM-Newton* View of the Nucleus of NGC 4261. *R. M. Sambruna, M. Gliozzi, M. Eracleous, W. N. Brandt, & R. Mushotzky.* 586, L37 (2003)

NGC 4261 and NGC 4697: Rejuvenated Elliptical Galaxies. *A. Zezas, L. Hernquist, G. Fabbiano, & J. Miller.* 599, L73 (2003)

Alphanumeric: 3C 280

Constraints on the Cluster Environments and Hot Spot Magnetic Field Strengths of the Radio Sources 3C 280 and 3C 254. *Megan Donahue, Ruth A. Daly, & Donald J. Horner.* 584, 643 (2003)

Alphanumeric: 3C 293

Fast Outflow of Neutral Hydrogen in the Radio Galaxy 3C 293. *R. Morganti, T. A. Oosterloo, B. H. C. Emonts, J. M. van der Hulst, & C. N. Tadhunter.* 593, L69 (2003)

Alphanumeric: 3C 390.3

Long-Term Continuous Monitoring of the Broad-Line Radio Galaxies 3C 390.3 and 3C 120 with the *Rossi X-Ray Timing Explorer*. *Mario Gliozzi, Rita M. Sambruna, & Michael Eracleous.* 584, 176 (2003)

Alphanumeric: 4C +12.50

4C +12.50: A Superluminal Precessing Jet in the Recent Merger System IRAS 13451+1232. *M. L. Lister, K. I. Kellermann, R. C. Vermeulen, M. H. Cohen, J. A. Zensus, & E. Ros.* 584, 135 (2003)

Alphanumeric: 4C 41.17

Extended X-Ray Emission around 4C 41.17 at $z = 3.8$. *Caleb Scharf, Ian Smail, Rob Ivison, Richard Bower, Wil van Breugel, & Michiel Reuland.* 596, 105 (2003)

Alphanumeric: CXOCDFS J033225.3−274219

A Puzzling X-Ray Source Found in the *Chandra* Deep Field–South. *J. Wang, T. Yaqoob, G. Szokoly, R. Gilli, L. Kewley, V. Mainieri, M. Nonino, P. Rosati, P. Tozzi, W. Zheng, A. Zirm, & C. Norman.* 590, L87 (2003)

Alphanumeric: DDO 210

Star Formation and the Interstellar Medium in Four Dwarf Irregular Galaxies. *L. M. Young, L. van Zee, K. Y. Lo, R. C. Dohm-Palmer, & Michelle E. Beierle.* 592, 111 (2003)

Alphanumeric: DDO 216

Star Formation and the Interstellar Medium in Four Dwarf Irregular Galaxies. *L. M. Young, L. van Zee, K. Y. Lo, R. C. Dohm-Palmer, & Michelle E. Beierle.* 592, 111 (2003)

Alphanumeric: ESO 381-G009

Analysis of the Interaction Effects in the Southern Galaxy Pair Tol 1238−364 and ESO 381-G009. *S. Temporin, S. Ciroi, P. Rafanelli, M. Radovich, J. Vennik, G. M. Richter, & K. Birkle.* 148, 353 (2003)

Alphanumeric: F08208+2816

Radio Constraints on the Starburst Ages of Two Wolf-Rayet Galaxies. *Q. F. Yin, J. H. Huang, & W. Zheng.* 597, 274 (2003)

Alphanumeric: GR 8

Star Formation and the Interstellar Medium in Four Dwarf Irregular Galaxies. *L. M. Young, L. van Zee, K. Y. Lo, R. C. Dohm-Palmer, & Michelle E. Beierle.* 592, 111 (2003)

Alphanumeric: HIPASS J1321−31

Anomalous Evolution of the Dwarf Galaxy HIPASS J1321−31. *Barton J. Pritzl, Patricia M. Knezek, John S. Gallagher III, Marco Grossi, Mike J. Disney, Robert F. Minchin, Kenneth C. Freeman, Eline Tolstoy, & Abi Saha.* 596, L47 (2003)

Alphanumeric: HR 10

Gas and Dust in the Extremely Red Object ERO J164502+4626.4. *Thomas R. Greve, Rob J. Ivison, & Padeli P. Papadopoulos.* 599, 839 (2003)

Alphanumeric: IC 342

Molecular Gas and the Nuclear Star Cluster in IC 342: Sufficient Inflow for Recurring Star Formation Events? *Eva Schinnerer, Torsten Böker, & David S. Meier.* 591, L115 (2003)

Alphanumeric: IC 694

Chandra Observations of the X-Ray–luminous Star-forming Galaxy Merger Arp 299. *A. Zezas, M. J. Ward, & S. S. Murray.* 594, L31 (2003)

Alphanumeric: IC 1459

The X-Ray–faint Emission of the Supermassive Nuclear Black Hole of IC 1459. *G. Fabbiano, M. Elvis, S. Markoff, A. Siemiginowska, S. Pellegrini, A. Zezas, F. Nicastro, G. Trinchieri, & J. McDowell.* 588, 175 (2003)

Alphanumeric: IC 1613

Deep *Hubble Space Telescope* Imaging of IC 1613. II. The Star Formation History. *Evan D. Skillman, Eline Tolstoy, Andrew A. Cole, Andrew E. Dolphin, Abhijit Saha, J. S. Gallagher, R. C. Dohm-Palmer, & Mario Mateo.* 596, 253 (2003)

Alphanumeric: IC 1953

Nascent Starbursts in Synchrotron-deficient Galaxies with Hot Dust. *H. Roussel, G. Helou, R. Beck, J. J. Condon, A. Bosma, K. Matthews, & T. H. Jarrett.* 593, 733 (2003)

Alphanumeric: IC 4296

The Nuclear Accretion in the FR I Radio Galaxy IC 4296 from *Chandra* and Very Long Baseline Array Observations. *S. Pellegrini, T. Venturi, A. Comastri, G. Fabbiano, F. Fiore, C. Vignali, R. Morganti, & G. Trinchieri.* 585, 677 (2003)

Alphanumeric: IRAS 00188−0856

3.1 Micron H_2O Ice Absorption in LINER-Type Ultraluminous Infrared Galaxies with Cool Far-Infrared Colors: The Centrally Concentrated Nature of Their Deeply Buried Energy Sources. *Masatoshi Imanishi & Philip R. Maloney.* 588, 165 (2003)

Alphanumeric: IRAS 00317−2142

X-Ray Luminous Galaxies. I. *Chandra* Observations of IRAS 00317−2142. *I. Georgantopoulos, A. Zezas, & M. J. Ward.* 584, 129 (2003)

Alphanumeric: IRAS 03250+1606

3.1 Micron H_2O Ice Absorption in LINER-Type Ultraluminous Infrared Galaxies with Cool Far-Infrared Colors: The Centrally Concentrated Nature of Their Deeply Buried Energy Sources. *Masatoshi Imanishi & Philip R. Maloney.* 588, 165 (2003)

Alphanumeric: IRAS 12112+0305

Eccentric-Disk Models for the Nucleus of M31. *Hiranya V. Peiris & Scott Tremaine.* 599, 237 (2003)

Alphanumeric: IRAS 13451+1232

4C +12.50: A Superluminal Precessing Jet in the Recent Merger System IRAS 13451+1232. *M. L. Lister, K. I. Kellermann, R. C. Vermeulen, M. H. Cohen, J. A. Zensus, & E. Ros.* 584, 135 (2003)

Alphanumeric: IRAS 17208−0014

Very Long Baseline Array Continuum and H I Absorption Observations of the Ultraluminous Infrared Galaxy IRAS 17208−0014. *Emmanuel Momjian, Jonathan D. Romney, Christopher L. Carilli, Thomas H. Troland, & Gregory B. Taylor.* 587, 160 (2003)

INTEGRAL Spectroscopy of IRAS 17208−0014: Implications for the Evolutionary Scenarios of Ultraluminous Infrared Galaxies. *Santiago Arribas & Luis Colina.* 591, 791 (2003)

Alphanumeric: IRAS 19254−7245

Revealing the Active Galactic Nucleus in the Superantennae through *L*-Band Spectroscopy. *G. Risaliti, R. Maiolino, A. Marconi, L. Bassani, S. Berta, V. Braito, R. Della Ceca, A. Franceschini, & M. Salvati.* 595, L17 (2003)

Alphanumeric: IRAS 21329−2346

3.1 Micron H_2O Ice Absorption in LINER-Type Ultraluminous Infrared Galaxies with Cool Far-Infrared Colors: The Centrally Concentrated Nature of Their Deeply Buried Energy Sources. *Masatoshi Imanishi & Philip R. Maloney.* 588, 165 (2003)

Alphanumeric: IRAS 23234+0946

3.1 Micron H_2O Ice Absorption in LINER-Type Ultraluminous Infrared Galaxies with Cool Far-Infrared Colors: The Centrally Concentrated Nature of Their Deeply Buried Energy Sources. *Masatoshi Imanishi & Philip R. Maloney.* 588, 165 (2003)

Alphanumeric: IRAS 23327+2913

3.1 Micron H_2O Ice Absorption in LINER-Type Ultraluminous Infrared Galaxies with Cool Far-Infrared Colors: The Centrally Concentrated Nature of Their Deeply Buried Energy Sources. *Masatoshi Imanishi & Philip R. Maloney.* 588, 165 (2003)

Alphanumeric: LAE J1044−0130

The Discovery of a Very Narrow Line Star-forming Object at a Redshift of 5.66. *Yoshiaki Taniguchi, Masaru Ajiki, Takashi Murayama, Tohru Nagao, Sylvain Veilleux, David B. Sanders, Yutaka Komiyama, Yasuhiro*

Shioya, Shinobu S. Fujita, Yuko Kakazu, Sadanori Okamura, Hiroyasu Ando, Tetsuo Nishimura, Masahiko Hayashi, Ryusuke Ogasawara, & Shin-ichi Ichikawa. 585, L97 (2003)

Alphanumeric: MCG −5-23-16

XMM-Newton Observation of Broad Iron Kα Emission from Seyfert 1.9 Galaxy MCG −5-23-16. *G. C. Dewangan, R. E. Griffiths, & N. J. Schurch.* 592, 52 (2003)

Alphanumeric: PKS 1246−410

Lowering Infrared Cluster Magnetic Field Strengths: The Radio Galaxy Contributions. *Lawrence Rudnick & Katherine M. Blundell.* 588, 143 (2003)

Alphanumeric: PKS 1345+12

4C +12.50: A Superluminal Precessing Jet in the Recent Merger System IRAS 13451+1232. *M. L. Lister, K. I. Kellermann, R. C. Vermeulen, M. H. Cohen, J. A. Zensus, & E. Ros.* 584, 135 (2003)

Alphanumeric: PKS B1545−321

Renewed Activity in the Radio Galaxy PKS B1545−321: Twin Edge-brightened Beams within Diffuse Radio Lobes. *Lakshmi Saripalli, Ravi Subrahmanyan, & N. Udaya Shankar.* 590, 181 (2003)

Alphanumeric: RX J1242.6−1119

Follow-Up *Hubble Space Telescope*/Space Telescope Imaging Spectroscopy of Three Candidate Tidal Disruption Events. *S. Gezari, J. P. Halpern, S. Komossa, D. Grupe, & K. M. Leighly.* 592, 42 (2003)

Alphanumeric: RX J1624.9+7554

Follow-Up *Hubble Space Telescope*/Space Telescope Imaging Spectroscopy of Three Candidate Tidal Disruption Events. *S. Gezari, J. P. Halpern, S. Komossa, D. Grupe, & K. M. Leighly.* 592, 42 (2003)

Alphanumeric: SBS 0335−052

The Effect of Collisional Enhancement of Balmer Lines on the Determination of the Primordial Helium Abundance. *V. Luridiana, A. Peimbert, M. Peimbert, & M. Cervino.* 592, 846 (2003)

Alphanumeric: SMM J06509+4130

Chandra Detections of SCUBA Galaxies around High-z Radio Sources. *Ian Smail, C. A. Scharf, R. J. Ivison, J. A. Stevens, R. G. Bower, & J. S. Dunlop.* 599, 86 (2003)

Alphanumeric: SMM J06509+4131

Chandra Detections of SCUBA Galaxies around High-z Radio Sources. *Ian Smail, C. A. Scharf, R. J. Ivison, J. A. Stevens, R. G. Bower, & J. S. Dunlop.* 599, 86 (2003)

Alphanumeric: SMM J11409−2629

Chandra Detections of SCUBA Galaxies around High-z Radio Sources. *Ian Smail, C. A. Scharf, R. J. Ivison, J. A. Stevens, R. G. Bower, & J. S. Dunlop.* 599, 86 (2003)

Alphanumeric: SMM J14011+0252

Molecular Gas and Dust at $z = 2.6$ in SMM J14011+0252: A Strongly Lensed Ultraluminous Galaxy, Not a Huge Massive Disk. *D. Downes & P. M. Solomon.* 582, 37 (2003)

Alphanumeric: SMM J17142+5016

A SCUBA Galaxy in the Protocluster around 53W002 at $z = 2.4$. *Ian Smail, R. J. Ivison, D. G. Gilbank, J. S. Dunlop, W. C. Keel, K. Motohara, & J. A. Stevens.* 583, 551 (2003)

Chandra Detections of SCUBA Galaxies around High-z Radio Sources. *Ian Smail, C. A. Scharf, R. J. Ivison, J. A. Stevens, R. G. Bower, & J. S. Dunlop.* 599, 86 (2003)

Alphanumeric: UGC 01922

The First CO Map of a Low Surface Brightness Galaxy. *K. O'Neil & E. Schinnerer.* 588, L81 (2003)

Alphanumeric: UGC 5101

3.1 Micron H_2O Ice Absorption in LINER-Type Ultraluminous Infrared Galaxies with Cool Far-Infrared Colors: The Centrally Concentrated Nature of Their Deeply Buried Energy Sources. *Masatoshi Imanishi & Philip R. Maloney.* 588, 165 (2003)

X-Ray Evidence of a Buried Active Galactic Nucleus in UGC 5101. *Masatoshi Imanishi, Yuichi Terashima, Naohisa Anabuki, & Takao Nakagawa.* 596, L167 (2003)

Alphanumeric: UGC 7321

High-Latitude H I in the Low Surface Brightness Galaxy UGC 7321. *L. D. Matthews & Kenneth Wood.* 593, 721 (2003)

Alphanumeric: UGC 10214

Advanced Camera for Surveys Observations of Young Star Clusters in the Interacting Galaxy UGC 10214. *H. D. Tran, M. Sirianni, H. C. Ford, G. D. Illingworth, M. Clampin, G. Hartig, R. H. Becker, R. L. White, F. Bartko, N. Benítez, J. P. Blakeslee, R. Bouwens, T. J. Broadhurst, R. Brown, C. Burrows, E. Cheng, N. Cross, P. D. Feldman, M. Franx, D. A. Golimowski, C. Gronwall, L. Infante, R. A. Kimble, J. Krist, M. Lesser, D. Magee, A. R. Martel, Wm. J. McCann, G. R. Meurer, G. Miley, M. Postman, P. Rosati, W. B. Sparks, & Z. Tsvetanov.* 585, 750 (2003)

Alphanumeric: UGCA 292

Star Formation and the Interstellar Medium in Four Dwarf Irregular Galaxies. *L. M. Young, L. van Zee, K. Y. Lo, R. C. Dohm-Palmer, & Michelle E. Beierle.* 592, 111 (2003)

Alphanumeric: VV 29

Advanced Camera for Surveys Observations of Young Star Clusters in the Interacting Galaxy UGC 10214. *H. D. Tran, M. Sirianni, H. C. Ford, G. D. Illingworth, M. Clampin, G. Hartig, R. H. Becker, R. L. White, F. Bartko, N. Benítez, J. P. Blakeslee, R. Bouwens, T. J. Broadhurst, R. Brown, C. Burrows, E. Cheng, N. Cross, P. D. Feldman, M. Franx, D. A. Golimowski, C. Gronwall, L. Infante, R. A. Kimble, J. Krist, M. Lesser, D. Magee, A. R. Martel, Wm. J. McCann, G. R. Meurer, G. Miley, M. Postman, P. Rosati, W. B. Sparks, & Z. Tsvetanov.* 585, 750 (2003)

Alphanumeric: VV 784

Nonnuclear Hyper/Ultralumious X-Ray Sources in the Starbursting Carthwheel Ring Galaxy. *Yu Gao, Q. Daniel Wang, P. N. Appleton, & Ray A. Lucas.* 596, L171 (2003)

Alphanumeric: I Zw 18

New Light on the Stellar Populations in I Zw 18: Deep Near-Infrared Imaging. *Leslie K. Hunt, Trinh X. Thuan, & Yuri I. Izotov.* 588, 281 (2003)

The Effect of Collisional Enhancement of Balmer Lines on the Determination of the Primordial Helium Abundance. *V. Luridiana, A. Peimbert, M. Peimbert, & M. Cervino.* 592, 846 (2003)

Abundances in the Neutral Interstellar Medium of I Zw 18 from *Far Ultrviolet Spectroscopic Explorer* Observations. *A. Aloisi, S. Savaglio, T. M. Heckman, C. G. Hoopes, C. Leitherer, & K. R. Sembach.* 595, 760 (2003)

Alphanumeric: III Zw 2

The Line Emission Region in III Zw 2: Kinematics and Variability. *L. Č. Popović, E. G. Mediavilla, E. Bon, N. Stanić, & A. Kubičela.* 599, 185 (2003)

GALAXIES: INTERACTIONS

Tidal Effects in Clusters of Galaxies. *Oleg Y. Gnedin.* 582, 141 (2003)

Kinematics of Planetary Nebulae in M51's Tidal Debris. *Patrick R. Durrell, J. Christopher Mihos, John J. Feldmeier, George H. Jacoby, & Robin Ciardullo.* 582, 170 (2003)

Tidally Triggered Star Formation in Close Pairs of Galaxies. II. Constraints on Burst Strengths and Ages. *Elizabeth Barton Gillespie, Margret J. Geller, & Scott J. Kenyon.* 582, 668 (2003)

Gravitational Waves Probe the Coalescence Rate of Massive Black Hole Binaries. *A. H. Jaffe & D. C. Backer.* 583, 616 (2003)

Evidence for Coupling between the Sagittarius Dwarf Galaxy and the Milky Way Warp. *Jeremy Bailin.* 583, L79 (2003)

The State of Galaxy Formation in the Local Universe. *D. J. Pisano & Eric M. Wilcots.* 584, 228 (2003)

CG J1720−67.8: A Detailed Analysis of Optical and Infrared Properties of a New Ultracompact Group of Galaxies. *S. Temporin, R. Weinberger, G. Galaz, & F. Kerber.* 584, 239 (2003)

The Time-variable Ultraluminous X-Ray Sources of "The Antennae." *G. Fabbiano, A. Zezas, A. R. King, T. J. Ponman, A. Rots, & Francois Schweizer.* 584, L5 (2003)

A Minor-Merger Interpretation for NGC 1097's "Jets." *James L. Higdon & John F. Wallin.* 585, 281 (2003)

Extraordinary Diffuse Light in Hickson Compact Group 90. *P. M. White, G. Bothun, Martín A. Guerrero, Michael J. West, & Wayne A. Barkhouse.* 585, 739 (2003)

Azimuthal and Kinematic Segregation of Neutral and Molecular Gas in Arp 118: The Yin-Yang Galaxy NGC 1144. *P. N. Appleton, V. Charmandaris, Yu Gao, Tom Jarrett, & M. A. Bransford.* 586, 112 (2003)

The Magellanic Stream, High-Velocity Clouds, and the Sculptor Group. *Mary E. Putman, Lister Staveley-Smith, Kenneth C. Freeman, Brad K. Gibson, & David G. Barnes.* 586, 170 (2003)

Intracluster Planetary Nebulae in the Virgo Cluster. II. Imaging Catalog. *John J. Feldmeier, Robin Ciardullo, George H. Jacoby, & Patrick R. Durrell.* 145, 65 (2003)

Morphological and Kinematic Properties of Disk Galaxies Perturbed by a Satellite. *R. Chan & S. Junqueira.* 586, 780 (2003)

Environmental Effects on Evolution of Cluster Galaxies in a Λ-dominated Cold Dark Matter Universe. *Takashi Okamoto & Masahiro Nagashima.* 587, 500 (2003)

Candidate Tidal Dwarf Galaxies in the Compact Group CG J1720−67.8. *S. Temporin, R. Weinberger, G. Galaz, & F. Kerber.* 587, 660 (2003)

Quasar Evolution Driven by Galaxy Encounters in Hierarchical Structures. *N. Menci, A. Cavaliere, A. Fontana, E. Giallongo, F. Poli, & V. Vittorini.* 587, L63 (2003)

A Model for *SIRTF* Galaxy Counts. *Jeremy Mould.* 587, L93 (2003)

A Multitransition CO Study of the Antennae Galaxies NGC 4038/9. *Ming Zhu, E. R. Seaquist, & Nario Kuno.* 588, 243 (2003)

Models of the Morphology, Kinematics, and Star Formation History of the Prototypical Collisional Starburst System NGC 7714/7715=Arp 284. *Curtis Struck & Beverly J. Smith.* 589, 157 (2003)

Dynamical Evolution of Galaxies in Clusters. *Oleg Y. Gnedin.* 589, 752 (2003)

Substructure in the Andromeda Galaxy Globular Cluster System. *K. M. Perrett, D. A. Stiff, D. A. Hanes, & T. J. Bridges.* 589, 790 (2003)

Detection of Nonrandom Galaxy Orientations in X-Ray Subclusters of the Coma Cluster. *Manfred Kitzbichler & W. Saurer.* 590, L9 (2003)

Simulations of Galaxy Formation in a ΛCDM Universe. III. The Dissipative Formation of an Elliptical Galaxy. *Andrés Meza, Julio F. Navarro, Matthias Steinmetz, & Vincent R. Eke.* 590, 619 (2003)

A *Hubble Space Telescope*/WFPC2 Snapshot Survey of 2MASS-selected Red QSOs. *Andrew R. Marble, Dean C. Hines, Gary D. Schmidt, Paul S. Smith, Jason A. Surace, Lee Armus, Roc M. Cutri, & Brant O. Nelson.* 590, 707 (2003)

Chandra Observations of Extended X-Ray Emission in Arp 220. *J. C. McDowell, D. L. Clements, S. A. Lamb, S. Shaked, N. C. Hearn, L. Colina, C. Mundell, K. Borne, A. C. Baker, & S. Arribas.* 591, 154 (2003)

INTEGRAL Spectroscopy of IRAS 17208−0014: Implications for the Evolutionary Scenarios of Ultraluminous Infrared Galaxies. *Santiago Arribas & Luis Colina.* 591, 791 (2003)

A Variable Ultraluminous Supersoft X-Ray Source in "The Antennae": Stellar-Mass Black Hole or White Dwarf? *G. Fabbiano, A. R. King, A. Zezas, T. J. Ponman, A. Rots, & François Schweizer.* 591, 843 (2003)

Chandra Observations of the X-Ray–luminous Star-forming Galaxy Merger Arp 299. *A. Zezas, M. J. Ward, & S. S. Murray.* 594, L31 (2003)

Tracing the Galactic Anticenter Stellar Stream with 2MASS M Giants. *Helio J. Rocha-Pinto, Steven R. Majewski, M. F. Skrutskie, & Jeffrey D. Crane.* 594, L115 (2003)

Exploring Halo Substructure with Giant Stars: Spectroscopy of Stars in the Galactic Anticenter Stellar Structure. *Jeffrey D. Crane, Steven R. Majewski, Helio J. Rocha-Pinto, Peter M. Frinchaboy, Michael F. Skrutskie, & David R. Law.* 594, L119 (2003)

Physical Conditions and Star Formation Activity in the Intragroup Medium of Stephan's Quintet. *C. K. Xu, N. Lu, J. J. Condon, M. Dopita, & R. J. Tuffs.* 595, 665 (2003)

Evidence for a Major Merger Origin of High Redshift Sub-millimeter Galaxies. *Christopher J. Conselice, Scott C. Chapman, & Rogier A. Windhorst.* 596, L5 (2003)

Starbursts from the Strong Compression of Galactic Molecular Clouds due to the High Pressure of the Intracluster Medium. *Kenji Bekki & Warrick J. Couch.* 596, L13 (2003)

Nonnuclear Hyper/Ultralumious X-Ray Sources in the Starbursting Carthwheel Ring Galaxy. *Yu Gao, Q. Daniel Wang, P. N. Appleton, & Ray A. Lucas.* 596, L171 (2003)

Analysis of the Interaction Effects in the Southern Galaxy Pair Tol 1238−364 and ESO 381-G009. *S. Temporin, S. Ciroi, P. Rafanelli, M. Rodovich, J. Vennik, G. M. Richter, & K. Birkle.* 148, 353 (2003)

Adaptive Optics Imaging and Spectroscopy of Cygnus A. I. Evidence for a Minor Merger. *Gabriela Canalizo, Claire Max, David Whysong, Robert Antonucci, & Scott E. Dahm.* 597, 823 (2003)

Statistical Properties of Collisionless Equal- and Unequal-Mass Merger Remnants of Disk Galaxies. *Thorsten Naab & Andreas Burkert.* 597, 893 (2003)

The Importance of Spheroidal and Mixed Mergers for Early-Type Galaxy Formation. *S. Khochfar & A. Burkert.* 597, L117 (2003)

The Multicolored Hot Interstellar Medium of the "Antennae" Galaxies (NGC 4038/4039). *G. Fabbiano, M. Krauss, A. Zezas, A. Rots, & S. Neff.* 598, 272 (2003)

Radio Emission Associated with Ultraluminous X-Ray Sources in the Galaxy Merger NGC 3256. *S. G. Neff, James S. Ulvestad, & S. D. Campion.* 599, 1043 (2003)

NGC 4261 and NGC 4697: Rejuvenated Elliptical Galaxies. *A. Zezas, L. Hernquist, G. Fabbiano, & J. Miller.* 599, L73 (2003)

GALAXIES: INTERGALACTIC MEDIUM

The Chemical Uniformity of High-z Damped Lyα Protogalaxies. *Jason X. Prochaska.* 582, 49 (2003)

Tracing the Warm-Hot Intergalactic Medium at Low Redshift: X-Ray Forest Observations toward H1821+643. *Smita Mathur, David H. Weinberg, & Xuelei Chen.* 582, 82 (2003)

Chandra Spectra of the Soft X-Ray Diffuse Background. *M. Markevitch, M. W. Bautz, B. Biller, Y. Butt, R. Edgar, T. Gaetz, G. Garmire, C. E. Grant, P. Green, M. Juda, P. P. Plucinsky, D. Schwartz, R. Smith, A. Vikhlinin, S. Virani, B. J. Wargelin, & S. Wolk.* 583, 70 (2003)

Chandra Analysis of A496: No Chemical Gradients across Cold Fronts. *Renato Dupke & Raymond E. White III.* 583, L13 (2003)

A *BeppoSAX* Observation of the IC 1262 Galaxy Cluster. *Daniel S. Hudson, Mark J. Henriksen, & Sergio Colafrancesco.* 583, 706 (2003)

Can Radiative Cooling and Nongravitational Heating Explain Simultaneously the Global X-Ray Properties of Clusters and the Unresolved Cosmic X-Ray Background? *Yan-Jie Xue & Xiang-Ping Wu.* 584, 34 (2003)

Galaxies and Intergalactic Matter at Redshift $z \sim 3$: Overview. *Kurt L. Adelberger, Charles C. Steidel, Alice E. Shapley, & Max Pettini.* 584, 45 (2003)

Nonthermal Emissions from Particles Accelerated by Turbulence in Clusters of Galaxies. *Yutaka Fujita, Motokazu Takizawa, & Craig L. Sarazin.* 584, 190 (2003)

Probing Intracluster Magnetic Fields with Cosmic Microwave Background Polarization. *Hiroshi Ohno, Masahiro Takada, Klaus Dolag, Matthias Bartelmann, & Naoshi Sugiyama.* 584, 599 (2003)

Evolving Spectra of Population III Stars: Consequences for Cosmological Reionization. *Aparna Venkatesan, Jason Tumlinson, & J. Michael Shull.* 584, 621 (2003)

Heavy-Element Abundances and Dust Depletions in the Host Galaxies of Three Gamma-Ray Bursts. *Sandra Savaglio, S. Michael Fall, & Fabrizio Fiore.* 585, 638 (2003)

The Magellanic Stream, High-Velocity Clouds, and the Sculptor Group. *Mary E. Putman, Lister Staveley-Smith, Kenneth C. Freeman, Brad K. Gibson, & David G. Barnes.* 586, 170 (2003)

Reionization of Hydrogen and Helium by Early Stars and Quasars. *J. Stuart B. Wyithe & Abraham Loeb.* 586, 693 (2003)

Cold Fronts in Cold Dark Matter Clusters. *Daisuke Nagai & Andrey V. Kravtsov.* 587, 514 (2003)

Effect of Internal Flows on Sunyaev-Zeldovich Measurements of Cluster Peculiar Velocities. *Daisuke Nagai, Andrey V. Kravtsov, & Arthur Kosowsky.* 587, 524 (2003)

Chandra X-Ray Analysis of the Massive High-Redshift Galaxy Clusters Cl J1113.1−2615 and Cl J0152.7−1357. *B. J. Maughan, L. R. Jones, H. Ebeling, E. Perlman, P. Rosati, C. Frye, & C. R. Mullis.* 587, 589 (2003)

Metal Absorption Lines as Probes of the Intergalactic Medium Prior to the Reionization Epoch. *Steven R. Furlanetto & Abraham Loeb.* 588, 18 (2003)

Chandra Survey of Radio-quiet, High-Redshift Quasars. *Jill Bechtold, Aneta Siemiginowska, Joseph Shields, Bozena Czerny, Agnieszka Janiuk, Fred Hamann, Thomas L. Aldcroft, Martin Elvis, & Adam Dobrzycki.* 588, 119 (2003)

Was the Universe Reionized by Massive Metal-free Stars? *J. Stuart B. Wyithe & Abraham Loeb.* 588, L69 (2003)

Chandra Discovery of the Intracluster Medium around UM 425 at a Redshift of 1.47. *Smita Mathur & Rik J. Williams.* 589, L1 (2003)

Highly Ionized High-Velocity Gas in the Vicinity of the Galaxy. *K. R. Sembach, B. P. Wakker, B. D. Savage, P. Richter, M. Meade, J. M. Shull, E. B. Jenkins, G. Sonneborn, & H. W. Moos.* 146, 165 (2003)

The Universe Was Reionized Twice. *Renyue Cen.* 591, 12 (2003)

Modeling the Void H I Column Density Spectrum with Subgalactic Halos. *Curtis V. Manning.* 591, 79 (2003)

Probing the Size of Low-Redshift Lyα Absorbers. *Jessica L. Rosenberg, Rajib Ganguly, Mark L. Giroux, & John T. Stocke.* 591, 677 (2003)

SMAUG: A New Technique for the Deprojection of Galaxy Clusters. *Fabio Pizzolato, Silvano Molendi, Simona Ghizzardi, & Sabrina De Grandi.* 592, 62 (2003)

The Multiphase Intracluster Medium in Galaxy Groups Probed by the Lyα Forest. *Hu Zhan, Li-Zhi Fang, & David Burstein.* 592, L1 (2003)

On the Origin of Intracluster Entropy. *G. Mark Voit, Michael L. Balogh, Richard G. Bower, Cedric G. Lacey, & Greg L. Bryan.* 593, 272 (2003)

Chandra Observation of the Merging Cluster A2034. *Joshua C. Kempner, Craig L. Sarazin, & Maxim Markevitch.* 593, 291 (2003)

Star Formation at the Twilight of the Dark Ages: Which Stars Reionized the Universe? *Rachel S. Somerville & Mario Livio.* 593, 611 (2003)

The Epoch of Reionization in Models with Reduced Small-Scale Power. *Rachel S. Somerville, James S. Bullock, & Mario Livio.* 593, 616 (2003)

X-Ray Absorption by the Low-Redshift Intergalactic Medium: A Numerical Study of the Λ Cold Dark Matter Model. *Xuelei Chen, David H. Weinberg, Neal Katz, & Romeel Davé.* 594, 42 (2003)

The Ionizing Efficiency of the First Stars. *Aparna Venkatesan & James W. Truran.* 594, L1 (2003)

The C IV Mass Density of the Universe at Redshift 5. *Max Pettini, Piero Madau, Michael Bolte, Jason X. Prochaska, Sara L. Ellison, & Xiaohui Fan.* 594, 695 (2003)

Signatures of Galaxy Formation in the Intracluster Medium. *G. Mark Voit & Trevor J. Ponman.* 594, L75 (2003)

The Multiphase Intergalactic Medium toward PKS 2155−304. *J. Michael Shull, Jason Tumlinson, & Mark L. Giroux.* 594, L107 (2003)

Diffuse Nonthermal X-Ray Emission: Evidence of Cosmic-Ray Acceleration at the Shock Front in IC 1262. *Daniel S. Hudson & Mark J. Henriksen.* 595, L1 (2003)

Physical Conditions and Star Formation Activity in the Intragroup Medium of Stephan's Quintet. *C. K. Xu, N. Lu, J. J. Condon, M. Dopita, & R. J. Tuffs.* 595, 665 (2003)

Chandra Observation of the Core of the Galaxy Cluster AWM 7. *T. Furusho, N. Y. Yamasaki, & T. Ohashi.* 596, 181 (2003)

Hierarchical Structure Formation and Chemical Evolution of Damped Lyα Systems. *Yong-Zhong Qian & G. J. Wasserburg.* 596, L9 (2003)

The First Supernova Explosions in the Universe. *Volker Bromm, Naoki Yoshida, & Lars Hernquist.* 596, L135 (2003)

On the Evolution of the Ionizing Emissivity of Galaxies and Quasars Required by the Hydrogen Reionization. *Jordi Miralda-Escudé.* 597, 66 (2003)

Chandra Observations of Point Sources in A2255. *David S. Davis, Neal A. Miller, & Richard F. Mushotzky.* 597, 202 (2003)

Kinetic Sunyaev-Zel'dovich Effect and Cosmic Microwave Background Polarization from Subsonic Bulk Motions of Dense Gas Clouds in Galaxy Cluster Cores. *J. M. Diego, P. Mazzotta, & J. Silk.* 597, L1 (2003)

Galaxies inside Strömgren Spheres of Luminous Quasars at $z > 6$: Detection of the First Galaxies. *Renyue Cen.* 597, L13 (2003)

Hα Emission from High-Velocity Clouds and Their Distances. *M. E. Putman, J. Bland-Hawthorn, S. Veilleux, B. K. Gibson, K. C. Freeman, & P. R. Maloney.* 597, 948 (2003)

The Clustering of Intergalactic Metals. *Christophe Pichon, Evan Scannapieco, Bastien Aracil, Patrick Petitjean, Dominique Aubert, Jacqueline Bergeron, & Stéphane Colombi.* 597, L97 (2003)

The Cosmic Dispersion Measure from Gamma-Ray Burst Afterglows: Probing the Reionization History and the Burst Environment. *Kunihito Ioka.* 598, L79 (2003)

Mapping the Cosmic Web with Lyα Emission. *Steven R. Furlanetto, Joop Schaye, Volker Springel, & Lars Hernquist.* 599, L1 (2003)

Combining *Wilkinson Microwave Anisotropy Probe* and Sloan Digital Sky Survey Quasar Data on Reionization Constrains Cosmological Parameters and Star Formation Efficiency. *Weihsueh A. Chiu, Xiaohui Fan, & Jeremiah P. Ostriker.* 599, 759 (2003)

GALAXIES: IRREGULAR

RR Lyrae and Short-Period Variable Stars in the Dwarf Irregular Galaxy NGC 6822. *Gisella Clementini, Enrico V. Held, Lara Baldacci, & Luca Rizzi.* 588, L85 (2003)

Discovery of Latent Star Formation in the Extended H I Gas around the Local Group Dwarf Irregular Galaxy NGC 6822. *Yutaka Komiyama, Sadanori Okamura, Masafumi Yagi, Hisanori Furusawa, Mamoru Doi, Masaru Hamabe, Katsumi Imi, Masahiko Kimura, Satoshi Miyazaki, Fumiaki Nakata, Norio Okada, Masami Ouchi, Maki Sekiguchi, Kazuhiro Shimasaku, Naoki Yasuda, Nobuo Arimoto, & Chisato Ikuta.* 590, L17 (2003)

Chandra Observations of Expanding Shells in the Dwarf Starburst Galaxy NGC 3077. *Jürgen Ott, Crystal L. Martin, & Fabian Walter.* 594, 776 (2003)

Deep *Hubble Space Telescope* Imaging of IC 1613. II. The Star Formation History. *Evan D. Skillman, Eline Tolstoy, Andrew A. Cole, Andrew E. Dolphin, Abhijit Saha, J. S. Gallagher, R. C. Dohm-Palmer, & Mario Mateo.* 596, 253 (2003)

GALAXIES: ISM

Molecular Gas and Dust at $z = 2.6$ in SMM J14011+0252: A Strongly Lensed Ultraluminous Galaxy, Not a Huge Massive Disk. *D. Downes & P. M. Solomon.* 582, 37 (2003)

Central Mass Concentration and Bar Dissolution in Nearby Spiral Galaxies. *Mousumi Das, Peter J. Teuben, Stuart N. Vogel, Michael W. Regan, Kartik Sheth, Andrew I. Harris, & William H. Jefferys.* 582, 190 (2003)

The Spectroscopic Variability of GRB 021004. *T. Matheson, P. M. Garnavich, C. Foltz, S. West, G. Williams, E. Falco, M. L. Calkins, F. J. Castander, E. Gawiser, S. Jha, D. Bersier, & K. Z. Stanek.* 582, L5 (2003)

CO Luminosity Functions for Far-Infrared– and *B*-Band–selected Galaxies and the First Estimate for $\Omega_{\rm H\,I+H_2}$. *Dusan Keres, Min S. Yun, & J. S. Young.* 582, 659 (2003)

The Cool Interstellar Medium in S0 Galaxies. I. A Survey of Molecular Gas. *Gary A. Welch & Leslie J. Sage.* 584, 260 (2003)

Spatially Resolved Millimeter Interferometry of SMM J02399−0136: A Very Massive Galaxy at $z = 2.8$. *Reinhard Genzel, Andrew J. Baker, Linda J. Tacconi, Dieter Lutz, Pierre Cox, Stéphane Guilloteau, & Alain Omont.* 584, 633 (2003)

The Chemical Composition of the 30 Doradus Nebula Derived from Very Large Telescope Echelle Spectrophotometry. *Antonio Peimbert.* 584, 735 (2003)

The Contribution of H I–rich Galaxies to the Damped Lyα Absorber Population at $z = 0$. *Jessica L. Rosenberg & Stephen E. Schneider.* 585, 256 (2003)

A Minor-Merger Interpretation for NGC 1097's "Jets." *James L. Higdon & John F. Wallin.* 585, 281 (2003)

Predictions for the Counts of Faint, High-Redshift Galaxies in the Mid-Infrared. *Zoltán Haiman, David N. Spergel, & Edwin L. Turner.* 585, 630 (2003)

Time-dependent Photoionization in a Dusty Medium. II. Evolution of Dust Distributions and Optical Opacities. *Rosalba Perna, Davide Lazzati, & Fabrizio Fiore.* 585, 775 (2003)

The Host Galaxies of Optically Bright Quasi-stellar Objects: Molecular Gas in $z \leq 0.1$ Palomar-Green Quasi-stellar Objects. *N. Z. Scoville, D. T. Frayer, E. Schinnerer, & M. Christopher.* 585, L105 (2003)

A First Estimate of the Baryonic Mass Function of Galaxies. *Eric F. Bell, Daniel H. McIntosh, Neal Katz, & Martin D. Weinberg.* 585, L117 (2003)

Dust in Hot Gas: Far-Infrared Emission from Three Local Elliptical Galaxies. *Pasquale Temi, William G. Mathews, Fabrizio Brighenti, & Jesse D. Bregman.* 585, L121 (2003)

Azimuthal and Kinematic Segregation of Neutral and Molecular Gas in Arp 118: The Yin-Yang Galaxy NGC 1144. *P. N. Appleton, V. Charmandaris, Yu Gao, Tom Jarrett, & M. A. Bransford.* 586, 112 (2003)

Chandra X-Ray Observations of NGC 1316 (Fornax A). *Dong-Woo Kim & G. Fabbiano.* 586, 826 (2003)

CO $J = 7 \rightarrow 6$ Observations of NGC 253: Cosmic-Ray–heated Warm Molecular Gas. *C. M. Bradford, T. Nikola, G. J. Stacey, A. D. Bolatto, J. M. Jackson, M. L. Savage, J. A. Davidson, & S. J. Higdon.* 586, 891 (2003)

Optical Spectroscopy and Ionization Models of the Diffuse Ionized Gas in M33, M51/NGC 5195, and M81. *Charles G. Hoopes & René A. M. Walterbos.* 586, 902 (2003)

A ^{12}CO Map of M82: The Significance of Warm Molecular Gas. *John S. Ward, Jonas Zmuidzinas, Andrew I. Harris, & Kate G. Isaak.* 587, 171 (2003)

The Dust in Lyman Break Galaxies. *Uma P. Vijh, Adolph N. Witt, & Karl D. Gordon.* 587, 533 (2003)

Molecular Gas in Candidate Double-barred Galaxies. II. Cooler, Less Dense Gas Associated with Stronger Central Concentrations. *Glen R. Petitpas & Christine D. Wilson.* 587, 649 (2003)

Spectroscopy of Dwarf Galaxies in the Virgo Cluster. I. Data, Chemical Abundances, and Ionization Structure. *José M. Vílchez & Jorge Iglesias-Páramo.* 145, 225 (2003)

The BIMA Survey of Nearby Galaxies (BIMA SONG). II. The CO Data. *Tamara T. Helfer, Michele D. Thornley, Michael W. Regan, Tony Wong, Kartik Sheth, Stuart N. Vogel, Leo Blitz, & Douglas C.-J. Bock.* 145, 259 (2003)

Infrared Emission of Normal Galaxies from 2.5 to 12 Microns: *Infrared Space Observatory* Spectra, Near-Infrared Continuum, and Mid-Infrared Emission Features. *Nanyao Lu, George Helou, Michael W. Werner, Harriet L. Dinerstein, Daniel A. Dale, Nancy A. Silbermann, Sangeeta Malhotra, Charles A. Beichman, & Thomas H. Jarrett.* 588, 199 (2003)

Further Discoveries of ^{12}CO in Low Surface Brightness Galaxies. *K. O'Neil, E. Schinnerer, & P. Hofner.* 588, 230 (2003)

A Multitransition CO Study of the Antennae Galaxies NGC 4038/9. *Ming Zhu, E. R. Seaquist, & Nario Kuno.* 588, 243 (2003)

Diffuse X-Ray Emission from M101. *K. D. Kuntz, S. L. Snowden, W. D. Pence, & K. Mukai.* 588, 264 (2003)

New Light on the Stellar Populations in I Zw 18: Deep Near-Infrared Imaging. *Leslie K. Hunt, Trinh X. Thuan, & Yuri I. Izotov.* 588, 281 (2003)

A Search for Ionized Gas in the Draco and Ursa Minor Dwarf Spheroidal Galaxies. *J. S. Gallagher, G. J. Madsen, R. J. Reynolds, E. K. Grebel, & T. A. Smecker-Hane.* 588, 326 (2003)

CO Molecular Gas in Infrared-luminous Galaxies. *Lihong Yao, E. R. Seaquist, Nario Kuno, & Loretta Dunne.* 588, 771 (2003)

The First CO Map of a Low Surface Brightness Galaxy. *K. O'Neil & E. Schinnerer.* 588, L81 (2003)

A View through Faraday's Fog: Parsec-Scale Rotation Measures in Active Galactic Nuclei. *R. T. Zavala & G. B. Taylor.* 589, 126 (2003)

Circumnuclear Dust in Nearby Active and Inactive Galaxies. II. Bars, Nuclear Spirals, and the Fueling of Active Galactic Nuclei. *Paul Martini, Michael W. Regan, John S. Mulchaey, & Richard W. Pogge.* 589, 774 (2003)

Galaxy Formation in Triaxial Halos: Black Hole–Bulge–Dark Halo Correlation. *Amr A. El-Zant, Isaac Shlosman, Mitchell C. Begelman, & Juhan Frank.* 590, 641 (2003)

The Molecular Disk in the Cloverleaf Quasar. *S. Venturini & P. M. Solomon.* 590, 740 (2003)

The Multiphase Absorption Systems toward PG 1206+459. *Jie Ding, Jane C. Charlton, Christopher W. Churchill, & Christopher Palma.* 590, 746 (2003)

On the Rapidly Cooling Interior of Supergalactic Winds. *S. Silich, G. Tenorio-Tagle, & C. Muñoz-Tuñón.* 590, 791 (2003)

Circumnuclear Dust in Nearby Active and Inactive Galaxies. I. Data. *Paul Martini, Michael W. Regan, John S. Mulchaey, & Richard W. Pogge.* 146, 353 (2003)

Galaxy Populations and Evolution in Clusters. IV. Deep H I Observations of Dwarf Elliptical Galaxies in the Virgo Cluster. *Christopher J. Conselice, Karen O'Neil, John S. Gallagher, & Rosemary F. G. Wyse.* 591, 167 (2003)

The Composition Gradient in M101 Revisited. II. Electron Temperatures and Implications for the Nebular Abundance Scale. *Robert C. Kennicutt, Jr., Fabio Bresolin, & Donald R. Garnett.* 591, 801 (2003)

Probing O VI Emission in the Halos of Edge-On Spiral Galaxies. *B. Otte, E. M. Murphy, J. C. Howk, Q. D. Wang, W. R. Oegerle, & K. R. Sembach.* 591, 821 (2003)

Molecular Gas and the Nuclear Star Cluster in IC 342: Sufficient Inflow for Recurring Star Formation Events? *Eva Schinnerer, Torsten Böker, & David S. Meier.* 591, L115 (2003)

Extraplanar Emission-Line Gas in Edge-on Spiral Galaxies. II. Optical Spectroscopy. *Scott T. Miller & Sylvain Veilleux.* 592, 79 (2003)

X-Ray Emission from the Hot Interstellar Medium and Southwest Radio Lobe of the Nearby Radio Galaxy Centaurus A. *R. P. Kraft, S. E. Vázquez, W. R. Forman, C. Jones, S. S. Murray, M. J. Hardcastle, D. M. Worrall, & E. Churazov.* 592, 129 (2003)

Infrared Space Observatory Long-Wavelength Spectrometer Spectroscopy of Star-forming Regions in M33. *S. J. U. Higdon, J. L. Higdon, J. M. van der Hulst, & G. J. Stacey.* 592, 161 (2003)

The Effect of Collisional Enhancement of Balmer Lines on the Determination of the Primordial Helium Abundance. *V. Luridiana, A. Peimbert, M. Peimbert, & M. Cervino.* 592, 846 (2003)

The Spatial, Ionization, and Kinematic Conditions of the $z = 1.39$ Damped Lyα Absorber in Q0957+561 A,B. *Christopher W. Churchill, Richard R. Mellon, Jane C. Charlton, & Steven S. Vogt.* 593, 203 (2003)

High-Latitude H I in the Low Surface Brightness Galaxy UGC 7321. *L. D. Matthews & Kenneth Wood.* 593, 721 (2003)

The Complete *Far Ultraviolet Spectroscopic Explorer* Spectrum of the Small Magellanic Cloud Star Sk 108. *Christoforos Mallouris.* 147, 265 (2003)

CO (3–2) Observations of Early-Type Galaxies with the Heinrich Hertz Telescope. *B. Vila-Vilaró, J. Cepa, & H. M. Butner.* 594, 232 (2003)

A Quantitative Comparison of Small Magellanic Cloud, Large Magellanic Cloud, and Milky Way Ultraviolet to Near-Infrared Extinction Curves. *Karl D. Gordon, Geoffrey C. Clayton, K. A. Misselt, Arlo U. Landolt, & Michael J. Wolff.* 594, 279 (2003)

The [C II] 158 Micron Line Deficit in Ultraluminous Infrared Galaxies Revisited. *M. L. Luhman, S. Satyapal, J. Fischer, M. G. Wolfire, E. Sturm, C. C. Dudley, D. Lutz, & R. Genzel.* 594, 758 (2003)

Chandra Observations of Expanding Shells in the Dwarf Starburst Galaxy NGC 3077. *Jürgen Ott, Crystal L. Martin, & Fabian Walter.* 594, 776 (2003)

Unusual CO Line Ratios and Kinematics in the N83/N84 Region of the Small Magellanic Cloud. *Alberto D. Bolatto, Adam Leroy, Frank P. Israel, & James M. Jackson.* 595, 167 (2003)

The Age-Metallicity Relation of the Universe in Neutral Gas: The First 100 Damped Lyα Systems. *Jason X. Prochaska, Eric Gawiser, Arthur M. Wolfe, Sandra Castro, & S. G. Djorgovski.* 595, L9 (2003)

Physical Conditions and Star Formation Activity in the Intragroup Medium of Stephan's Quintet. *C. K. Xu, N. Lu, J. J. Condon, M. Dopita, & R. J. Tuffs.* 595, 665 (2003)

Abundances in the Neutral Interstellar Medium of I Zw 18 from *Far Ultrviolet Spectroscopic Explorer* Observations. *A. Aloisi, S. Savaglio, T. M. Heckman, C. G. Hoopes, C. Leitherer, & K. R. Sembach.* 595, 760 (2003)

GRB 021004: A Possible Shell Nebula around a Wolf-Rayet Star Gamma-Ray Burst Progenitor. *N. Mirabal, J. P. Halpern, Ryan Chornock, Alexei V. Filippenko, D. M. Terndrup, E. Armstrong, J. Kemp, J. R. Thorstensen, M. Tavarez, & C. Espaillat.* 595, 935 (2003)

The Spectrum of Integrated Millimeter Flux of the Magellanic Clouds and 30 Doradus from TopHat and DIRBE Data. *J. E. Aguirre, J. J. Bezaire, E. S. Cheng, D. A. Cottingham, S. S. Cordone, T. M. Crawford, D. J. Fixsen, L. Knox, S. S. Meyer, H. U. Norgaard-Nielsen, R. F. Silverberg, P. Timbie, & G. W. Wilson.* 596, 273 (2003)

Starbursts from the Strong Compression of Galactic Molecular Clouds due to the High Pressure of the Intracluster Medium. *Kenji Bekki & Warrick J. Couch.* 596, L13 (2003)

Cooling in Coronal Gas in the M82 Starburst Superwind. *Charles G. Hoopes, Timothy M. Heckman, David K. Strickland, & J. Christopher Howk.* 596, L175 (2003)

Extraplanar Emission-Line Gas in Edge-On Spiral Galaxies. I. Deep Emission-Line Imaging. *Scott T. Miller & Sylvain Veilleux.* 148, 383 (2003)

A Neutral Hydrogen Survey of the Large Magellanic Cloud: Aperture Synthesis and Multibeam Data Combined. *Sungeun Kim, Lister Staveley-Smith, Michael A. Dopita, Robert J. Sault, Youngung Lee, & You-Hua Chu.* 148, 473 (2003)

Identifying Compact Symmetric Objects in the Southern Sky. *G. B. Taylor & A. B. Peck.* 597, 157 (2003)

The First Deep Advanced Camera for Surveys Lyα Images of Local Starburst Galaxies. *Daniel Kunth, Claus Leitherer, J. Miguel Mas-Hesse, Göran Östlin, & Artashes Petrosian.* 597, 263 (2003)

Supergalactic Winds Driven by Multiple Super–Star Clusters. *Guillermo Tenorio-Tagle, Sergiy Silich, & Casiana Munoz-Tunon.* 597, 279 (2003)

Very High Column Density and Small Reddening toward GRB 020124 at $z = 3.20$. *J. Hjorth, P. Moller, J. Gorosabel, J. P. U. Fynbo, S. Toft, A. O. Jaunsen, A. A. Kaas, T. Pursimo, K. Torii, T. Kato, H. Yamaoka, A. Yoshida, B. Thomsen, M. I. Anderson, I. Burud, J. M. Castro Ceron, A. J. Castro-Tirado, A. S. Fruchter, L. Kaper, C. Kouveliotou, N. Masetti, E. Palazzi, H. Pedersen, E. Pian, J. Rhoads, E. Rol, N. R. Tanvir, P. M. Vreeswijk, R. A. M. J. Wijers, & E. P. J. van den Heuvel.* 597, 699 (2003)

The Nature of Damped Lyα Absorbing Galaxies at $z \leq 1$: A Photometric Redshift Survey of Damped Lyα Absorbers. *Hsiao-Wen Chen & Kenneth M. Lanzetta.* 597, 706 (2003)

Molecular Hydrogen Excitation in Ultraluminous Infrared Galaxies. *R. I. Davies, A. Sternberg, M. Lehnert, & L. E. Tacconi-Garman.* 597, 907 (2003)

The Spectral Energy Distributions of Infant Super–Star Clusters in Henize 2-10 from 7 Millimeters to 6 Centimeters. *Kelsey E. Johnson & Henry A. Kobulnicky.* 597, 923 (2003)

Hα Emission from High-Velocity Clouds and Their Distances. *M. E. Putman, J. Bland-Hawthorn, S. Veilleux, B. K. Gibson, K. C. Freeman, & P. R. Maloney.* 597, 948 (2003)

Star Formation and X-Ray Emission in Distant Star-Forming Galaxies. *Judith G. Cohen.* 598, 288 (2003)

Lyα Emission in Starbursts: Implications for Galaxies at High Redshift. *J. M. Mas-Hesse, D. Kunth, G. Tenorio-Tagle, C. Leitherer, R. J. Terlevich, & E. Terlevich.* 598, 858 (2003)

A *Chandra* Observation of The Diffuse Emission in the Face-on Spiral NGC 6946. *Eric M. Schlegel, S. S. Holt, & R. Petre.* 598, 982 (2003)

Chandra Observations of Low-Mass X-Ray Binaries and Diffuse Gas in the Early-Type Galaxies NGC 4365 and NGC 4382 (M85). *Gregory R. Sivakoff, Craig L. Sarazin, & Jimmy A. Irwin.* 599, 218 (2003)

Giant Molecular Clouds in M33. II. High-Resolution Observations. *E. Rosolowsky, G. Engargiola, R. Plambeck, & L. Blitz.* 599, 257 (2003)

Hot Dust in Radio-loud Active Galactic Nuclei. *Wolfram Freudling, Ralf Siebenmorgen, & Martin Haas.* 599, L13 (2003)

Gas and Dust in the Extremely Red Object ERO J164502+4626.4. *Thomas R. Greve, Rob J. Ivison, & Padeli P. Papadopoulos.* 599, 839 (2003)

The Mass Function of Supergiant Molecular Complexes and Implications for Forming Young Massive Star Clusters in the Antennae (NGC 4038/4039). *Christine D. Wilson, Nicholas Scoville, Suzanne C. Madden, & Vassilis Charmandaris.* 599, 1049 (2003)

Magnetorotationally Driven Galactic Turbulence and the Formation of Giant Molecular Clouds. *Woong-Tae Kim, Eve C. Ostriker, & James M. Stone.* 599, 1157 (2003)

Giant Molecular Clouds in M33. I. BIMA All-Disk Survey. *G. Engargiola, R. L. Plambeck, E. Rosolowsky, & L. Blitz.* 149, 343 (2003)

GALAXIES: JETS

Accretion of Low Angular Momentum Material onto Black Holes: Two-dimensional Hydrodynamical Inviscid Case. *Daniel Proga & Mitchell C. Begelman.* 582, 69 (2003)

Accretion onto the Supermassive Black Hole in M87. *Tiziana Di Matteo, Steven W. Allen, Andrew C. Fabian, Andrew S. Wilson, & Andrew J. Young.* 582, 133 (2003)

What Do the *Hubble Space Telescope* and *Chandra* Tell Us about the Jet and the Nuclear Region of the Radio Galaxy 3C 270? *Marco Chiaberge, Roberto Gilli, F. Duccio Macchetto, William B. Sparks, & Alessandro Capetti.* 582, 645 (2003)

The Effect of External Winds on Relativistic Jets. *Philip E. Hardee & Philip A. Hughes.* 583, 116 (2003)

The Nuclear Regions of the Seyfert Galaxy NGC 4151: Parsec-Scale H I Absorption and a Remarkable Radio Jet. *C. G. Mundell, J. M. Wrobel, A. Pedlar, & J. F. Gallimore.* 583, 192 (2003)

Ultrafast Self-Compton Cooling. *Kunihito Ioka.* 583, 819 (2003)

4C +12.50: A Superluminal Precessing Jet in the Recent Merger System IRAS 13451+1232. *M. L. Lister, K. I. Kellermann, R. C. Vermeulen, M. H. Cohen, J. A. Zensus, & E. Ros.* 584, 135 (2003)

Relation between BL Lacertae Objects and Flat-Spectrum Radio Quasars. *J. H. Fan.* 585, L23 (2003)

The Nuclear Accretion in the FR I Radio Galaxy IC 4296 from *Chandra* and Very Long Baseline Array Observations. *S. Pellegrini, T. Venturi, A. Comastri, G. Fabbiano, F. Fiore, C. Vignali, R. Morganti, & G. Trinchieri.* 585, 677 (2003)

Three-dimensional Simulations of Relativistic Precessing Jets Probing the Structure of Superluminal Sources. *Miguel-Ángel Aloy, José-María Martí, José-Luis Gómez, Iván Agudo, Ewald Müller, & José-María Ibáñez.* 585, L109 (2003)

Radio/X-Ray Offsets of Large-Scale Jets Caused by Synchrotron Time Lags. *J. M. Bai & Myung Gyoon Lee.* 585, L113 (2003)

Lepton Acceleration by Relativistic Collisionless Magnetic Reconnection. *D. A. Larrabee, R. V. E. Lovelace, & M. M. Romanova.* 586, 72 (2003)

Neutral Beams from Blazar Jets. *Armen M. Atoyan & Charles D. Dermer.* 586, 79 (2003)

Clear Evidence for Intranight Optical Variability in Radio-quiet Quasars. *Gopal-Krishna, C. S. Stalin, Ram Sagar, & Paul J. Wiita.* 586, L25 (2003)

The *XMM-Newton* View of the Nucleus of NGC 4261. *R. M. Sambruna, M. Gliozzi, M. Eracleous, W. N. Brandt, & R. Mushotzky.* 586, L37 (2003)

Flaring X-Ray Emission from HST-1, a Knot in the M87 Jet. *D. E. Harris, J. A. Biretta, W. Junor, E. S. Perlman, W. B. Sparks, & A. S. Wilson.* 586, L41 (2003)

ROSAT HRI Investigation of the NGC 507 X-Ray Halo. *M. Paolillo, G. Fabbiano, G. Peres, & D.-W. Kim.* 586, 850 (2003)

The Rate and the Origin of Type Ia Supernovae in Radio Galaxies. *Massimo Della Valle & Nino Panagia.* 587, L71 (2003)

The Speed and Orientation of the Parsec-Scale Jet in 3C 279. *B. Glenn Piner, Stephen C. Unwin, Ann E. Wehrle, Alma C. Zook, C. Megan Urry, & Diane M. Gilmore.* 588, 716 (2003)

Discovery of a New Radio Galaxy within the Error Box of the Unidentified Gamma-Ray Source 3EG J1735−1500. *J. A. Combi, G. E. Romero, J. M. Paredes, D. F. Torres, & M. Ribó.* 588, 731 (2003)

A Continuous Injection Plasma Model for the X-Ray/Radio Knots in Kiloparsec-Scale Jets of Active Galactic Nuclei. *S. Sahayanathan, R. Misra, A. K. Kembhavi, & C. L. Kaul.* 588, L77 (2003)

A View through Faraday's Fog: Parsec-Scale Rotation Measures in Active Galactic Nuclei. *R. T. Zavala & G. B. Taylor.* 589, 126 (2003)

Jet Collimation in Action: Realignment on Kiloparsec Scales in 3C 279. *D. C. Homan, M. L. Lister, K. I. Kellermann, M. H. Cohen, E. Ros, J. A. Zensus, M. Kadler, & R. C. Vermeulen.* 589, L9 (2003)

VLBI Polarimetry of 177 Sources from the Caltech–Jodrell Bank Flat-Spectrum Survey. *L. K. Pollack, G. B. Taylor, & R. T. Zavala.* 589, 733 (2003)

The Flaring H_2O Megamaser and Conpact Radio Source in Markarian 348. *A. B. Peck, C. Henkel, J. S. Ulvestad, A. Brunthaler, H. Falcke, M. Elitzur, K. M. Menten, & J. F. Gallimore.* 590, 149 (2003)

Renewed Activity in the Radio Galaxy PKS B1545−321: Twin Edge-brightened Beams within Diffuse Radio Lobes. *Lakshmi Saripalli, Ravi Subrahmanyan, & N. Udaya Shankar.* 590, 181 (2003)

Fast Magnetic Reconnection via Jets and Current Microsheets. *P. G. Watson & I. J. D. Craig.* 590, L57 (2003)

The Cross-Wavelet Transform and Analysis of Quasi-periodic Behavior in the Pearson-Readhead VLBI Survey Sources. *Brandon C. Kelly, Philip A. Hughes, Hugh D. Aller, & Margo F. Aller.* 591, 695 (2003)

A Relativistic Jet in the Radio-quiet Quasar PG 1407+263. *Katherine M. Blundell, Anthony J. Beasley, & Geoffrey V. Bicknell.* 591, L103 (2003)

X-Ray Emission from the Hot Interstellar Medium and Southwest Radio Lobe of the Nearby Radio Galaxy Centaurus A. *R. P. Kraft, S. E. Vázquez, W. R. Forman, C. Jones, S. S. Murray, M. J. Hardcastle, D. M. Worrall, & E. Churazov.* 592, 129 (2003)

Relativistic Acceleration of Magnetically Driven Jets. *Akira Tomimatsu & Masaaki Takahashi.* 592, 321 (2003)

Numerical Simulations of Astrophysical Jets from Keplerian Disks with Periodic Ejection. *B. F. Vitorino, V. Jatenco-Pereira, & R. Opher.* 592, 332 (2003)

Viscosity-driven Winds from Magnetized Accretion Disks. *Daizo Maruta & Osamu Kaburaki.* 593, 85 (2003)

The Jet-Disk Connection and Blazar Unification. *Laura Maraschi & Fabrizio Tavecchio.* 593, 667 (2003)

The Origin of X-shaped Radio Galaxies: Clues from the Z-symmetric Secondary Lobes. *Gopal-Krishna, Peter L. Biermann, & Paul J. Wiita.* 594, L103 (2003)

Chandra Discovery of an X-Ray Jet and Extended X-Ray Structure in $z = 0.63$ Quasar B2 0738+313. *Aneta Siemiginowska, Carlo Stanghellini, Gianfranco Brunetti, Fabrizio Fiore, Thomas L. Aldcroft, Jill Bechtold, Martin Elvis, Stephen S. Murray, L. A. Antonelli, & S. Colafrancesco.* 595, 643 (2003)

Extended X-Ray Emission around 4C 41.17 at $z = 3.8$. *Caleb Scharf, Ian Smail, Rob Ivison, Richard Bower, Wil van Breugel, & Michiel Reuland.* 596, 105 (2003)

The Influence of Electron Impact Ionization in the Relativistic Pickup of Interstellar Neutrals. *R. Schlickeiser, M. Pohl, & R. Vainio.* 596, 840 (2003)

Relativistic Magnetohydrodynamics with Application to Gamma-Ray Burst Outflows. I. Theory and Semianalytic Trans-Alfvénic Solutions. *Nektarios Vlahakis & Arieh Königl.* 596, 1080 (2003)

Relativistic Magnetohydrodynamics with Applications to Gamma-Ray Burst Outflows. II. Semianalytic Super-Alfvénic Solutions. *Nektarios Vlahakis & Arieh Königl.* 596, 1104 (2003)

Kinetic Energy Flux versus Poynting Flux in Magnetohydrodynamic Winds and Jets: The Intermediate Regime. *Jean Heyvaerts & Colin Norman.* 596, 1256 (2003)

Relativistic Poynting Jets from Accretion Disks. *R. V. E. Lovelace & M. M. Romanova.* 596, L159 (2003)

Identifying Compact Symmetric Objects in the Southern Sky. *G. B. Taylor & A. B. Peck.* 597, 157 (2003)

The Nuclear Spectral Energy Distribution of NGC 6251: A BL Lacertae Object in the Center of an FR I Radio Galaxy. *Marco Chiaberge, Roberto Gilli, Alessandro Capetti, & F. Duccio Macchetto.* 597, 166 (2003)

High-Energy Gamma Rays From FR I Jets. *L. Stawarz, M. Sikora, & M. Ostrowski.* 597, 186 (2003)

Modeling Helical Structures in Relativistic Jets. *Philip E. Hardee.* 597, 798 (2003)

Sensitive VLBI Continuum and H I Absorption Observations of NGC 7474: First Scientific Observations with the Combined Array VLBA, VLA, and Arecibo. *Emmanuel Momjian, Jonathan D. Romney, Christopher L. Carilli, & Thomas H. Troland.* 597, 809 (2003)

An X-Ray Jet Discovered by *Chandra* in the $z = 4.3$ Radio-selected Quasar GB 1508+5714. *Aneta Siemiginowska, Randall K. Smith, Thomas L. Aldcroft, D. A. Schwartz, Frederik Paerels, & Andreea O. Petric.* 598, L15 (2003)

Altered Luminosity Functions of Relativistically Beamed Jet Populations. *M. L. Lister.* 599, 105 (2003)

Jet Formation in BL Lacertae Objects with Different Accretion Models. *Xinwu Cao.* 599, 147 (2003)

Month-Timescale Optical Variability in the M87 Jet. *Eric S. Perlman, D. E. Harris, John A. Biretta, William B. Sparks, & F. Duccio Macchetto.* 599, L65 (2003)

GALAXIES: KINEMATICS AND DYNAMICS

Kinematics of Planetary Nebulae in M51's Tidal Debris. *Patrick R. Durrell, J. Christopher Mihos, John J. Feldmeier, George H. Jacoby, & Robin Ciardullo.* 582, 170 (2003)

Nonlinear Effects in Models of the Galaxy. I. Midplane Stellar Orbits in the Presence of Three-Dimensional Spiral Arms. *Bárbara Pichardo, Marco Martos, Edmundo Moreno, & Julia Espresate.* 582, 230 (2003)

Tidally Triggered Star Formation in Close Pairs of Galaxies. II. Constraints on Burst Strengths and Ages. *Elizabeth Barton Gillespie, Margret J. Geller, & Scott J. Kenyon.* 582, 668 (2003)

The Formation of Nuclear Rings in Barred Spiral Galaxies. *Michael W. Regan & Peter Teuben.* 582, 723 (2003)

The Black Hole Masses and Host Galaxies of BL Lacertae Objects. *Aaron J. Barth, Luis C. Ho, & Wallace L. W. Sargent.* 583, 134 (2003)

The Structure and Dynamics of Luminous and Dark Matter in the Early-Type Lens Galaxy of 0047−281 at $z = 0.485$. *Léon V. E. Koopmans & Tommaso Treu.* 583, 606 (2003)

The Central Mass Distribution in Dwarf and Low Surface Brightness Galaxies. *R. A. Swaters, B. F. Madore, Frank C. van den Bosch, & M. Balcells.* 583, 732 (2003)

New Mass Estimators for Tracer Populations. *N. W. Evans, M. I. Wilkinson, K. M. Perrett, & T. J. Bridges.* 583, 752 (2003)

The State of Galaxy Formation in the Local Universe. *D. J. Pisano & Eric M. Wilcots.* 584, 228 (2003)

Spatially Resolved Millimeter Interferometry of SMM J02399−0136: A Very Massive Galaxy at $z = 2.8$. *Reinhard Genzel, Andrew J. Baker, Linda J. Tacconi, Dieter Lutz, Pierre Cox, Stéphane Guilloteau, & Alain Omont.* 584, 633 (2003)

Thermodynamic Description of a Family of Partially Relaxed Stellar Systems. *G. Bertin & M. Trenti.* 584, 729 (2003)

The Fundamental Plane at $z = 1.27$: First Calibration of the Mass Scale of Red Galaxies at Redshifts $z > 1$. *Pieter G. van Dokkum & S. A. Stanford.* 585, 78 (2003)

The Mass Profile of Galaxy Clusters out to $\sim 2r_{200}$. *Andrea Biviano & Marisa Girardi.* 585, 205 (2003)

A Minor-Merger Interpretation for NGC 1097's "Jets." *James L. Higdon & John F. Wallin.* 585, 281 (2003)

Polar Ring Galaxies and the Tully-Fisher Relation: Implications for the Dark Halo Shape. *E. Iodice, M. Arnaboldi, F. Bournaud, F. Combes, L. S. Sparke, W. van Driel, & M. Capaccioli.* 585, 730 (2003)

Dark Matter within High Surface Brightness Spiral Galaxies. *Thilo Kranz, Adrianne Slyz, & Hans-Walter Rix.* 586, 143 (2003)

On the Spiral Structure of NGC 2915 and Dark Matter. *F. S. Masset & M. Bureau.* 586, 152 (2003)

Intracluster Planetary Nebulae in the Virgo Cluster. II. Imaging Catalog. *John J. Feldmeier, Robin Ciardullo, George H. Jacoby, & Patrick R. Durrell.* 145, 65 (2003)

Morphological and Kinematic Properties of Disk Galaxies Perturbed by a Satellite. *R. Chan & S. Junqueira.* 586, 780 (2003)

Is There Really a Black Hole at the Center of NGC 4041? Constraints from Gas Kinematics. *A. Marconi, D. J. Axon, A. Capetti, W. Maciejewski, J. Atkinson, D. Batcheldor, J. Binney, M. Carollo, L. Dressel, H. Ford, J. Gerssen, M. A. Hughes, D. Macchetto, M. R. Merrifield, C. Scarlata, W. Sparks, M. Stiavelli, Z. Tsvetanov, & R. P. van der Marel.* 586, 868 (2003)

The Kinematic State of the Local Volume. *Alan B. Whiting.* 587, 186 (2003)

Saturation of the Corotation Resonance in a Gaseous Disk. *G. I. Ogilvie & S. H. Lubow.* 587, 398 (2003)

The Kinematics in the Core of the Low Surface Brightness Galaxy DDO 39. *R. A. Swaters, M. A. W. Verheijen, M. A. Bershady, & D. R. Andersen.* 587, L19 (2003)

Stellar Motions in the Polar Ring Galaxy NGC 4650A. *Rob A. Swaters & Vera C. Rubin.* 587, L23 (2003)

A Photometric and Spectroscopic Study of Dwarf and Giant Galaxies in the Coma Cluster. IV. The Luminosity Function. *Bahram Mobasher, Matthew Colless, Dave Carter, Bianca M. Poggianti, Terry J. Bridges, Kelly Kranz, Y. Komiyama, N. Kashikawa, M. Yagi, & S. Okamura.* 587, 605 (2003)

Bars and Dark Matter Halo Cores. *J. A. Sellwood.* 587, 638 (2003)

A Low-Mass Central Black Hole in the Bulgeless Seyfert 1 Galaxy NGC 4395. *Alexei V. Filippenko & Luis C. Ho.* 588, L13 (2003)

A Dynamical Fossil in the Ursa Minor Dwarf Spheroidal Galaxy. *Jan T. Kleyna, Mark I. Wilkinson, Gerard Gilmore, & N. Wyn Evans.* 588, L21 (2003)

Dark Halo Cusp: Asymptotic Convergence. *Avishai Dekel, Itai Arad, Jonathan Devor, & Yuval Birnboim.* 588, 680 (2003)

New Velocity Distribution for Cold Dark Matter in the Context of the Eddington Theory. *J. D. Vergados & D. Owen.* 589, 17 (2003)

Models of the Morphology, Kinematics, and Star Formation History of the Prototypical Collisional Starburst System NGC 7714/7715=Arp 284. *Curtis Struck & Beverly J. Smith.* 589, 157 (2003)

Jet Collimation in Action: Realignment on Kiloparsec Scales in 3C 279. *D. C. Homan, M. L. Lister, K. I. Kellermann, M. H. Cohen, E. Ros, J. A. Zensus, M. Kadler, & R. C. Vermeulen.* 589, L9 (2003)

The Absorption and Emission Kinematics in the $z = 0.7450$ Mg II Absorber toward Q1331+17. *Sara L. Ellison, Gabriela Mallén-Ornelas, & Marcin Sawicki.* 589, 709 (2003)

Substructure in the Andromeda Galaxy Globular Cluster System. *K. M. Perrett, D. A. Stiff, D. A. Hanes, & T. J. Bridges.* 589, 790 (2003)

Draco: A Failure of the Tidal Model. *Ralf S. Klessen, Eva K. Grebel, & Daniel Harbeck.* 589, 798 (2003)

Galaxy Formation in Triaxial Halos: Black Hole–Bulge–Dark Halo Correlation. *Amr A. El-Zant, Isaac Shlosman, Mitchell C. Begelman, & Juhan Frank.* 590, 641 (2003)

Hα Spectroscopy of Galaxies at $z > 2$: Kinematics and Star Formation. *Dawn K. Erb, Alice E. Shapley, Charles C. Steidel, Max Pettini, Kurt L. Adelberger, Matthew P. Hunt, Alan F. M. Moorwood, & Jean-Gabriel Cuby.* 591, 101 (2003)

Formation of Supermassive Black Holes in Galactic Bulges: A Rotating Collapse Model Consistent with the M_{BH}-σ Relation. *Fred C. Adams, David S. Graff, Manasse Mbonye, & Douglas O. Richstone.* 591, 125 (2003)

Dynamics of the Globular Cluster System Associated with M49 (NGC 4472): Cluster Orbital Properties and the Distribution of Dark Matter. *Patrick Côté, Dean E. McLaughlin, Judith G. Cohen, & John P. Blakeslee.* 591, 850 (2003)

Unstable Cold Dark Matter and the Cuspy Halo Problem in Dwarf Galaxies. *F. J. Sánchez-Salcedo.* 591, L107 (2003)

Molecular Gas and the Nuclear Star Cluster in IC 342: Sufficient Inflow for Recurring Star Formation Events? *Eva Schinnerer, Torsten Böker, & David S. Meier.* 591, L115 (2003)

Effects of Wandering on the Coalescence of Black Hole Binaries in Galactic Centers. *Pinaki Chatterjee, Lars Hernquist, & Abraham Loeb.* 592, 32 (2003)

Star Formation and the Interstellar Medium in Four Dwarf Irregular Galaxies. *L. M. Young, L. van Zee, K. Y. Lo, R. C. Dohm-Palmer, & Michelle E. Beierle.* 592, 111 (2003)

Parametric Dwarf Spheroidal Tidal Interaction. *Jean-Julien Fleck & J. R. Kuhn.* 592, 147 (2003)

The Tully-Fisher Relation of Barred Galaxies. *Stéphane Courteau, David R. Andersen, Matthew A. Bershady, Lauren A. MacArthur, & Hans-Walter Rix.* 594, 208 (2003)

Long-lived Double-barred Galaxies: Critical Mass and Length Scales. *Amr A. El-Zant & Isaac Shlosman.* 595, L41 (2003)

Black Hole Masses and the Fundamental Plane of BL Lacertae Objects. *R. Falomo, J. K. Kotilainen, N. Carangelo, & A. Treves.* 595, 624 (2003)

Constraints of the Clumpiness of Dark Matter Halos through Heating of the Disk Galaxies. *Eliani Ardi, Toshio Tsuchiya, & Andreas Burkert.* 596, 204 (2003)

Kinematics of 10 Early-Type Galaxies from *Hubble Space Telescope* and Ground-based Spectroscopy. *Jason Pinkney, Karl Gebhardt, Ralf Bender, Gary Bower, Alan Dressler, S. M. Faber, Alexei V. Filippenko, Richard Green, Douglas Richstone, & Scott Tremaine.* 596, 903 (2003)

High-Resolution Measurements of the Dark Matter Halo of NGC 2976: Evidence for a Shallow Density Profile. *Joshua D. Simon, Alberto D. Bolatto, Adam Leroy, & Leo Blitz.* 596, 957 (2003)

Discovery of a Double Ring in the Dwarf Galaxy Markarian 409. *A. Gil de Paz, B. F. Madore, K. Noeske, L. M. Cairós, P. Papaderos, & S. A. Silich.* 596, L179 (2003)

Space Telescope Imaging Spectrograph Spectroscopy of the Emission-Line Gas in the Nuclei of Nearby FR-I Galaxies. *Jacob Noel-Storr, Stefi A. Baum, Gijs Verdoes Kleijn, Roeland P. van der Marel, Christoper P. O'Dea, Tim de Zeeuw, & C. Marcella Carollo.* 148, 419 (2003)

Supermassive Black Hole Binaries as Galactic Blenders. *Henry E. Kandrup, Ioannis V. Sideris, Balša Terzić, & Courtlandt L. Bohn.* 597, 111 (2003)

The DEEP Groth Strip Survey. IX. Evolution of the Fundamental Plane of Field Galaxies. *Karl Gebhardt, S. M. Faber, David C. Koo, Myungshin Im, Luc Simard, Garth D. Illingworth, Andrew C. Phillips, Vicki L. Sarajedini, Nicole P. Vogt, Benjamin Weiner, & Christopher N. A. Willmer.* 597, 239 (2003)

Circumnulear Structures in the Interacting Seyfert Galaxy of NGC 1241: Kinematics and Optical/Infrared Morphology. *Rubén J. Díaz, Horacio Dottori, Nelson Vera-Villamizar, & Gustavo Carranza.* 597, 860 (2003)

Galaxies under the Cosmic Microscope: A Gemini Multiobject Spectrograph Study of the Lensed Disk Galaxy 289 in A2218. *A. M. Swinbank, J. Smith, R. G. Bower, A. Bunker, I. Smail, R. S. Ellis, Graham P. Smith, J.-P. Kneib, M. Sullivan, & J. Allington-Smith.* 598, 162 (2003)

Observing the Dark Matter Density Profile of Isolated Galaxies. *Francisco Prada, Mayrita Vitvitska, Anatoly Klypin, Jon A. Holtzman, David J. Schlegel, Eva K. Grebel, H.-W. Rix, J. Brinkmann, T. A. McKay, & I. Csabai.* 598, 260 (2003)

Cosmological Mestel Disks and the Rossby Vortex Instability: The Origin of Supermassive Black Holes. *Stirling A. Colgate, Renyue Cen, Hui Li, Nathan Currier, & Michael S. Warren.* 598, L7 (2003)

Internal Kinematics of Spiral Galaxies in Distant Clusters. *B. L. Ziegler, A. Böhm, K. Jäger, J. Heidt, & C. Möllenhoff.* 598, L87 (2003)

The Hubble Constant from the Gravitational Lens B1608+656. *L. V. E. Koopmans, T. Treu, C. D. Fassnacht, R. D. Blandford, & G. Surpi.* 599, 70 (2003)

Eccentric-Disk Models for the Nucleus of M31. *Hiranya V. Peiris & Scott Tremaine.* 599, 237 (2003)

Modified Newtonian Dynamics and the "Dearth of Dark Matter in Ordinary Elliptical Galaxies." *Mordehai Milgrom & Robert H. Sanders.* 599, L25 (2003)

Direct Confirmation of Two Pattern Speeds in the Double-barred Galaxy NGC 2950. *E. M. Corsini, Victor P. Debattista, & J. A. L. Aguerri.* 599, L29 (2003)

Optimal Moments for the Analysis of Peculiar Velocity Surveys. II. Testing. *Hume A. Feldman, Richard Watkins, Adrian L. Melott, & Scott W. Chambers.* 599, 820 (2003)

A Face-on Tully-Fisher Relation. *David R. Andersen & Matthew A. Bershady.* 599, L79 (2003)

GALAXIES: LOCAL GROUP

To Circularize or Not to Circularize?—Orbital Evolution of Satellite Galaxies. *Yoshikazu Hashimoto, Yoko Funato, & Junichiro Makino.* 582, 196 (2003)

The Magellanic Stream, High-Velocity Clouds, and the Sculptor Group. *Mary E. Putman, Lister Staveley-Smith, Kenneth C. Freeman, Brad K. Gibson, & David G. Barnes.* 586, 170 (2003)

Chandra Detection of Local O II Heα Absorption along the Sight Line toward 3C 273. *Taotao Fang, Kenneth R. Sembach, & Claude R. Canizares.* 586, L49 (2003)

A Dynamical Fossil in the Ursa Minor Dwarf Spheroidal Galaxy. *Jan T. Kleyna, Mark I. Wilkinson, Gerard Gilmore, & N. Wyn Evans.* 588, L21 (2003)

RR Lyrae and Short-Period Variable Stars in the Dwarf Irregular Galaxy NGC 6822. *Gisella Clementini, Enrico V. Held, Lara Baldacci, & Luca Rizzi.* 588, L85 (2003)

Are Compact High-Velocity Clouds Extragalactic Objects? *Philip R. Maloney & Mary E. Putman.* 589, 270 (2003)

Draco: A Failure of the Tidal Model. *Ralf S. Klessen, Eva K. Grebel, & Daniel Harbeck.* 589, 798 (2003)

Clues to the Evolution of the Carina Dwarf Spheroidal Galaxy from the Color Distribution of Its Red Giant Stars. *Luca Rizzi, Enrico V. Held, Gianpaolo Bertelli, & Ivo Saviane.* 589, L85 (2003)

Discovery of Latent Star Formation in the Extended H I Gas around the Local Group Dwarf Irregular Galaxy NGC 6822. *Yutaka Komiyama, Sadanori Okamura, Masafumi Yagi, Hisanori Furusawa, Mamoru Doi, Masaru Hamabe, Katsumi Imi, Masahiko Kimura, Satoshi Miyazaki, Fumiaki Nakata, Norio Okada, Masami Ouchi, Maki Sekiguchi, Kazuhiro Shimasaku, Naoki Yasuda, Nobuo Arimoto, & Chisato Ikuta.* 590, L17 (2003)

Parametric Dwarf Spheroidal Tidal Interaction. *Jean-Julien Fleck & J. R. Kuhn.* 592, 147 (2003)

Deep *Hubble Space Telescope* Imaging of IC 1613. II. The Star Formation History. *Evan D. Skillman, Eline Tolstoy, Andrew A. Cole, Andrew E. Dolphin, Abhijit Saha, J. S. Gallagher, R. C. Dohm-Palmer, & Mario Mateo.* 596, 253 (2003)

Andromeda VIII: A New Tidally Distorted Satellite of M31. *Heather L. Morrison, Paul Harding, Denise Hurley-Keller, & George Jacoby.* 596, L183 (2003)

A Two Micron All Sky Survey All-Sky View of the Sagittarius Dwarf Galaxy. I. Morphology of the Sagittarius Core and Tidal Arms. *Steven R. Majewski, M. F. Skrutskie, Martin D. Weinberg, & James C. Ostheimer.* 599, 1082 (2003)

GALAXIES: LUMINOSITY FUNCTION, MASS FUNCTION

CO Luminosity Functions for Far-Infrared– and *B*-Band–selected Galaxies and the First Estimate for $\Omega_{\rm H\,I+H_2}$. *Dusan Keres, Min S. Yun, & J. S. Young.* 582, 659 (2003)

The Hawaii+Anglo-Australian Observatory *K*-Band Galaxy Redshift Survey. I. The Local *K*-Band Luminosity Function. *J.-S. Huang, K. Glazebrook, L. L. Cowie, & C. Tinney.* 584, 203 (2003)

The State of Galaxy Formation in the Local Universe. *D. J. Pisano & Eric M. Wilcots.* 584, 228 (2003)

Intergalactic Globular Clusters and the Faint End of the Galaxy Number Counts in A1656 (Coma). *A. Marín-Franch & A. Aparicio.* 585, 714 (2003)

Searching for $z \simeq 6$ Objects with the *Hubble Space Telescope* Advanced Camera for Surveys: Preliminary Analysis of a Deep Parallel Field. *Haojing Yan, Rogier A. Windhorst, & Seth H. Cohen.* 585, L93 (2003)

A First Estimate of the Baryonic Mass Function of Galaxies. *Eric F. Bell, Daniel H. McIntosh, Neal Katz, & Martin D. Weinberg.* 585, L117 (2003)

The Las Campanas Infrared Survey. IV. The Photometric Redshift Survey and the Rest-Frame *R*-Band Galaxy Luminosity Function at $0.5 \leq z \leq 1.5$. *Hsiao-Wen Chen, Ronald O. Marzke, Patrick J. McCarthy, P. Martini, R. G. Carlberg, S. E. Persson, A. Bunker, C. R. Bridge, & R. G. Abraham.* 586, 745 (2003)

The Hα Luminosity Function and Star Formation Rate at $z \approx 0.24$ Based on Subaru Deep Imaging Data. *Shinobu S. Fujita, Masaru Ajiki, Yasuhiro Shioya, Tohru Nagao, Takashi Murayama, Yoshiaki Taniguchi, Kazuyoshi Umeda, Sanae Yamada, Masafumi Yagi, Sadonori Okamura, & Yutaka Komiyama.* 586, L115 (2003)

Models for Evolution of Dusty and E/S0 Galaxies Seen in Multiband Surveys. *C. K. Xu, C. J. Lonsdale, D. L. Shupe, A. Franceschini, C. Martin, & D. Schiminovich.* 587, 90 (2003)

Luminosity and Stellar Mass Functions of Local Star-forming Galaxies. *Pablo G. Pérez-González, Jesús Gallegeo, Jaime Zamorano, Almudena Alonso-Herrero, Armando Gil de Paz, & Alfonso Aragón-Salamanca.* 587, L27 (2003)

A Photometric and Spectroscopic Study of Dwarf and Giant Galaxies in the Coma Cluster. IV. The Luminosity Function. *Bahram Mobasher, Matthew Colless, Dave Carter, Bianca M. Poggianti, Terry J. Bridges, Kelly Kranz, Y. Komiyama, N. Kashikawa, M. Yagi, & S. Okamura.* 587, 605 (2003)

The Luminosity Function of *IRAS* Point Source Catalog Redshift Survey Galaxies. *Tsutomu T. Takeuchi, Kohji Yoshikawa, & Takako T. Ishii.* 587, L89 (2003)

A Model for *SIRTF* Galaxy Counts. *Jeremy Mould.* 587, L93 (2003)

Near-Infrared Properties of Galaxy Clusters: Luminosity as a Binding Mass Predictor and the State of Cluster Baryons. *Yen-Ting Lin, Joseph J. Mohr, & S. A. Stanford.* 591, 749 (2003)

Galaxy Luminosity Functions from Deep Spectroscopic Samples of Rich Clusters. *Daniel Christlein & Ann I. Zabludoff.* 591, 764 (2003)

Relativistic Cosmology Number Counts and the Luminosity Function. *Marcelo B. Ribeiro & William R. Stoeger.* 592, 1 (2003)

The Galaxy Luminosity Function and Luminosity Density at Redshift $z = 0.1$. *Michael R. Blanton, David W. Hogg, Neta A. Bahcall, J. Brinkmann, Malcolm Britton, Andrew J. Connolly, István Csabai, Masataka Fukugita, Jon Loveday, Avery Meiksin, Jeffrey A. Munn, R. C. Nichol, Sadanori Okamura, Thomas Quinn, Donald P. Schneider, Kazuhiro Shimasaku, Michael A. Strauss, Max Tegmark, Michael S. Vogeley, & David H. Weinberg.* 592, 819 (2003)

Mass-to-Light Ratios of 2dF Galaxies. *Tereasa G. Brainerd & Michael A. Specian.* 593, L7 (2003)

The Munich Near-Infrared Cluster Survey. II. The *K*-Band Luminosity Function of Field Galaxies to $z \sim 1.2$. *N. Drory, R. Bender, G. Feulner, U. Hopp, C. Maraston, J. Snigula, & G. J. Hill.* 595, 698 (2003)

What Shapes the Luminosity Function of Galaxies? *A. J. Benson, R. G. Bower, C. S. Frenk, C. G. Lacey, C. M. Baugh, & S. Cole.* 599, 38 (2003)

The Optical and Near-Infrared Properties of Galaxies. I. Luminosity and Stellar Mass Functions. *Eric F. Bell, Daniel H. McIntosh, Neal Katz, & Martin D. Weinberg.* 149, 289 (2003)

GALAXIES: MAGELLANIC CLOUDS

To Circularize or Not to Circularize?—Orbital Evolution of Satellite Galaxies. *Yoshikazu Hashimoto, Yoko Funato, & Junichiro Makino.* 582, 196 (2003)

The Radial Structure of Supernova Remnant N103B. *Karen T. Lewis, David N. Burrows, John P. Hughes, Patrick O. Slane, Gordon P. Garmire, & John A. Nousek.* 582, 770 (2003)

A Supernova Remnant Collision with a Stellar Wind. *Pablo F. Velázquez, Gloria Koenigsberger, & Alejandro C. Raga.* 584, 284 (2003)

The Chemical Composition of the 30 Doradus Nebula Derived from Very Large Telescope Echelle Spectrophotometry. *Antonio Peimbert.* 584, 735 (2003)

On the Origin of Long Secondary Periods in Semiregular Variables. *E. A. Olivier & P. R. Wood.* 584, 1035 (2003)

The Magellanic Stream, High-Velocity Clouds, and the Sculptor Group. *Mary E. Putman, Lister Staveley-Smith, Kenneth C. Freeman, Brad K. Gibson, & David G. Barnes.* 586, 170 (2003)

An X-Ray Investigation of the NGC 346 Field in the Small Magellanic Cloud. II. The Field Population. *Y. Nazé, J. M. Hartwell, I. R. Stevens, J. Manfroid, S. Marchenko, M. F. Corcoran, A. F. J. Moffat, & G. Skalkowski.* 586, 983 (2003)

Constraints on the Ionization Balance of Hot-Star Winds from *FUSE* Observations of O Stars in the Large Magellanic Cloud. *D. Massa, A. W. Fullerton, G. Sonneborn, & J. B. Hutchings.* 586, 996 (2003)

Far-Ultraviolet and Hα Spectroscopy of SNR 0057−7226 in the Small Magellanic Cloud H II Region N66. *Charles W. Danforth, Ravi Sankrit, William P. Blair, J. Christopher Howk, & You-Hua Chu.* 586, 1179 (2003)

Fundamental Properties and Distances of Large Magellanic Cloud Eclipsing Binaries. IV. HV 5936. *E. L. Fitzpatrick, I. Ribas, E. F. Guinan, F. P. Maloney, & A. Claret.* 587, 685 (2003)

Dust Grain Size Distributions from MRN to MEM. *Geoffrey C. Clayton, Michael J. Wolff, Ulysses J. Sofia, K. D. Gordon, & K. A. Misselt.* 588, 871 (2003)

A Tale of Two Stars: The Extreme O7 Iaf+ Supergiant AV 83 and the OC7.5 III((f)) Star AV 69. *D. John Hillier, T. Lanz, S. R. Heap, I. Hubeny, L. J. Smith, C. J. Evans, D. J. Lennon, & J. C. Bouret.* 588, 1039 (2003)

Ejecta Detection in Middle-aged Large Magellanic Cloud Supernova Remnants 0548−70.4 and 0534−69.9. *S. P. Hendrick, K. J. Borkowski, & S. P. Reynolds.* 593, 370 (2003)

The Complete *Far Ultraviolet Spectroscopic Explorer* Spectrum of the Small Magellanic Cloud Star Sk 108. *Christoforos Mallouris.* 147, 265 (2003)

A Quantitative Comparison of Small Magellanic Cloud, Large Magellanic Cloud, and Milky Way Ultraviolet to Near-Infrared Extinction Curves. *Karl D. Gordon, Geoffrey C. Clayton, K. A. Misselt, Arlo U. Landolt, & Michael J. Wolff.* 594, 279 (2003)

Discovery of a New Pulsar Wind Nebula in the Large Magellanic Cloud. *B. M. Gaensler, S. P. Hendrick, S. P. Reynolds, & K. J. Borkowski.* 594, L111 (2003)

Unusual CO Line Ratios and Kinematics in the N83/N84 Region of the Small Magellanic Cloud. *Alberto D. Bolatto, Adam Leroy, Frank P. Israel, & James M. Jackson.* 595, 167 (2003)

Quantitative Spectroscopy of O Stars at Low Metallicity: O Dwarfs in NGC 346. *J.-C. Bouret, T. Lanz, D. J. Hillier, S. R. Heap, I. Hubeny, D. J. Lennon, L. J. Smith, & C. J. Evans.* 595, 1182 (2003)

The Spectrum of Integrated Millimeter Flux of the Magellanic Clouds and 30 Doradus from TopHat and DIRBE Data. *J. E. Aguirre, J. J. Bezaire, E. S. Cheng, D. A. Cottingham, S. S. Cordone, T. M. Crawford, D. J. Fixsen, L. Knox, S. S. Meyer, H. U. Norgaard-Nielsen, R. F. Silverberg, P. Timbie, & G. W. Wilson.* 596, 273 (2003)

Supernova Remnant Candidates in the 30 Doradus Nebula. *J. S. Lazendic, J. R. Dickel, & P. A. Jones.* 596, 287 (2003)

Space Telescope Imaging Spectrograph Slitless Observations of Small Magellanic Cloud Planetary Nebulae: A Study on Morphology, Emission-Line Intensity, and Evolution. *Letizia Stanghellini, Richard A. Shaw, Bruce Balick, Max Mutchler, J. Chris Blades, & Eva Villaver.* 596, 997 (2003)

A Neutral Hydrogen Survey of the Large Magellanic Cloud: Aperture Synthesis and Multibeam Data Combined. *Sungeun Kim, Lister Staveley-Smith, Michael A. Dopita, Robert J. Sault, Youngung Lee, & You-Hua Chu.* 148, 473 (2003)

Post–Asymptotic Giant Branch Evolution in the Large Megellanic Cloud: A Study of the Central Stars of Planetary Nebulae. *Eva Villaver, Letizia Stanghellini, & Richard A. Shaw.* 597, 298 (2003)

Small Magellanic Cloud–Type Interstellar Dust in the Milky Way. *Lynne A. Valencic, Geoffrey C. Clayton, Karl Gordon, & Tracy L. Smith.* 598, 369 (2003)

Large Magellanic Cloud Bar: Evidence of a Warped Bar. *Annapurni Subramaniam.* 598, L19 (2003)

Hubble Space Telescope Observations of Three Very Young Star Clusters in the Small Magellanic Cloud. *Letizia Stanghellini, Eva Villaver, Richard A. Shaw, & Max Mutchler.* 598, 1000 (2003)

GALAXIES: MAGNETIC FIELDS

Constraints on the Cluster Environments and Hot Spot Magnetic Field Strengths of the Radio Sources 3C 280 and 3C 254. *Megan Donahue, Ruth A. Daly, & Donald J. Horner.* 584, 643 (2003)

Detection of X-Ray Emission from the Eastern Radio Lobe of Pictor A. *Paola Grandi, Matteo Guainazzi, Laura Maraschi, Raffaella Morganti, Roberto Fusco-Femiano, Mariateresa Fiocchi, Lucia Ballo, & Fabrizio Tavecchio.* 586, 123 (2003)

Dynamo Action in Magnetohydrodynamics and Hall-Magnetohydrodynamics. *Pablo D. Mininni, Daniel O. Gómez, & Swadesh M. Mahajan.* 587, 472 (2003)

PSR J1847−0130: A Radio Pulsar with Magnetar Spin Characteristics. *M. A. McLaughlin, I. H. Stairs, V. M. Kaspi, D. R. Lorimer, M. Kramer, A. G. Lyne, R. N. Manchester, F. Camilo, G. Hobbs, A. Possenti, N. D'Amico, & A. J. Faulkner.* 591, L135 (2003)

Rossi X-Ray Timing Explorer Observations of A2256. *Yoel Rephaeli & Duane Gruber.* 595, 137 (2003)

Relativistic Poynting Jets from Accretion Disks. *R. V. E. Lovelace & M. M. Romanova.* 596, L159 (2003)

GALAXIES: NUCLEI

Lensing and the Centers of Distant Early-Type Galaxies. *Charles R. Keeton.* 582, 17 (2003)

SHEEP: The Search for the High-Energy Extragalactic Population. *K. Nandra, I. Georgantopoulos, A. Ptak, & T. J. Turner.* 582, 615 (2003)

What Do the *Hubble Space Telescope* and *Chandra* Tell Us about the Jet and the Nuclear Region of the Radio Galaxy 3C 270? *Marco Chiaberge, Roberto Gilli, F. Duccio Macchetto, William B. Sparks, & Alessandro Capetti.* 582, 645 (2003)

The Formation of Nuclear Rings in Barred Spiral Galaxies. *Michael W. Regan & Peter Teuben.* 582, 723 (2003)

Galactic Bulges from *Hubble Space Telescope* Near-Infrared Camera Multi-Object Spectrometer Observations: The Lack of $r^{1/4}$ Bulges. *Marc Balcells, Alister W. Graham, Lilian Domínguez-Palmero, & Reynier F. Peletier.* 582, L79 (2003)

Protoquasars: Physical States and Observable Properties. *Nozomu Kawakatu, Masayuki Umemura, & Masao Mori.* 583, 85 (2003)

Axisymmetric Dynamical Models of the Central Regions of Galaxies. *Karl Gebhardt, Douglas Richstone, Scott Tremaine, Tod R. Lauer, Ralf Bender, Gary Bower, Alan Dressler, S. M. Faber, Alexei V. Filippenko, Richard Green, Carl Grillmair, Luis C. Ho, John Kormendy, John Magorrian, & Jason Pinkney.* 583, 92 (2003)

The Black Hole Masses and Host Galaxies of BL Lacertae Objects. *Aaron J. Barth, Luis C. Ho, & Wallace L. W. Sargent.* 583, 134 (2003)

Chandra Snapshot Observations of Low-Luminosity Active Galactic Nuclei with a Compact Radio Source. *Yuichi Terashima & Andrew S. Wilson.* 583, 145 (2003)

A Search for "Dwarf" Seyfert Nuclei. VI. Properties of Emission-Line Nuclei in Nearby Galaxies. *Luis C. Ho, Alexei V. Filippenko, & Wallace L. W. Sargent.* 583, 159 (2003)

The Largest Balck Holes and the Most Luminous Galaxies. *Hagai Netzer.* 583, L5 (2003)

Spectral Visibility of the Nucleus of M33 in a *Chandra*/ACIS Observation. *V. La Parola, F. Damiani, G. Fabbiano, & G. Peres.* 583, 758 (2003)

Faint Active Galactic Nuclei and the Ionizing Background. *Michael Schirber & James S. Bullock.* 584, 110 (2003)

X-Ray Luminous Galaxies. I. *Chandra* Observations of IRAS 00317−2142. *I. Georgantopoulos, A. Zezas, & M. J. Ward.* 584, 129 (2003)

Emission and Absorption in the M87 LINER. *Bassem M. Sabra, Joseph C. Shields, Luis C. Ho, Aaron J. Barth, & Alexei V. Filippenko.* 584, 164 (2003)

Long-Term Continuous Monitoring of the Broad-Line Radio Galaxies 3C 390.3 and 3C 120 with the *Rossi X-Ray Timing Explorer*. *Mario Gliozzi, Rita M. Sambruna, & Michael Eracleous.* 584, 176 (2003)

The Collimated Wind in NGC 253. *H. Sugai, R. I. Davies, & M. J. Ward.* 584, L9 (2003)

Black Hole Masses in Three Seyfert Galaxies. *C. A. Onken, B. M. Peterson, M. Dietrich, A. Robinson, & I. M. Salamanca.* 585, 121 (2003)

Numerical Simulations of Mass Outflows Driven from Accretion Disks by Radiation and Magnetic Forces. *Daniel Proga.* 585, 406 (2003)

Does the Narrow [O III] λ5007 Line Reflect the Stellar Velocity Dispersion in Active Galactic Nuclei. *Todd A. Boroson.* 585, 647 (2003)

The Nuclear Accretion in the FR I Radio Galaxy IC 4296 from *Chandra* and Very Long Baseline Array Observations. *S. Pellegrini, T. Venturi, A. Comastri, G. Fabbiano, F. Fiore, C. Vignali, R. Morganti, & G. Trinchieri.* 585, 677 (2003)

Imaging Large-Scale Structure in the X-Ray Sky. *Yuxuan Yang, R. F. Mushotzky, A. J. Barger, L. L. Cowie, D. B. Sanders, & A. T. Steffen.* 585, L85 (2003)

Black Hole Mass and Spin Coevolution by Mergers. *Scott A. Hughes & Roger D. Blandford.* 585, L101 (2003)

The Baldwin Effect and Black Hole Accretion: A Spectral Principal Component Analysis of a Complete Quasar Sample. *Zhaohui Shang, Beverley J. Wills, Edward L. Robinson, D. Wills, Ari Laor, Bingrong Xie, & Juntao Yuan.* 586, 52 (2003)

Is There Really a Black Hole at the Center of NGC 4041? Constraints from Gas Kinematics. *A. Marconi, D. J. Axon, A. Capetti, W. Maciejewski, J. Atkinson, D. Batcheldor, J. Binney, M. Carollo, L. Dressel, H. Ford, J. Gerssen, M. A. Hughes, D. Macchetto, M. R. Merrifield, C. Scarlata, W. Sparks, M. Stiavelli, Z. Tsvetanov, & R. P. van der Marel.* 586, 868 (2003)

CO $J = 7 \rightarrow 6$ Observations of NGC 253: Cosmic-Ray–heated Warm Molecular Gas. *C. M. Bradford, T. Nikola, G. J. Stacey, A. D. Bolatto, J. M. Jackson, M. L. Savage, J. A. Davidson, & S. J. Higdon.* 586, 891 (2003)

Investigation of the Possible Third Image and Mass Models of the Gravitational Lens PMN J1632−0033. *Joshua N. Winn, David Rusin, & Christopher S. Kochanek.* 587, 80 (2003)

An Intrinsic Baldwin Effect in the Hβ Broad Emission Line in the Spectrum of NGC 5548. *Karoline M. Gilbert & Bradley M. Peterson.* 587, 123 (2003)

Ultraviolet Continuum, Physical Conditions, and Filling Factor in Active Galactic Nuclei. *Lucimara P. Martins, Sueli M. Viegas, & Ruth Gruenwald.* 587, 562 (2003)

Spectra from a Magnetic Reconnection–heated Corona in Active Galactic Nuclei. *B. F. Liu, S. Mineshige, & K. Ohsuga.* 587, 571 (2003)

Molecular Gas in Candidate Double-barred Galaxies. II. Cooler, Less Dense Gas Associated with Stronger Central Concentrations. *Glen R. Petitpas & Christine D. Wilson.* 587, 649 (2003)

An Optical Spectroscopic Atlas of Low-Redshift Active Galactic Nuclei. *P. Marziani, J. W. Sulentic, R. Zamanov, M. Calvini, D. Dultzin-Hacyan, R. Bachev, & T. Zwitter.* 145, 199 (2003)

3.1 Micron H_2O Ice Absorption in LINER-Type Ultraluminous Infrared Galaxies with Cool Far-Infrared Colors: The Centrally Concentrated Nature of Their Deeply Buried Energy Sources. *Masatoshi Imanishi & Philip R. Maloney.* 588, 165 (2003)

The X-Ray–faint Emission of the Supermassive Nuclear Black Hole of IC 1459. *G. Fabbiano, M. Elvis, S. Markoff, A. Siemiginowska, S. Pellegrini, A. Zezas, F. Nicastro, G. Trinchieri, & J. McDowell.* 588, 175 (2003)

A Low-Mass Central Black Hole in the Bulgeless Seyfert 1 Galaxy NGC 4395. *Alexei V. Filippenko & Luis C. Ho.* 588, L13 (2003)

A View through Faraday's Fog: Parsec-Scale Rotation Measures in Active Galactic Nuclei. *R. T. Zavala & G. B. Taylor.* 589, 126 (2003)

The Relation between Black Hole Mass, Bulge Mass, and Near-Infrared Luminosity. *Alessandro Marconi & Leslie K. Hunt.* 589, L21 (2003)

VLBI Polarimetry of 177 Sources from the Caltech–Jodrell Bank Flat-Spectrum Survey. *L. K. Pollack, G. B. Taylor, & R. T. Zavala.* 589, 733 (2003)

Circumnuclear Dust in Nearby Active and Inactive Galaxies. II. Bars, Nuclear Spirals, and the Fueling of Active Galactic Nuclei. *Paul Martini, Michael W. Regan, John S. Mulchaey, & Richard W. Pogge.* 589, 774 (2003)

Detection of the "Active" Nucleus of M32. *Luis C. Ho, Yuichi Terashima, & James S. Ulvestad.* 589, 783 (2003)

An Accretion Model for the Growth of the Central Black Hole Associated with Ionization Instability in Quasars. *Y. Lu, K. S. Cheng, & S. N. Zhang.* 590, 52 (2003)

On the Nature of Low-Luminosity Narrow-Line Active Galactic Nuclei. *Ari Laor.* 590, 86 (2003)

The Far-Infrared Spectral Energy Distributions of X-Ray–selected Active Galaxies. *Joanna K. Kuraszkiewicz, Belinda J. Wilkes, Eric J. Hooper, Kim K. McLeod, Kenneth Wood, Jon Bjorkman, Kisha M. Delain, David H. Hughes, Martin S. Elvis, Chris D. Impey, Carol J. Lonsdale, Matt A. Malkan, Jonathan C. McDowell, & Barbara Whitney.* 590, 128 (2003)

Contrasting the Ultraviolet and X-Ray O VI Column Density Inferred for the Outflow in NGC 5548. *Nahum Arav, Jelle Kaastra, Katrien Steenbrugge, Bert Brinkman, Rick Edelson, Kirk T. Korista, & Martijn de Kool.* 590, 174 (2003)

Sqeezars: Tidally Powered Stars Orbiting a Massive Black Hole. *Tal Alexander & Mark Morris.* 590, L25 (2003)

Galaxy Formation in Triaxial Halos: Black Hole–Bulge–Dark Halo Correlation. *Amr A. El-Zant, Isaac Shlosman, Mitchell C. Begelman, & Juhan Frank.* 590, 641 (2003)

A Survey for H_2O Megamasers. III. Monitoring Water Vapor Masers in Active Galaxies. *J. A. Braatz, A. S. Wilson, C. Henkel, R. Gough, & M. Sinclair.* 146, 249 (2003)

Circumnuclear Dust in Nearby Active and Inactive Galaxies. I. Data. *Paul Martini, Michael W. Regan, John S. Mulchaey, & Richard W. Pogge.* 146, 353 (2003)

Formation of Supermassive Black Holes in Galactic Bulges: A Rotating Collapse Model Consistent with the M_{BH}-σ Relation. *Fred C. Adams, David S. Graff, Manasse Mbonye, & Douglas O. Richstone.* 591, 125 (2003)

The Leo I Cloud: Secular Nuclear Evolution of NGC 3379, NGC 3384, and NGC 3368? *O. K. Sil'chenko, A. V. Moiseev, V. L. Afanasiev, V. H. Chavushyan, & J. R. Valdes.* 591, 185 (2003)

The Cross-Wavelet Transform and Analysis of Quasi-periodic Behavior in the Pearson-Readhead VLBI Survey Sources. *Brandon C. Kelly, Philip A. Hughes, Hugh D. Aller, & Margo F. Aller.* 591, 695 (2003)

Simultaneous Optical and Near-Infrared Spectropolorimetry of Type 2 Seyfert Galaxies. *Makoto Watanabe, Tetsuya Nagata, Shuji Sato, Hidehiko Nakaya, & J. H. Hough.* 591, 714 (2003)

Timescales of Soft X-Ray Variability and Physical Constraints in Active Galactic Nuclei. *W. Bian & Y. Zhao.* 591, 733 (2003)

INTEGRAL Spectroscopy of IRAS 17208−0014: Implications for the Evolutionary Scenarios of Ultraluminous Infrared Galaxies. *Santiago Arribas & Luis Colina.* 591, 791 (2003)

Molecular Gas and the Nuclear Star Cluster in IC 342: Sufficient Inflow for Recurring Star Formation Events? *Eva Schinnerer, Torsten Böker, & David S. Meier.* 591, L115 (2003)

Effects of Wandering on the Coalescence of Black Hole Binaries in Galactic Centers. *Pinaki Chatterjee, Lars Hernquist, & Abraham Loeb.* 592, 32 (2003)

Follow-Up *Hubble Space Telescope*/Space Telescope Imaging Spectroscopy of Three Candidate Tidal Disruption Events. *S. Gezari, J. P. Halpern, S. Komossa, D. Grupe, & K. M. Leighly.* 592, 42 (2003)

XMM-Newton Observation of Broad Iron Kα Emission from Seyfert 1.9 Galaxy MCG −5-23-16. *G. C. Dewangan, R. E. Griffiths, & N. J. Schurch.* 592, 52 (2003)

On Resonance-Line Profiles Predicted by Radiation-driven Disk-Wind Models. *Daniel Proga.* 592, L9 (2003)

Accretion of Low Angular Momentum Material onto Black Holes: Two-dimensional Magnetohydrodynamic Case. *Daniel Proga & Mitchell C. Begelman.* 592, 767 (2003)

Black Hole Growth and Activity in a Λ Cold Dark Matter Universe. *Tiziana Di Matteo, Rupert A. C. Croft, Volker Springel, & Lars Hernquist.* 593, 56 (2003)

Comptonization in Super-Eddington Accretion Flow and Growth Timescale of Supermassive Black Holes. *Toshihiro Kawaguchi.* 593, 69 (2003)

Viscosity-driven Winds from Magnetized Accretion Disks. *Daizo Maruta & Osamu Kaburaki.* 593, 85 (2003)

Emission-Line Diagnostics of the Central Engines of Weak-Line Radio Galaxies. *Karen T. Lewis, Michael Eracleous, & Rita M. Sambruna.* 593, 115 (2003)

Nuclear Activity and Massive Star Formation in the Low-Luminosity Active Galactic Nucleus NGC 4303: *Chandra* X-Ray Observations. *E. Jiménez-Bailón, M. Santos-Lleó, J. M. Mas-Hesse, M. Guainazzi, L. Colina, M. Cerviño, & Rosa M. González Delgado.* 593, 127 (2003)

Radio and X-Ray Observations of the Jet in Centaurus A. *M. J. Hardcastle, D. M. Worrall, R. P. Kraft, W. R. Forman, C. Jones, & S. S. Murray.* 593, 169 (2003)

The Disk-Jet Connection in Microquasars and Active Galactic Nuclei. *Mario Livio, J. E. Pringle, & A. R. King.* 593, 184 (2003)

The Jet-Disk Connection and Blazar Unification. *Laura Maraschi & Fabrizio Tavecchio.* 593, 667 (2003)

Elemental Abundances in NGC 3516. *T. J. Turner, S. B. Kraemer, R. F. Mushotzky, I. M. George, & J. R. Gabel.* 594, 128 (2003)

Chandra Observations of NGC 4698: A Seyfert 2 Galaxy with No Absorption. *I. Georgantopoulos & A. Zezas.* 594, 704 (2003)

The Stellar Cusp around the Supermassive Black Hole in the Galactic Center. *R. Genzel, R. Schödel, T. Ott, F. Eisenhauer, R. Hofmann, M. Lehnert, A. Eckart, T. Alexander, A. Sternberg, R. Lenzen, Y. Clénet, F. Lacombe, D. Rouan, A. Renzini, & L. E. Tacconi-Garman.* 594, 812 (2003)

Luminous Hot Accretion Flows: Thermal Equilibrium Curve and Thermal Stability. *Feng Yuan.* 594, L99 (2003)

Magnetic Coupling of a Rotating Black Hole with Its Surrounding Accretion Disk. *Ding-Xiong Wang, Ren-Yi Ma, Wei-Hua Lei, & Guo-Zheng Yao.* 595, 109 (2003)

Self-regulated Growth of Supermassive Black Holes in Galaxies as the Origin of the Optical and X-Ray Luminosity Functions of Quasars. *J. Stuart B. Wyithe & Abraham Loeb.* 595, 614 (2003)

Black Hole Masses and the Fundamental Plane of BL Lacertae Objects. *R. Falomo, J. K. Kotilainen, N. Carangelo, & A. Treves.* 595, 624 (2003)

Kinematic Masses of Super–Star Clusters in M82 from High-Resolution Near-Infrared Spectroscopy. *Nate McCrady, Andrea M. Gilbert, & James R. Graham.* 596, 240 (2003)

Black Holes, Galaxy Formation, and the M_{BH}-σ Relation. *Andrew King.* 596, L27 (2003)

Strong Gravitational Lensing and the Structure of Quasar Outflows. *Doron Chelouche.* 596, L43 (2003)

Long-Term Evolution of Massive Black Hole Binaries. *Miloš Milosavljević & David Merritt.* 596, 860 (2003)

Shadowing of the Nascent Jet in NGC 4261 by a Line-Emitting Supersonic Accretion Disk. *Siming Liu, Michael J. Fromerth, & Fulvio Melia.* 596, 879 (2003)

Stellar Dynamics in the Central Arcsecond of Our Galaxy. *R. Schödel, T. Ott, R. Genzel, A. Eckart, N. Mouawad, & T. Alexander.* 596, 1015 (2003)

Relativistic Poynting Jets from Accretion Disks. *R. V. E. Lovelace & M. M. Romanova.* 596, L159 (2003)

X-Ray Evidence of a Buried Active Galactic Nucleus in UGC 5101. *Masatoshi Imanishi, Yuichi Terashima, Naohisa Anabuki, & Takao Nakagawa.* 596, L167 (2003)

A *Hubble Space Telescope* Survey of Extended [O III] λ5007 Emission in a Far-Infrared Selected Sample of Seyfert Galaxies: Observations. *H. R. Schmitt, J. L. Donley, R. R. J. Antonucci, J. B. Hutchings, & A. L. Kinney.* 148, 327 (2003)

Space Telescope Imaging Spectrograph Spectroscopy of the Emission-Line Gas in the Nuclei of Nearby FR-I Galaxies. *Jacob Noel-Storr, Stefi A. Baum, Gijs Verdoes Kleijn, Roeland P. van der Marel, Christoper P. O'Dea, Tim de Zeeuw, & C. Marcella Carollo.* 148, 419 (2003)

Supermassive Black Hole Binaries as Galactic Blenders. *Henry E. Kandrup, Ioannis V. Sideris, Balša Terzić, & Courtlandt L. Bohn.* 597, 111 (2003)

Nonlinear Outcome of Gravitational Instability in Disks with Realistic Cooling. *Bryan M. Johnson & Charles F. Gammie.* 597, 131 (2003)

Identifying Compact Symmetric Objects in the Southern Sky. *G. B. Taylor & A. B. Peck.* 597, 157 (2003)

The Nuclear Spectral Energy Distribution of NGC 6251: A BL Lacertae Object in the Center of an FR I Radio Galaxy. *Marco Chiaberge, Roberto Gilli, Alessandro Capetti, & F. Duccio Macchetto.* 597, 166 (2003)

An *XMM-Newton* and *Chandra* Investigation of the Nuclear Accretion in the Sombrero Galaxy (NGC 4594). *S. Pellegrini, A. Baldi, G. Fabbiano, & D.-W. Kim.* 597, 175 (2003)

A *Hubble Space Telescope* Survey of Extended [O III] λ5007 Emission in a Far-Infrared Selected Sample of Seyfert Galaxies: Results. *H. R. Schmitt, J. L. Donley, R. R. J. Antonucci, J. B. Hutchings, A. L. Kinney, & J. E. Pringle.* 597, 768 (2003)

Sensitive VLBI Continuum and H I Absorption Observations of NGC 7474: First Scientific Observations with the Combined Array VLBA, VLA, and Arecibo. *Emmanuel Momjian, Jonathan D. Romney, Christopher L. Carilli, & Thomas H. Troland.* 597, 809 (2003)

Molecular Hydrogen Excitation in Ultraluminous Infrared Galaxies. *R. I. Davies, A. Sternberg, M. Lehnert, & L. E. Tacconi-Garman.* 597, 907 (2003)

XMM-Newton Observation of Fe Kα Emission from a Broad Absorption Line Quasar: Markarian 231. *T. J. Turner & S. B. Kraemer.* 598, 916 (2003)

Evolution of the Nuclear Accretion Disk Emission in NGC 1097: Getting Closer to the Black Hole. *Thaisa Storchi-Bergmann, Rodrigo Nemmen da Silva, Michael Eracleous, Jules P. Halpern, Andrew S. Wilson, Alexei V. Filippenko, Maria Teresa Ruiz, R. Chris Smith, & Neil M. Nagar.* 598, 956 (2003)

Spatially Resolved Circumnuclear Dust in Centaurus A. *Margarita Karovska, Massimo Marengo, Martin Elvis, Giovanni G. Fazio, Joseph L. Hora, Philip M. Hinz, William F. Hoffmann, Michael Meyer, & Eric Mamajek.* 598, L91 (2003)

Balmer Lines as Diagnostics of Physical Conditions in Active Galactic Nucleus Broad Emission Line Regions. *L. Č. Popović.* 599, 140 (2003)

A *V*-Band Survey for Variable Galactic Nuclei in the Hubble Deep Field. *Vicki L. Sarajedini, Ronald L. Gilliland, & Christina Kasm.* 599, 173 (2003)

The Line Emission Region in III Zw 2: Kinematics and Variability. *L. Č. Popović, E. G. Mediavilla, E. Bon, N. Stanić, & A. Kubičela.* 599, 185 (2003)

Eccentric-Disk Models for the Nucleus of M31. *Hiranya V. Peiris & Scott Tremaine.* 599, 237 (2003)

Completion of a Survey and Detailed Study of Double-peaked Emission Lines in Radio-loud Active Galactic Nuclei. *Michael Eracleous & Jules P. Halpern.* 599, 886 (2003)

Compact Nuclear Starbursts in Seyfert 2 Galaxies from the CfA and 12 Micron Samples. *Masatoshi Imanishi.* 599, 918 (2003)

The Ionized Gas and Nuclear Environment in NGC 3783. IV. Variability and Modeling of the 900 Kilosecond *Chandra* Spectrum. *Hagai Netzer, Shai Kaspi, Ehud Behar, W. N. Brandt, Doron Chelouche, Ian M. George, D. Michael Crenshaw, Jack R. Gabel, Frederick W. Hamann, Steven B. Kraemer, Gerard A. Kriss, Kirpal Nandra, Bradley M. Peterson, Joseph C. Shields, & T. J. Turner.* 599, 933 (2003)

GALAXIES: PECULIAR

The Time-variable Ultraluminous X-Ray Sources of "The Antennae." *G. Fabbiano, A. Zezas, A. R. King, T. J. Ponman, A. Rots, & Francois Schweizer.* 584, L5 (2003)

Polar Ring Galaxies and the Tully-Fisher Relation: Implications for the Dark Halo Shape. *E. Iodice, M. Arnaboldi, F. Bournaud, F. Combes, L. S. Sparke, W. van Driel, & M. Capaccioli.* 585, 730 (2003)

A Puzzling X-Ray Source Found in the *Chandra* Deep Field–South. *J. Wang, T. Yaqoob, G. Szokoly, R. Gilli, L. Kewley, V. Mainieri, M. Nonino, P. Rosati, P. Tozzi, W. Zheng, A. Zirm, & C. Norman.* 590, L87 (2003)

A Variable Ultraluminous Supersoft X-Ray Source in "The Antennae": Stellar-Mass Black Hole or White Dwarf? *G. Fabbiano, A. R. King, A. Zezas, T. J. Ponman, A. Rots, & François Schweizer.* 591, 843 (2003)

Chandra Observations of the X-Ray–luminous Star-forming Galaxy Merger Arp 299. *A. Zezas, M. J. Ward, & S. S. Murray.* 594, L31 (2003)

The Multicolored Hot Interstellar Medium of the "Antennae" Galaxies (NGC 4038/4039). *G. Fabbiano, M. Krauss, A. Zezas, A. Rots, & S. Neff.* 598, 272 (2003)

GALAXIES: PHOTOMETRY

Structure of Disk-dominated Galaxies. II. Bulge/Disk Parameters, Simulations, and Secular Evolution. *Lauren A. MacArthur, Stephanie Courteau, & Jon A. Holtzman.* 582, 689 (2003)

Galactic Bulges from *Hubble Space Telescope* Near-Infrared Camera Multi-Object Spectrometer Observations: The Lack of $r^{1/4}$ Bulges. *Marc Balcells, Alister W. Graham, Lilian Domínguez-Palmero, & Reynier F. Peletier.* 582, L79 (2003)

The Infrared Spectral Energy Distribution of the Seyfert 2 Prototype NGC 5252. *M. Almudena Prieto & J. A. Acosta-Pulido.* 583, 689 (2003)

Galaxy Clustering Evolution in the UH8K Weak-Lensing Fields. *Gillian Wilson.* 585, 191 (2003)

Extraordinary Diffuse Light in Hickson Compact Group 90. *P. M. White, G. Bothun, Martín A. Guerrero, Michael J. West, & Wayne A. Barkhouse.* 585, 739 (2003)

Stellar Masses of Luminous Compact Blue Galaxies at Redshifts $z = 0.4$–1.2. *R. Guzmán, G. Östlin, D. Kunth, M. A. Bershady, D. C. Koo, & M. A. Pahre.* 586, L45 (2003)

Ultraviolet-Optical Pixel Maps of Face-on Spiral Galaxies: Clues for Dynamics and Star Formation Histories. *Paul B. Eskridge, Jay A. Frogel, Violet A. Taylor, Rogier A. Windhorst, Stephen C. Odewahn, Claudia A. T. C. Chiarenza, Christopher J. Conselice, Richard de Grijs, Lynn D. Matthews, Robert W. O'Connell, & John S. Gallagher III.* 586, 923 (2003)

Subaru Deep Survey. IV. Discovery of a Large-Scale Structure at Redshift $\simeq 5$. *K. Shimasaku, M. Ouchi, S. Okamura, N. Kashikawa, M. Doi, H. Furusawa, M. Hamabe, T. Hayashino, K. Kawabata, M. Kimura, K. Kodaira, Y. Komiyama, Y. Matsuda, M. Miyazaki, S. Miyazaki, F. Nakata, K. Ohta, Y. Ohyama, M. Sekiguchi, Y. Shioya, H. Tamura, Y. Taniguchi, M. Yagi, T. Yamada, & N. Yasuda.* 586, L111 (2003)

New Light on the Stellar Populations in I Zw 18: Deep Near-Infrared Imaging. *Leslie K. Hunt, Trinh X. Thuan, & Yuri I. Izotov.* 588, 281 (2003)

Photometric Redshift Using the Far-Infrared Spectral Energy Distribution. *T. Wiklind.* 588, 736 (2003)

A Wide-Field *Hubble Space Telescope* Study of the Cluster Cl 0024+16 at $z = 0.4$. I. Morphological Distributions to 5 Mpc Radius. *Tommaso Treu, Richard S. Ellis, Jean-Paul Kneib, Alan Dressler, Ian Smail, Oliver Czoske, Augustus Oemler, & Priyamvada Natarajan.* 591, 53 (2003)

Palomar/Las Campanas Imaging Atlas of Blue Compact Dwarf Galaxies. I. Images and Integrated Photometry. *A. Gil de Paz, B. F. Madore, & O. Pevunova.* 147, 29 (2003)

The Broadband Optical Properties of Galaxies with Redshifts $0.02 < z < 0.22$. *Michael R. Blanton, David W. Hogg, Neta A. Bahcall, Ivan K. Baldry, J. Brinkmann, István Csabai, Daniel Eisenstein, Masataka Fukugita, James E. Gunn, Željko Ivezić, D. Q. Lamb, Robert H. Lupton, Jon Loveday, Jeffrey A. Munn, R. C. Nichol, Sadanori Okamura, David J. Schlegel, Kazuhiro Shimasaku, Michael A. Strauss, Michael S. Vogeley, & David H. Weinberg.* 594, 186 (2003)

The Tully-Fisher Relation of Barred Galaxies. *Stéphane Courteau, David R. Andersen, Matthew A. Bershady, Lauren A. MacArthur, & Hans-Walter Rix.* 594, 208 (2003)

Angular Clustering with Photometric Redshifts in the Sloan Digital Sky Survey: Bimodality in the Clustering Properties of Galaxies. *Tamás Budavári, Andrew J. Connolly, Alexander S. Szalay, István Szapudi, István Csabai, Ryan Scranton, Neta A. Bahcall, Jon Brinkmann, Daniel J. Eisenstein, Joshua A. Frieman, Masataka Fukugita, James E. Gunn, David Johnston, Stephen Kent, Jon N. Loveday, Robert H. Lupton, Max Tegmark, Aniruddha R. Thakar, Brian Yanny, Donald G. York, & Idit Zehavi.* 595, 59 (2003)

K_s Number Counts in the Groth and Coppi Fields. *David Cristóbal-Hornillos, Marc Balcells, Mercedes Prieto, Rafael Guzmán, Jesús Gallego, Nicolás Cardiel, Ángel Serrano, & Roser Pelló.* 595, 71 (2003)

On the Invariant Distribution of Galaxies in the r_e-$\langle\mu\rangle_e$ Plane out to $z = 0.64$. *F. La Barbera, G. Busarello, P. Merluzzi, M. Massarotti, & M. Capaccioli.* 595, 127 (2003)

Evolution of Cluster Elliptical Galaxies. *L. Felipe Barrientos & Simon J. Lilly.* 596, 129 (2003)

The Cosmic Evolution of the Galaxy Luminosity Density. *Francesco Calura & Francesca Matteucci.* 596, 734 (2003)

Multicolor Photometry of the Galaxies in A2255 by the Beijing-Arizona-Taiwan-Connecticut Survey and Sloan Digital Sky Survey. *Qirong Yuan, Xu Zhou, & Zhaoji Jiang.* 149, 53 (2003)

The Internal Ultraviolet–Optical Color Dispersion: Quantifying the Morphological K-Correction. *Casey Papovich, Mauro Giavalisco, Mark Dickinson, Christopher J. Conselice, & Henry C. Ferguson.* 598, 827 (2003)

Eccentric-Disk Models for the Nucleus of M31. *Hiranya V. Peiris & Scott Tremaine.* 599, 237 (2003)

Direct Confirmation of Two Pattern Speeds in the Double-barred Galaxy NGC 2950. *E. M. Corsini, Victor P. Debattista, & J. A. L. Aguerri.* 599, L29 (2003)

Infrared Observations of Galaxies in the Local Universe. II. 391 Calibrated Images with Photometric and Structural Measurements. *Albert D. Grauer, Marcia J. Rieke, & Alice C. Quillen.* 149, 327 (2003)

GALAXIES: QUASARS: ABSORPTION LINES

The Chemical Uniformity of High-z Damped Lyα Protogalaxies. *Jason X. Prochaska.* 582, 49 (2003)

Tracing the Warm-Hot Intergalactic Medium at Low Redshift: X-Ray Forest Observations toward H1821+643. *Smita Mathur, David H. Weinberg, & Xuelei Chen.* 582, 82 (2003)

Metal Abundances and Kinematics of Quasar Absorbers. II. Absorption Systems toward Q0347−3819 and APM BR J0307−4945. *S. A. Levshakov, I. I. Agafonova, S. D'Odorico, A. M. Wolfe, & M. Dessauges-Zavadsky.* 582, 596 (2003)

Galaxies and Intergalactic Matter at Redshift $z \sim 3$: Overview. *Kurt L. Adelberger, Charles C. Steidel, Alice E. Shapley, & Max Pettini.* 584, 45 (2003)

Toward a Measurement of the Cosmological Geometry at $z \sim 2$: Predicting Lyα Forest Correlation in Three Dimensions and the Potential of Future Data Sets. *Patrick McDonald.* 585, 34 (2003)

Three Emission-Line Galaxies at $z \sim 2.4$. *Richard Meyer, David Thompson, & Filippo Mannucci.* 585, 73 (2003)

The Contribution of H I–rich Galaxies to the Damped Lyα Absorber Population at $z = 0$. *Jessica L. Rosenberg & Stephen E. Schneider.* 585, 256 (2003)

A Survey of *Far Ultraviolet Spectroscopic Explorer* and *Hubble Space Telescope* Sight Lines through High-Velocity Cloud Complex C. *Joseph A. Collins, J. Michael Shull, & Mark L. Giroux.* 585, 336 (2003)

Heavy-Element Abundances and Dust Depletions in the Host Galaxies of Three Gamma-Ray Bursts. *Sandra Savaglio, S. Michael Fall, & Fabrizio Fiore.* 585, 638 (2003)

A *Far Ultraviolet Spectroscopic Explorer* Survey of Molecular Hydrogen in Intermediate-Velocity Clouds in the Milky Way Halo. *Philipp Richter, Bart P. Wakker, Blair D. Savage, & Kenneth R. Sembach.* 586, 230 (2003)

Chandra Detection of Local O II Heα Absorption along the Sight Line toward 3C 273. *Taotao Fang, Kenneth R. Sembach, & Claude R. Canizares.* 586, L49 (2003)

Intermittent Features of the Quasar Lyα Transmitted Flux: Results from Cosmological Hydrodynamic Simulations. *Long-Long Feng, Jesus Pando, & Li-Zhi Fang.* 587, 487 (2003)

A Quadruple-Phase Strong Mg II Absorber at $z \sim 0.9902$ toward PG 1634+706. *Jie Ding, Jane C. Charlton, Nicholas A. Bond, Stephanie G. Zonak, & Christopher W. Churchill.* 587, 551 (2003)

Metal Absorption Lines as Probes of the Intergalactic Medium Prior to the Reionization Epoch. *Steven R. Furlanetto & Abraham Loeb.* 588, 18 (2003)

High-Resolution STIS/*Hubble Space Telescope* and HIRES/Keck Spectra of Three Weak Mg II Absorbers toward PG 1643+706. *Jane C. Charlton, Jie Ding, Stephanie G. Zonak, Christopher W. Churchill, Nicholas A. Bond, & Jane R. Rigby.* 589, 111 (2003)

The Absorption and Emission Kinematics in the $z = 0.7450$ Mg II Absorber toward Q1331+17. *Sara L. Ellison, Gabriela Mallén-Ornelas, & Marcin Sawicki.* 589, 709 (2003)

Inferring the Linear Power Spectrum from the Lyα Forest. *Matias Zaldarriaga, Román Scoccimarro, & Lam Hui.* 590, 1 (2003)

The Nature of the Ultraviolet/X-Ray Absorber in PG 2302+029. *Bassem M. Sabra, Fred Hamann, Buell T. Jannuzi, Ian M. George, & Joseph C. Shields.* 590, 66 (2003)

Chandra ACIS-S Observations of Three Quasars with Low-Redshift Damped Lyα Absorption: Constraints on the Cosmic Neutral Gas-Phase Metallicity at Redshift $z \approx 0.4$. *David A. Turnshek, Sandhya M. Rao, Andrew F. Ptak, Richard E. Griffiths, & Eric M. Monier.* 590, 730 (2003)

The Multiphase Absorption Systems toward PG 1206+459. *Jie Ding, Jane C. Charlton, Christopher W. Churchill, & Christopher Palma.* 590, 746 (2003)

Modeling the Void H I Column Density Spectrum with Subgalactic Halos. *Curtis V. Manning.* 591, 79 (2003)

Probing the Size of Low-Redshift Lyα Absorbers. *Jessica L. Rosenberg, Rajib Ganguly, Mark L. Giroux, & John T. Stocke.* 591, 677 (2003)

The Multiphase Intracluster Medium in Galaxy Groups Probed by the Lyα Forest. *Hu Zhan, Li-Zhi Fang, & David Burstein.* 592, L1 (2003)

Lens or Binary? *Chandra* Observations of the Wide-Separation Broad Absorption Line Quasar Pair UM 425. *Thomas L. Aldcroft & Paul J. Green.* 592, 710 (2003)

VLT+UVES Spectroscopy of the Ca II Low-Ionization Broad Absorption Line Quasar SDSS J030000.56+004828.0. *Patrick B. Hall, Damien Hutsmékers, Scott F. Anderson, J. Brinkmann, Xiaohui Fan, Donald P. Schneider, & Donald G. York.* 593, 189 (2003)

The Spatial, Ionization, and Kinematic Conditions of the $z = 1.39$ Damped Lyα Absorber in Q0957+561 A,B. *Christopher W. Churchill, Richard R. Mellon, Jane C. Charlton, & Steven S. Vogt.* 593, 203 (2003)

C II* Absorption in Damped Lyα Systems. I. Star Formation Rates in a Two-Phased Medium. *Arthur M. Wolfe, Jason X. Prochaska, & Eric Gawiser.* 593, 215 (2003)

C II* Absorption in Damped Lyα Systems. I. A New Window on the Star Formation History of the Universe. *Arthur M. Wolfe, Eric Gawiser, & Jason X. Prochaska.* 593, 235 (2003)

The ESI/Keck II Damped Lyα Abundance Database. *Jason X. Prochaska, Eric Gawiser, Arthur M. Wolfe, Jeff Cooke, & Dawn Gelino.* 147, 227 (2003)

X-Ray Absorption by the Low-Redshift Intergalactic Medium: A Numerical Study of the Λ Cold Dark Matter Model. *Xuelei Chen, David H. Weinberg, Neal Katz, & Romeel Davé.* 594, 42 (2003)

Lyman Break Galaxies and the Lyα Forest. *Juna A. Kollmeier, David H. Weinberg, Romeel Davé, & Neal Katz.* 594, 75 (2003)

The C IV Mass Density of the Universe at Redshift 5. *Max Pettini, Piero Madau, Michael Bolte, Jason X. Prochaska, Sara L. Ellison, & Xiaohui Fan.* 594, 695 (2003)

Primordial Black Holes as Dark Matter: The Power Spectrum and Evaporation of Early Structures. *N. Afshordi, P. McDonald, & D. N. Spergel.* 594, L71 (2003)

The Nature and Origin of the Nonvoid Lyα Cloud Population. *Curtis V. Manning.* 595, 19 (2003)

XMM-Newton Reveals the Quasar Outflow in PG 1115+080. *G. Chartas, W. N. Brandt, & S. C. Gallagher.* 595, 85 (2003)

Low-Redshift Damped Lyα Galaxies toward the Quasars B2 0827+243, PKS 0952+179, PKS 1127−145, and PKS 1629+120. *Sandhya M. Rao, Daniel B. Nestor, David A. Turnshek, Wendy M. Lane, Eric M. Monier, & Jacqueline Bergeron.* 595, 94 (2003)

Damped Lyα Gas Metallicities at Redshifts $z = 0.9$–2.0 from Sloan Digital Sky Survey Spectra. *Daniel B. Nestor, Sandhya M. Rao, David A. Turnshek, & Daniel Vanden Berk.* 595, L5 (2003)

The Age-Metallicity Relation of the Universe in Neutral Gas: The First 100 Damped Lyα Systems. *Jason X. Prochaska, Eric Gawiser, Arthur M. Wolfe, Sandra Castro, & S. G. Djorgovski.* 595, L9 (2003)

The Thermal Memory of Reionization History. *Lam Hui & Zoltán Haiman.* 596, 9 (2003)

Strong Gravitational Lensing and the Structure of Quasar Outflows. *Doron Chelouche.* 596, L43 (2003)

Metallicity of the Intergalactic Medium Using Pixel Statistics. II. The Distribution of Metals as Traced by C IV. *Joop Schaye, Anthony Aguirre, Tae-Sun Kim, Tom Theuns, Michael Rauch, & Wallace L. W. Sargent.* 596, 768 (2003)

Clustering of Galaxies at $z \sim 3$ Around the Probable Damped Lyα Absorber Toward QSO APM 08279+5255. *Nicolas Bouche & James D. Lowenthal.* 596, 810 (2003)

New Damped Lyα Metallicities from ESI Spectroscopy of Five Palomar Sky Survey Quasars. *Jason X. Prochaska, Sandra Castro, & S. G. Djorgovski.* 148, 317 (2003)

Observational Estimates of the Initial Power Spectrum at Small Scale from Lyα Absorbers. *M. Demianski & A. Doroshkevich.* 597, 81 (2003)

The Nature of Damped Lyα Absorbing Galaxies at $z \leq 1$: A Photometric Redshift Survey of Damped Lyα Absorbers. *Hsiao-Wen Chen & Kenneth M. Lanzetta.* 597, 706 (2003)

Chandra Observation of 3C 212: A New Look at the X-Ray and Ultraviolet Absorbers. *T. L. Aldcroft, A. Siemiginowska, M. Elvis, S. Mathur, F. Nicastro, & S. S. Murray.* 597, 751 (2003)

The Clustering of Intergalactic Metals. *Christophe Pichon, Evan Scannapieco, Bastien Aracil, Patrick Petitjean, Dominique Aubert, Jacqueline Bergeron, & Stéphane Colombi.* 597, L97 (2003)

The Cosmological Baryon Density from the Deuterium-to-Hydrogen Ratio in QSO Absorption Systems: D/H toward Q1243+3047. *David Kirkman, David Tytler, Nao Suzuki, John M. O'Meara, & Dan Lubin.* 149, 1 (2003)

Atomic Data for Resonance Absorption Lines. III. Wavelengths Longward of the Lyman Limit for the Elements Hydrogen to Gallium. *Donald C. Morton.* 149, 203 (2003)

Metallicity Evolution of Damped Lyα Systems in ΛCDM Cosmology. *Renyue Cen, Jeremiah P. Ostriker, Jason X. Prochaska, & Arthur M. Wolfe.* 598, 741 (2003)

The Submillimeter Properties of Broad Absorption Line Quasars. *Chris J. Willot, Steve Rawlings, & Jennifer A. Grimes.* 598, 909 (2003)

An Intrinsic Absorption Complex toward RX J1230.8+0115: Geometry and Photoionization Conditions. *Rajib Ganguly, Joseph Masiero, Jane C. Charlton, & Kenneth R. Sembach.* 598, 922 (2003)

Occurrence and Global Properties of Narrow C IV λ1549 Å Absorption Lines in Moderate-Redshift Quasars. *M. Vestergaard.* 599, 116 (2003)

GALAXIES: QUASARS: EMISSION LINES

The Mass of Quasar Broad Emission Line Regions. *J. A. Baldwin, G. J. Ferland, K. T. Korista, F. Hamann, & M. Dietrich.* 582, 590 (2003)

Chemical Abundances in Broad Emission Line Regions: The "Nitrogen-loud" Quasi-Stellar Object Q0353−383. *J. A. Baldwin, F. Hamann, K. T. Korista, G. J. Ferland, M. Dietrich, & C. Warner.* 583, 649 (2003)

Dynamics of the Lyα and C IV Emitting Gas in 3C 273. *Stéphane Paltani & Marc Türler.* 583, 659 (2003)

Does the Narrow [O III] λ5007 Line Reflect the Stellar Velocity Dispersion in Active Galactic Nuclei. *Todd A. Boroson.* 585, 647 (2003)

The Baldwin Effect and Black Hole Accretion: A Spectral Principal Component Analysis of a Complete Quasar Sample. *Zhaohui Shang, Beverley J. Wills, Edward L. Robinson, D. Wills, Ari Laor, Bingrong Xie, & Juntao Yuan.* 586, 52 (2003)

Predicted Fe II Emission-Line Strengths from Active Galactic Nuclei. *T. A. A. Sigut & Anil K. Pradhan.* 145, 15 (2003)

Iron Emission in $z \approx 6$ QSOs. *Wolfram Freudling, Michael R. Corbin, & Kirk T. Korista.* 587, L67 (2003)

An Optical Spectroscopic Atlas of Low-Redshift Active Galactic Nuclei. *P. Marziani, J. W. Sulentic, R. Zamanov, M. Calvini, D. Dultzin-Hacyan, R. Bachev, & T. Zwitter.* 145, 199 (2003)

The Lack of Broad-Line Regions in Low Accretion Rate Active Galactic Nuclei as Evidence of Their Origin in the Accretion Disk. *Fabrizio Nicastro, Andrea Martocchia, & Giorigo Matt.* 589, L13 (2003)

An Active Galactic Nucleus Sample with High X-Ray–to–Optical Flux Ratio from RASS. II. Optical Emission Line Properties of Seyfert 1 Type Active Galactic Nuclei. *D. W. Xu, Stefanie Komossa, J. Y. Wei, Y. Qian, & X. Z. Zheng.* 590, 73 (2003)

QSOs Associated with Messier 82. *E. Margaret Burbidge, Geoffrey Burbidge, Halton C. Arp, & Stefano Zibetti.* 591, 690 (2003)

Giant Lyα Nebulae Associated with High-Redshift Radio Galaxies. *Michiel Reuland, Wil van Breugel, Huub Röttgering, Wim de Vries, S. A. Stanford, Arjun Dey, Mark Lacy, Joss Bland-Hawthorn, Michael Dopita, & George Miley.* 592, 755 (2003)

Revisited Abundance Diagnostics in Quasars: Fe II/Mg II Ratios. *E. Verner, F. Bruhweiler, D. Verner, S. Johansson, & T. Gull.* 592, L59 (2003)

VLT+UVES Spectroscopy of the Ca II Low-Ionization Broad Absorption Line Quasar SDSS J030000.56+004828.0. *Patrick B. Hall, Damien Hutsmékers, Scott F. Anderson, J. Brinkmann, Xiaohui Fan, Donald P. Schneider, & Donald G. York.* 593, 189 (2003)

Eddington Accretion and QSO Emission Lines at $z \sim 2$. *Michael Juntao Yuan & Beverley J. Wills.* 593, L11 (2003)

Iron Emission in the $z = 6.4$ Quasar SDSS J114816.64+525150.3. *Aaron J. Barth, Paul Martini, Charles H. Nelson, & Luis C. Ho.* 594, L95 (2003)

A Relation between Supermassive Black Hole Mass and Quasar Metallicity? *Craig Warner, Fred Hamann, & Matthias Dietrich.* 596, 72 (2003)

Fe II/Mg II Emission-Line Ratio in High-Redshift Quasars. *M. Dietrich, F. Hamann, I. Appenzeller, & M. Vestergaard.* 596, 817 (2003)

Early Star Formation Traced by the Highest Redshift Quasars. *R. Maiolino, Y. Juarez, R. Mujica, N. M. Nagar, & E. Oliva.* 596, L155 (2003)

Galaxies inside Strömgren Spheres of Luminous Quasars at $z > 6$: Detection of the First Galaxies. *Renyue Cen.* 597, L13 (2003)

Radio-loud Active Galactic Nuclei in the Context of the Eigenvector 1 Parameter Space. *J. W. Sulentic, S. Zamfir, P. Marziani, R. Bachev, M. Calvani, & D. Dultzin-Hacyan.* 597, L17 (2003)

Occurrence and Global Properties of Narrow C IV λ1549 Å Absorption Lines in Moderate-Redshift Quasars. *M. Vestergaard.* 599, 116 (2003)

Balmer Lines as Diagnostics of Physical Conditions in Active Galactic Nucleus Broad Emission Line Regions. *L. Č. Popović.* 599, 140 (2003)

GALAXIES: QUASARS: GENERAL

The Assembly and Merging of Supermassive Black Holes in Hierarchical Models of Galaxy Formation. *Marta Volonteri, Francesco Haardt, & Piero Madau.* 582, 559 (2003)

The Black Hole–Bulge Relationship in Quasars. *Gregory A. Shields, Karl Gebhardt, Sarah Salviander, Beverley J. Wills, Bingrong Xie, Michael S. Brotherton, Juntao Yuan, & Matthias Dietrich.* 583, 124 (2003)

The Largest Balck Holes and the Most Luminous Galaxies. *Hagai Netzer.* 583, L5 (2003)

The Mean Number of Extra Microimage Pairs for Macrolensed Quasars. *Jonathan Granot, Paul L. Schechter, & Joachim Wambsganss.* 583, 575 (2003)

X-Ray Luminous Galaxies. I. *Chandra* Observations of IRAS 00317−2142. *I. Georgantopoulos, A. Zezas, & M. J. Ward.* 584, 129 (2003)

4C +12.50: A Superluminal Precessing Jet in the Recent Merger System IRAS 13451+1232. *M. L. Lister, K. I. Kellermann, R. C. Vermeulen, M. H. Cohen, J. A. Zensus, & E. Ros.* 584, 135 (2003)

Pearson-Readhead Survey Sources. II. The Long-Term Centimeter-Band Total Flux and Linear Polarization Properties of a Complete Radio Sample. *M. F. Aller, H. D. Aller, & P. A. Hughes.* 586, 33 (2003)

Quasar Evolution Driven by Galaxy Encounters in Hierarchical Structures. *N. Menci, A. Cavaliere, A. Fontana, E. Giallongo, F. Poli, & V. Vittorini.* 587, L63 (2003)

An Optical Spectroscopic Atlas of Low-Redshift Active Galactic Nuclei. *P. Marziani, J. W. Sulentic, R. Zamanov, M. Calvini, D. Dultzin-Hacyan, R. Bachev, & T. Zwitter.* 145, 199 (2003)

Quasars Clustering at $z \approx 3$ on Scales $\lesssim 10\ h^{-1}$ Mpc. *L. Infante, J. Varela, M. Moles, G. Hertling, A. García, & F. Menanteau.* 588, 90 (2003)

Cosmic Star Formation History Assocatied with Quasar Activity: An Approach Using the Black Hole–to–Bulge Mass Correlation. *Y. P. Wang, T. Yamada, & Y. Taniguchi.* 588, 113 (2003)

Chandra Survey of Radio-quiet, High-Redshift Quasars. *Jill Bechtold, Aneta Siemiginowska, Joseph Shields, Bozena Czerny, Agnieszka Janiuk, Fred Hamann, Thomas L. Aldcroft, Martin Elvis, & Adam Dobrzycki.* 588, 119 (2003)

What Types of Jets Does Nature Make? A New Population of Radio Quasars. *Paolo Padovani, Eric S. Perlman, Hermine Landt, Paolo Giommi, & Matteo Perri.* 588, 128 (2003)

A Multiwavelength Study of Narrow-Line Seyfert 1 Galaxies from the Second Byurakan Survey. *J. A. Stepanian, E. Benítez, Y. Krongold, I. Cruz-González, J. A. de Diego, V. Chavushyan, R. Mújica, D. Dultzin-Hacyan, & T. Verdugo.* 588, 746 (2003)

Relativistic and Slowing Down: The Flow in the Hot Spots of Powerful Radio Galaxies and Quasars. *Markos Georganopoulos & Demosthenes Kazanas.* 589, L5 (2003)

Quasar Elemental Abundances at High Redshifts. *M. Dietrich, F. Hamann, J. C. Shields, A. Constantin, J. Heidt, K. Jäger, M. Vestergaard, & S. J. Wagner.* 589, 722 (2003)

VLBI Polarimetry of 177 Sources from the Caltech–Jodrell Bank Flat-Spectrum Survey. *L. K. Pollack, G. B. Taylor, & R. T. Zavala.* 589, 733 (2003)

An Accretion Model for the Growth of the Central Black Hole Associated with Ionization Instability in Quasars. *Y. Lu, K. S. Cheng, & S. N. Zhang.* 590, 52 (2003)

Technique for Detecting Warm-Hot Intergalactic Gas in Quasar Ultraviolet Spectra. *Luc Binette, Mario Rodríguez-Martínez, Sinhue Haro-Corzo, & Isidro Ballinas.* 590, 58 (2003)

On the Nature of Low-Luminosity Narrow-Line Active Galactic Nuclei. *Ari Laor.* 590, 86 (2003)

Testing of Inverse Compton Models for Active Galactic Nuclei with Gamma-Ray and Radio Observations. *A. Lähteenmäki & E. Valtaoja.* 590, 95 (2003)

Spectral Slope Variability of BL Lacertae Objects in the Optical Band. *Fausto Vagnetti, Dario Trevese, & Roberto Nesci.* 590, 123 (2003)

A *Hubble Space Telescope*/WFPC2 Snapshot Survey of 2MASS-selected Red QSOs. *Andrew R. Marble, Dean C. Hines, Gary D. Schmidt, Paul S. Smith, Jason A. Surace, Lee Armus, Roc M. Cutri, & Brant O. Nelson.* 590, 707 (2003)

Decline of the Space Density of Quasars between $z = 2$ and $z = 4$. *M. Vigotti, R. Carballo, C. R. Benn, G. De Zotti, R. Fanti, J. I. Gonzalez Serrano, K.-H. Mack, & J. Holt.* 591, 43 (2003)

Timescales of Soft X-Ray Variability and Physical Constraints in Active Galactic Nuclei. *W. Bian & Y. Zhao.* 591, 733 (2003)

The Electron Spectrum in 3C 279 and the Observed Emission Spectrum. *Masaaki Kusunose, Fumio Takahara, & Tomohiro Kato.* 592, L5 (2003)

VLT+UVES Spectroscopy of the Ca II Low-Ionization Broad Absorption Line Quasar SDSS J030000.56+004828.0. *Patrick B. Hall, Damien Hutsmékers, Scott F. Anderson, J. Brinkmann, Xiaohui Fan, Donald P. Schneider, & Donald G. York.* 593, 189 (2003)

Eddington Accretion and QSO Emission Lines at $z \sim 2$. *Michael Juntao Yuan & Beverley J. Wills.* 593, L11 (2003)

The Formation of Galaxy Stellar Cores by the Hierarchical Merging of Supermassive Black Holes. *Marta Volonteri, Piero Madau, & Francesco Haardt.* 593, 661 (2003)

Optical Spectropolarimetry of Quasi-stellar Objects Discovered by the Two-Micron All Sky Survey. *Paul S. Smith, Gary D. Schmidt, Dean C. Hines, & Craig B. Foltz.* 593, 676 (2003)

Time-Delay Measurement of the Lensed Quasar HE 1104−1805. *Eran O. Ofek & Dan Maoz.* 594, 101 (2003)

A New Method to Map Flares in Quasars. *Atsunori Yonehara, Shin Mineshige, Yoh Takei, George Chartas, & Edwin L. Turner.* 594, 107 (2003)

Asymmetric Deviation of the Scattering Cross Section around Lyα Atomic Hydrogen. *Hee-Won Lee.* 594, 637 (2003)

Decelerating Flows in TeV Blazars: A Resolution to the BL Lacertae–FR I Unification Problem. *Markos Georganopoulos & Demosthenes Kazanas.* 594, L27 (2003)

Chandra Observations of NGC 4698: A Seyfert 2 Galaxy with No Absorption. *I. Georgantopoulos & A. Zezas.* 594, 704 (2003)

Self-regulated Growth of Supermassive Black Holes in Galaxies as the Origin of the Optical and X-Ray Luminosity Functions of Quasars. *J. Stuart B. Wyithe & Abraham Loeb.* 595, 614 (2003)

Formation of the First Supermassive Black Holes. *Volker Bromm & Abraham Loeb.* 596, 34 (2003)

Discovery of a Clustered Quasar Pair at $z \approx 5$: Biased Peaks in Early Structure Formation. *S. G. Djorgovski, D. Stern, A. A. Mahabal, & R. Brunner.* 596, 67 (2003)

Black Holes, Galaxy Formation, and the $M_{\rm BH}$-σ Relation. *Andrew King.* 596, L27 (2003)

Submillimeter Observations of a Sample of Broad Absorption Line Quasars. *Geraint F. Lewis, S. C. Chapman, & Zdenka Kuncic.* 596, L35 (2003)

Gemini-South + FLAMINGOS Demonstration Science: Near-IR Spectroscopy of the $z = 5.77$ Quasar SDSS J083643.85+005453.3. *Daniel Stern, Pat Hall, L. Felipe Barrientos, Andrew J. Bunker, Richard Elston, M. J. Ledlow, S. Nicholas Raines, & Jon Willis.* 596, L39 (2003)

Fe II/Mg II Emission-Line Ratio in High-Redshift Quasars. *M. Dietrich, F. Hamann, I. Appenzeller, & M. Vestergaard.* 596, 817 (2003)

Host Galaxies of Low-Z Radio-loud Quasars: A Search of *Hubble Space Telescope* Archives. *Claudio Pagani, Renato Falomo, & Aldo Treves.* 596, 830 (2003)

Relativistic Poynting Jets from Accretion Disks. *R. V. E. Lovelace & M. M. Romanova.* 596, L159 (2003)

Optical Identification of the *ASCA* Medium Sensitivity Survey in the Northern Sky: Nature of Hard X-Ray–Selected Luminous Active Galactic Nuclei. *Masayuki Akiyama, Yoshihiro Ueda, Kouji Ohta, Tadayuki Takahashi, & Toru Yamada.* 148, 275 (2003)

Radio-loud Active Galactic Nuclei in the Context of the Eigenvector 1 Parameter Space. *J. W. Sulentic, S. Zamfir, P. Marziani, R. Bachev, M. Calvani, & D. Dultzin-Hacyan.* 597, L17 (2003)

How Many Active Galaxies and QSOs Will Future Space Missions Detect? *Paola Andreani, Luigi Spinoglio, & Matthew A. Malkan.* 597, 759 (2003)

Sunyaev-Zel'dovich Effects from Quasars in Galaxies and Groups. *A. Lapi, A. Cavaliere, & G. De Zotti.* 597, L93 (2003)

Multiepoch Sky Surveys and the Lifetime of Quasars. *Paul Martini & Donald P. Schneider.* 597, L109 (2003)

A Method for Black Hole Mass Determination in Accretion-powered X-Ray Sources. *Chris R. Shrader & Lev Titarchuk.* 598, 168 (2003)

Optical Identification of the *ASCA* Lynx Deep Survey: An Association of Quasi-Stellar Objects and a Supercluster at $z = 1.3$? *Kouji Ohta, Masayuki Akiyama, Yoshihiro Ueda, Toru Yamada, Kouichiro Nakanishi, Gavin B. Dalton, Yashushi Ogasaka, Tsuneo Kii, & Kiyoshi Hayashida.* 598, 210 (2003)

Cosmological Evolution of the Hard X-Ray Active Galactic Nucleus Luminosity Function and the Origin of the Hard X-Ray Background. *Yoshihiro Ueda, Masayuki Akiyama, Kouji Ohta, & Takamitsu Miyaji.* 598, 886 (2003)

The Submillimeter Properties of Broad Absorption Line Quasars. *Chris J. Willot, Steve Rawlings, & Jennifer A. Grimes.* 598, 909 (2003)

Altered Luminosity Functions of Relativistically Beamed Jet Populations. *M. L. Lister.* 599, 105 (2003)

Hot Dust in Radio-loud Active Galactic Nuclei. *Wolfram Freudling, Ralf Siebenmorgen, & Martin Haas.* 599, L13 (2003)

Combining *Wilkinson Microwave Anisotropy Probe* and Sloan Digital Sky Survey Quasar Data on Reionization Constrains Cosmological Parameters and Star Formation Efficiency. *Weihsueh A. Chiu, Xiaohui Fan, & Jeremiah P. Ostriker.* 599, 759 (2003)

GALAXIES: QUASARS: INDIVIDUAL

Name: Cloverleaf

The Molecular Disk in the Cloverleaf Quasar. *S. Venturini & P. M. Solomon.* 590, 740 (2003)

Alphanumeric: 0957+561

Rapid Brightness Fluctuations in Q0957+561A,B: Microlensing or Seeing? *Wesley N. Colley, Irwin I. Shapiro, Jennifer Pegg, Edwin L. Turner, Tomislav Kundić, Karen Loomis, N. C. Hastings, & Russet McMillan.* 588, 711 (2003)

A Rapid Microlensing Event in the Q0957+561A, B Gravitational Lens System. *Wesley N. Colley & Rudolph E. Schild.* 594, 97 (2003)

Alphanumeric: 1156+295

Around-the-Clock Observations of the Q9057+561A,B Gravitationally Lensed Quasar. II. Results for the Second Observing Season. *Wesley N. Colley, Rudolph E. Schild, Cristina Abajas, David Alcalde, Zeki Aslan, Ilfan Bikmaev, Vahram Chavushyan, Luis Chinarro, Jean-Philippe Cournoyer, Richard Crowe, Vladimir Dudinov, Anna Kathinka Dalland Evans, Young-Beom Jeon, Luis J. Goicoechea, Orhan Golbasi, Irek Khamitov, Kjetil Kjernsmo, Hyun Ju Lee, Jonghwan Lee, Ki Won Lee, Myung Gyoon Lee, Omar Lopez-Cruz, Evenvio Mediavilla, Anthony F. J. Moffat, Raul Mujica, Aurora Ullan, José Muñoz, Alexander Oscoz, Myeong-Gu Park, Norman Purves, Oyvind Saanum, Nail Sakhibullin, Miquel Serra-Ricart, Igor Sinelnikov, Rolf Stabell, Alan Stockton, Jan Teuber, Roy Thompson, Hwa-Sung Woo, & Alexander Zheleznyak.* 587, 71 (2003)

Alphanumeric: AO 0235+164

Chandra ACIS-S Observations of Three Quasars with Low-Redshift Damped Lyα Absorption: Constraints on the Cosmic Neutral Gas-Phase Metallicity at Redshift $z \approx 0.4$. *David A. Turnshek, Sandhya M. Rao, Andrew F. Ptak, Richard E. Griffiths, & Eric M. Monier.* 590, 730 (2003)

Alphanumeric: APM 08279+5255

XMM-Newton Reveals the Quasar Outflow in PG 1115+080. *G. Chartas, W. N. Brandt, & S. C. Gallagher.* 595, 85 (2003)

Clustering of Galaxies at $z \sim 3$ Around the Probable Damped Lyα Absorber Toward QSO APM 08279+5255. *Nicolas Bouche & James D. Lowenthal.* 596, 810 (2003)

Alphanumeric: B2 0738+313

Chandra Discovery of an X-Ray Jet and Extended X-Ray Structure in $z = 0.63$ Quasar B2 0738+313. *Aneta Siemiginowska, Carlo Stanghellini, Gianfranco Brunetti, Fabrizio Fiore, Thomas L. Aldcroft, Jill Bechtold, Martin Elvis, Stephen S. Murray, L. A. Antonelli, & S. Colafrancesco.* 595, 643 (2003)

Alphanumeric: B2 0827+243

Low-Redshift Damped Lyα Galaxies toward the Quasars B2 0827+243, PKS 0952+179, PKS 1127−145, and PKS 1629+120. *Sandhya M. Rao, Daniel B. Nestor, David A. Turnshek, Wendy M. Lane, Eric M. Monier, & Jacqueline Bergeron.* 595, 94 (2003)

Alphanumeric: BR J0307−4945

Metal Abundances and Kinematics of Quasar Absorbers. II. Absorption Systems toward Q0347−3819 and APM BR J0307−4945. *S. A. Levshakov, I. I. Agafonova, S. D'Odorico, A. M. Wolfe, & M. Dessauges-Zavadsky.* 582, 596 (2003)

Alphanumeric: 3C 212

Chandra Observation of 3C 212: A New Look at the X-Ray and Ultraviolet Absorbers. *T. L. Aldcroft, A. Siemiginowska, M. Elvis, S. Mathur, F. Nicastro, & S. S. Murray.* 597, 751 (2003)

Alphanumeric: 3C 254

Constraints on the Cluster Environments and Hot Spot Magnetic Field Strengths of the Radio Sources 3C 280 and 3C 254. *Megan Donahue, Ruth A. Daly, & Donald J. Horner.* 584, 643 (2003)

Alphanumeric: 3C 273

Dynamics of the Lyα and C IV Emitting Gas in 3C 273. *Stéphane Paltani & Marc Türler.* 583, 659 (2003)

Chandra Detection of Local O II Heα Absorption along the Sight Line toward 3C 273. *Taotao Fang, Kenneth R. Sembach, & Claude R. Canizares.* 586, L49 (2003)

Testing the Binary Black Hole Paradigm through the Fe Kα Line Profile: Application to 3C 273. *Diego F. Torres, Gustavo E. Romero, Xavier Barcons, & Youjun Lu.* 596, L31 (2003)

Alphanumeric: 3C 279

The Speed and Orientation of the Parsec-Scale Jet in 3C 279. *B. Glenn Piner, Stephen C. Unwin, Ann E. Wehrle, Alma C. Zook, C. Megan Urry, & Diane M. Gilmore.* 588, 716 (2003)

Jet Collimation in Action: Realignment on Kiloparsec Scales in 3C 279. *D. C. Homan, M. L. Lister, K. I. Kellermann, M. H. Cohen, E. Ros, J. A. Zensus, M. Kadler, & R. C. Vermeulen.* 589, L9 (2003)

The Electron Spectrum in 3C 279 and the Observed Emission Spectrum. *Masaaki Kusunose, Fumio Takahara, & Tomohiro Kato.* 592, L5 (2003)

Alphanumeric: 3C 345

NGC 6212, 3C 354, and Other Quasi-stellar Objects Associated with Them. *G. Burbidge.* 586, L119 (2003)

Alphanumeric: GB 1508+5714

An X-Ray Jet Discovered by *Chandra* in the $z = 4.3$ Radio-selected Quasar GB 1508+5714. *Aneta Siemiginowska, Randall K. Smith, Thomas L. Aldcroft, D. A. Schwartz, Frederik Paerels, & Andreea O. Petric.* 598, L15 (2003)

Alphanumeric: H1413+1143

The Molecular Disk in the Cloverleaf Quasar. *S. Venturini & P. M. Solomon.* 590, 740 (2003)

Alphanumeric: H1821+643

Tracing the Warm-Hot Intergalactic Medium at Low Redshift: X-Ray Forest Observations toward H1821+643. *Smita Mathur, David H. Weinberg, & Xuelei Chen.* 582, 82 (2003)

Alphanumeric: HE 1104−1805AB

Microlensing of Relativistic Knots in the Quasar HE 1104−1805 AB. *Paul L. Schechter, A. Udalski, M. Szymański, M. Kubiak, G. Pietrzyński, I. Soszyński, P. Woźniak, K. Żebruń, O. Szewczyk, & Ł. Wyrzykowski.* 584, 657 (2003)

Time-Delay Measurement of the Lensed Quasar HE 1104−1805. *Eran O. Ofek & Dan Maoz.* 594, 101 (2003)

Alphanumeric: PDS 456

A Massive X-Ray Outflow from the Quasar PDS 456. *J. N. Reeves, P. T. O'Brien, & M. J. Ward.* 593, L65 (2003)

Alphanumeric: PG 1115+080

XMM-Newton Reveals the Quasar Outflow in PG 1115+080. *G. Chartas, W. N. Brandt, & S. C. Gallagher.* 595, 85 (2003)

Alphanumeric: PG 1407+263

A Relativistic Jet in the Radio-quiet Quasar PG 1407+263. *Katherine M. Blundell, Anthony J. Beasley, & Geoffrey V. Bicknell.* 591, L103 (2003)

Alphanumeric: PG 2302+029

The Nature of the Ultraviolet/X-Ray Absorber in PG 2302+029. *Bassem M. Sabra, Fred Hamann, Buell T. Jannuzi, Ian M. George, & Joseph C. Shields.* 590, 66 (2003)

Alphanumeric: PKS 0208−512

The Gamma-Ray Blazar PKS 0208−512 from MeV to GeV Energies. *J. Gregory Stacy, W. Thomas Vestrand, & P. Sreekumar.* 598, 216 (2003)

Alphanumeric: PKS 0952+179

Low-Redshift Damped Lyα Galaxies toward the Quasars B2 0827+243, PKS 0952+179, PKS 1127−145, and PKS 1629+120. *Sandhya M. Rao, Daniel B. Nestor, David A. Turnshek, Wendy M. Lane, Eric M. Monier, & Jacqueline Bergeron.* 595, 94 (2003)

Alphanumeric: PKS 1127−145

Chandra ACIS-S Observations of Three Quasars with Low-Redshift Damped Lyα Absorption: Constraints on the Cosmic Neutral Gas-Phase Metallicity at Redshift $z \approx 0.4$. *David A. Turnshek, Sandhya M. Rao, Andrew F. Ptak, Richard E. Griffiths, & Eric M. Monier.* 590, 730 (2003)

Low-Redshift Damped Lyα Galaxies toward the Quasars B2 0827+243, PKS 0952+179, PKS 1127−145, and PKS 1629+120. *Sandhya M. Rao, Daniel B. Nestor, David A. Turnshek, Wendy M. Lane, Eric M. Monier, & Jacqueline Bergeron.* 595, 94 (2003)

Alphanumeric: PKS 1257−326

Rapid Variability and Annual Cycles in the Characteristic Timescale of the Scintillating Source PKS 1257−326. *H. E. Bignall, D. L. Jauncey, J. E. J. Lovell, A. K. Tzioumis, L. Kedziora-Chudczer, J.-P. Macquart, S. J. Tingay, D. P. Rayner, & R. W. Clay.* 585, 653 (2003)

Alphanumeric: PKS 1629+120

Low-Redshift Damped Lyα Galaxies toward the Quasars B2 0827+243, PKS 0952+179, PKS 1127−145, and PKS 1629+120. *Sandhya M. Rao, Daniel B. Nestor, David A. Turnshek, Wendy M. Lane, Eric M. Monier, & Jacqueline Bergeron.* 595, 94 (2003)

Alpahnumeric: PMN J0134−0931

The Quintuple Quasar: Radio and Optical Observations. *Joshua N. Winn, Christopher S. Kochanek, Charles R. Keeton, & James E. J. Lovell.* 590, 26 (2003)

The Quintuple Quasar: Mass Models and Interpretation. *Charles R. Keeton & Joshua N. Winn.* 590, 39 (2003)

Alphanumeric: PMN J2004−1349

Mass and Dust in the Disk of a Spiral Lens Galaxy. *Joshua N. Winn, Patrick B. Hall, & Paul L. Schechter.* 597, 672 (2003)

Alphanumeric: Q0347−3819

Metal Abundances and Kinematics of Quasar Absorbers. II. Absorption Systems toward Q0347−3819 and APM BR J0307−4945. *S. A. Levshakov, I. I. Agafonova, S. D'Odorico, A. M. Wolfe, & M. Dessauges-Zavadsky.* 582, 596 (2003)

Alphanumeric: Q0957+561A,B

The Spatial, Ionization, and Kinematic Conditions of the $z = 1.39$ Damped Lyα Absorber in Q0957+561 A,B. *Christopher W. Churchill, Richard R. Mellon, Jane C. Charlton, & Steven S. Vogt.* 593, 203 (2003)

Alphanumeric: Q1243+3047

The Cosmological Baryon Density from the Deuterium-to-Hydrogen Ratio in QSO Absorption Systems: D/H toward Q1243+3047. *David Kirkman, David Tytler, Nao Suzuki, John M. O'Meara, & Dan Lubin.* 149, 1 (2003)

Alphanumeric: Q1331+17

The Absorption and Emission Kinematics in the $z = 0.7450$ Mg II Absorber toward Q1331+17. *Sara L. Ellison, Gabriela Mallén-Ornelas, & Marcin Sawicki.* 589, 709 (2003)

Alphanumeric: Q2237+0305

Chandra Observations of QSO 2237+0305. *X. Dai, G. Chartas, E. Agol, M. W. Bautz, & G. P. Garmire.* 589, 100 (2003)

Alphanumeric: Q2345+007

Lens or Binary? *Chandra* Observations of the Wide-Separation Broad Absorption Line Quasar Pair UM 425. *Thomas L. Aldcroft & Paul J. Green.* 592, 710 (2003)

Alphanumeric: QSO J0842+1835

The Measurement of the Light Deflection from Jupiter: Experimental Results. *E. B. Fomalont & S. M. Kopeikin.* 598, 704 (2003)

Alphanumeric: RD 657

Discovery of a Clustered Quasar Pair at $z \approx 5$: Biased Peaks in Early Structure Formation. *S. G. Djorgovski, D. Stern, A. A. Mahabal, & R. Brunner.* 596, 67 (2003)

Alphanumeric: RX J1230.8+0115

An Intrinsic Absorption Complex toward RX J1230.8+0115: Geometry and Photoionization Conditions. *Rajib Ganguly, Joseph Masiero, Jane C. Charlton, & Kenneth R. Sembach.* 598, 922 (2003)

Alphanumeric: S4 0248+430

Chandra ACIS-S Observations of Three Quasars with Low-Redshift Damped Lyα Absorption: Constraints on the Cosmic Neutral Gas-Phase Metallicity at Redshift $z \approx 0.4$. *David A. Turnshek, Sandhya M. Rao, Andrew F. Ptak, Richard E. Griffiths, & Eric M. Monier.* 590, 730 (2003)

Alphanumeric: SDSS 0338+0021

Discovery of a Clustered Quasar Pair at $z \approx 5$: Biased Peaks in Early Structure Formation. *S. G. Djorgovski, D. Stern, A. A. Mahabal, & R. Brunner.* 596, 67 (2003)

Alphanumeric: SDSS J083643.85+005453.3

Iron Emission in $z \approx 6$ QSOs. *Wolfram Freudling, Michael R. Corbin, & Kirk T. Korista.* 587, L67 (2003)

Gemini-South + FLAMINGOS Demonstration Science: Near-IR Spectroscopy of the $z = 5.77$ Quasar SDSS J083643.85+005453.3. *Daniel Stern, Pat Hall, L. Felipe Barrientos, Andrew J. Bunker, Richard Elston, M. J. Ledlow, S. Nicholas Raines, & Jon Willis.* 596, L39 (2003)

Alphanumeric: SDSS J094857.3+002225

SDSS J094857.3+002225: A Very Radio Loud, Narrow-Line Quasar with Relativistic Jets? *Hong-Yan Zhou, Ting-Gui Wang, Xiao-Bo Dong, You-Yuan Zhou, & Cheng Li.* 584, 147 (2003)

Alphanumeric: SDSS J103027.10+052455.0

Iron Emission in $z \approx 6$ QSOs. *Wolfram Freudling, Michael R. Corbin, & Kirk T. Korista.* 587, L67 (2003)

Alphanumeric: SDSS J114816.64+525150.3

Iron Emission in the $z = 6.4$ Quasar SDSS J114816.64+525150.3. *Aaron J. Barth, Paul Martini, Charles H. Nelson, & Luis C. Ho.* 594, L95 (2003)

Alphanumeric: SDSS Q0300+0048

VLT+UVES Spectroscopy of the Ca II Low-Ionization Broad Absorption Line Quasar SDSS J030000.56+004828.0. *Patrick B. Hall, Damien Hutsmékers, Scott F. Anderson, J. Brinkmann, Xiaohui Fan, Donald P. Schneider, & Donald G. York.* 593, 189 (2003)

Alphanumeric: UM 425

Chandra Discovery of the Intracluster Medium around UM 425 at a Redshift of 1.47. *Smita Mathur & Rik J. Williams.* 589, L1 (2003)

Lens or Binary? *Chandra* Observations of the Wide-Separation Broad Absorption Line Quasar Pair UM 425. *Thomas L. Aldcroft & Paul J. Green.* 592, 710 (2003)

GALAXIES: SEYFERT

The X-Ray Spectrum of the Seyfert 1 Galaxy Markarian 766: Dusty Warm Absorber or Relativistic Emission Lines? *K. O. Mason, G. Branduardi-Raymont, P. M. Ogle, M. J. Page, E. M. Puchnarewicz, E. Behar, F. A. Córdova, S. Davis, L. Maraschi, I. M. McHardy, P. T. O'Brien, W. C. Priedhorsky, & T. P. Sasseen.* 582, 95 (2003)

The Kinematics and Physical Conditions of the Ionized Gas in Markarian 509. I. *Chandra* High Energy Grating Spectroscopy. *Tahir Yaqoob, Barry McKernan, Steven B. Kraemer, D. Michael Crenshaw, Jack R. Gabel, Ian M. George, & T. Jane Turner.* 582, 105 (2003)

The Kinematics and Physical Conditions of the Ionized Gas in Markarian 509. II. STIS Echelle Observations. *S. B. Kraemer, D. M. Crenshaw, T. Yaqoob, B. McKernan, J. R. Gabel, I. M. George, T. J. Turner, & J. P. Dunn.* 582, 125 (2003)

The Discovery of H_2O Maser Emission in Seven Active Galactic Nuclei and at High Velocities in the Circinus Galaxy. *L. J. Greenhill, P. T. Kondrakto, J. E. J. Lovell, T. B. H. Kuiper, J. M. Moran, D. L. Jauncey, & G. P. Baines.* 582, L11 (2003)

A Search for "Dwarf" Seyfert Nuclei. VI. Properties of Emission-Line Nuclei in Nearby Galaxies. *Luis C. Ho, Alexei V. Filippenko, & Wallace L. W. Sargent.* 583, 159 (2003)

The Ionized Gas and Nuclear Environment in NGC 3783. II. Averaged *Hubble Space Telescope*/STIS and *Far Ultraviolet Spectroscopic Explorer* Spectra. *Jack R. Gabel, D. Michael Crenshaw, Steven B. Kraemer, W. N. Brandt, Ian M. George, Frederick W. Hamann, Mary Elizabeth Kaiser, Shai Kaspi, Gerard A. Kriss, Smita Mathur, Richard F. Mushotzky, Kirpal Nandra, Hagai Netzer, Bradley M. Peterson, Joseph C. Shields, T. J. Turner, & Wei Zheng.* 583, 178 (2003)

The Nuclear Regions of the Seyfert Galaxy NGC 4151: Parsec-Scale H I Absorption and a Remarkable Radio Jet. *C. G. Mundell, J. M. Wrobel, A. Pedlar, & J. F. Gallimore.* 583, 192 (2003)

The Unified Model and Evolution of Active Galaxies: Implications from a Spectropolarimetric Study. *Hien D. Tran.* 583, 632 (2003)

The Infrared Spectral Energy Distribution of the Seyfert 2 Prototype NGC 5252. *M. Almudena Prieto & J. A. Acosta-Pulido.* 583, 689 (2003)

Correlated Long-Term Optical and X-Ray Variations in NGC 5548. *Philip Uttley, Rick Edelson, Ian M. McHardy, Bradley M. Peterson, & Alex Markowitz.* 584, L53 (2003)

Black Hole Masses in Three Seyfert Galaxies. *C. A. Onken, B. M. Peterson, M. Dietrich, A. Robinson, & I. M. Salamanca.* 585, 121 (2003)

An *Extreme Ultraviolet Explorer* Atlas of Seyfert Galaxy Light Curves: Search for Periodicity. *J. P. Halpern, K. M. Leighly, & H. L. Marshall.* 585, 665 (2003)

Using Multiwavelength Observations to Determine the Black Hole Mass and Accretion Rate in the Type 1 Seyfert Galaxy NGC 5548. *James Chiang & Omer Blaes.* 586, 97 (2003)

Azimuthal and Kinematic Segregation of Neutral and Molecular Gas in Arp 118: The Yin-Yang Galaxy NGC 1144. *P. N. Appleton, V. Charmandaris, Yu Gao, Tom Jarrett, & M. A. Bransford.* 586, 112 (2003)

NGC 6212, 3C 354, and Other Quasi-stellar Objects Associated with Them. *G. Burbidge.* 586, L119 (2003)

Models for Evolution of Dusty and E/S0 Galaxies Seen in Multiband Surveys. *C. K. Xu, C. J. Lonsdale, D. L. Shupe, A. Franceschini, C. Martin, & D. Schiminovich.* 587, 90 (2003)

Resolved Mid-Infrared Emission in the Narrow-Line Region of NGC 4151. *James T. Radomski, Robert K. Piña, Christopher Packham, Charles M. Telesco, James M. De Buizer, R. Scott Fisher, & A. Robinson.* 587, 117 (2003)

An Intrinsic Baldwin Effect in the Hβ Broad Emission Line in the Spectrum of NGC 5548. *Karoline M. Gilbert & Bradley M. Peterson.* 587, 123 (2003)

Ultraviolet Continuum, Physical Conditions, and Filling Factor in Active Galactic Nuclei. *Lucimara P. Martins, Sueli M. Viegas, & Ruth Gruenwald.* 587, 562 (2003)

Spectra from a Magnetic Reconnection–heated Corona in Active Galactic Nuclei. *B. F. Liu, S. Mineshige, & K. Ohsuga.* 587, 571 (2003)

A Low-Mass Central Black Hole in the Bulgeless Seyfert 1 Galaxy NGC 4395. *Alexei V. Filippenko & Luis C. Ho.* 588, L13 (2003)

A Multiwavelength Study of Narrow-Line Seyfert 1 Galaxies from the Second Byurakan Survey. *J. A. Stepanian, E. Benítez, Y. Krongold, I. Cruz-González, J. A. de Diego, V. Chavushyan, R. Mújica, D. Dultzin-Hacyan, & T. Verdugo.* 588, 746 (2003)

Simultaneous *Chandra* and *Rossi X-Ray Timing Explorer* Observations of the Nearby Bright Seyfert 2 Galaxy NGC 4945. *Chris Done, Greg M. Madejski, Piotr T. Życki, & Lincoln J. Greenhill.* 588, 763 (2003)

BeppoSAX Average Spectra of Seyfert Galaxies. *A. Malizia, L. Bassani, J. B. Stephen, G. Di Cocco, F. Fiore, & A. J. Dean.* 589, L17 (2003)

Circumnuclear Dust in Nearby Active and Inactive Galaxies. II. Bars, Nuclear Spirals, and the Fueling of Active Galactic Nuclei. *Paul Martini, Michael W. Regan, John S. Mulchaey, & Richard W. Pogge.* 589, 774 (2003)

An Active Galactic Nucleus Sample with High X-Ray–to–Optical Flux Ratio from RASS. II. Optical Emission Line Properties of Seyfert 1 Type Active Galactic Nuclei. *D. W. Xu, Stefanie Komossa, J. Y. Wei, Y. Qian, & X. Z. Zheng.* 590, 73 (2003)

The Flaring H_2O Megamaser and Conpact Radio Source in Markarian 348. *A. B. Peck, C. Henkel, J. S. Ulvestad, A. Brunthaler, H. Falcke, M. Elitzur, K. M. Menten, & J. F. Gallimore.* 590, 149 (2003)

A Warped Accretion Disk and Wide-Angle Outflow in the Inner Parsec of the Circinus Galaxy. *L. J. Greenhill, R. S. Booth, S. P. Ellingsen, J. R. Herrnstein, D. L. Jauncey, P. M. McCulloch, J. M. Moran, R. P. Norris, J. E. Reynolds, & A. K. Tzioumis.* 590, 162 (2003)

Contrasting the Ultraviolet and X-Ray O VI Column Density Inferred for the Outflow in NGC 5548. *Nahum Arav, Jelle Kaastra, Katrien Steenbrugge, Bert Brinkman, Rick Edelson, Kirk T. Korista, & Martijn de Kool.* 590, 174 (2003)

A Survey for H_2O Megamasers. III. Monitoring Water Vapor Masers in Active Galaxies. *J. A. Braatz, A. S. Wilson, C. Henkel, R. Gough, & M. Sinclair.* 146, 249 (2003)

Circumnuclear Dust in Nearby Active and Inactive Galaxies. I. Data. *Paul Martini, Michael W. Regan, John S. Mulchaey, & Richard W. Pogge.* 146, 353 (2003)

A *Chandra* X-Ray Study of NGC 1068. II. The Luminous X-Ray Source Population. *David A. Smith & Andrew S. Wilson.* 591, 138 (2003)

Simultaneous Optical and Near-Infrared Spectropolorimetry of Type 2 Seyfert Galaxies. *Makoto Watanabe, Tetsuya Nagata, Shuji Sato, Hidehiko Nakaya, & J. H. Hough.* 591, 714 (2003)

Timescales of Soft X-Ray Variability and Physical Constraints in Active Galactic Nuclei. *W. Bian & Y. Zhao.* 591, 733 (2003)

Follow-Up *Hubble Space Telescope*/Space Telescope Imaging Spectroscopy of Three Candidate Tidal Disruption Events. *S. Gezari, J. P. Halpern, S. Komossa, D. Grupe, & K. M. Leighly.* 592, 42 (2003)

XMM-Newton Observation of Broad Iron Kα Emission from Seyfert 1.9 Galaxy MCG −5-23-16. *G. C. Dewangan, R. E. Griffiths, & N. J. Schurch.* 592, 52 (2003)

X-Ray Fluctuation Power Spectral Densities of Seyfert 1 Galaxies. *A. Markowitz, R. Edelson, S. Vaughan, P. Uttley, I. M. George, R. E. Griffiths, S. Kaspi, A. Lawrence, I. McHardy, K. Nandra, K. Pounds, J. Reeves, N. Schurch, & R. Warwick.* 593, 96 (2003)

The Kinematics and Physical Conditions of the Ionized Gas in NGC 4593 from *Chandra* High-Energy Grating Spectroscopy. *Barry McKernan, Tahir Yaqoob, Ian M. George, & T. J. Turner.* 593, 142 (2003)

Simultaneous Ultraviolet and X-Ray Spectroscopy of the Seyfert 1 Galaxy NGC 5548. I. Physical Conditions in the Ultraviolet Absorbers. *D. M. Crenshaw, S. B. Kraemer, J. R. Gabel, J. S. Kaastra, K. C. Steenbrugge, A. C. Brinkman, J. P. Dunn, I. M. George, D. A. Liedahl, F. B. S. Paerels, T. J. Turner, & T. Yaqoob.* 594, 116 (2003)

Elemental Abundances in NGC 3516. *T. J. Turner, S. B. Kraemer, R. F. Mushotzky, I. M. George, & J. R. Gabel.* 594, 128 (2003)

The Ionized Gas and Nuclear Environment in NGC 3783. III. Detection of a Decreasing Radial Velocity in an Intrinsic Ultraviolet Absorber. *Jack R. Gabel, D. Michael Crenshaw, Steven B. Kraemer, W. N. Brandt, Ian M. George, Frederick W. Hamann, Mary Elizabeth Kaiser, Shai Kaspi, Gerard A. Kriss, Smita Mathur, Richard F. Mushotzky, Kirpal Nandra, Hagai Netzer, Bradley M. Paterson, Joseph C. Shields, T. J. Turner, & Wei Zheng.* 595, 120 (2003)

Catching NGC 4051 in the Low State with *Chandra*. *Philip Uttley, Antonella Fruscione, Ian M. Hardy, & Georg Lamer.* 595, 656 (2003)

Can a Dusty Warm Absorber Model Reproduce the Soft X-Ray Spectra of MCG −6-30-15 and Markarian 766? *Masao Sako, Steven M. Kahn, Graziella Branduardi-Raymont, Jelle S. Kaastra, Albert C. Brinkman, Mathew J. Page, Ehud Behar, Frits Paerels, Ali Kinkhabwala, Duane A. Liedahl, & Jan Willem den Herder.* 596, 114 (2003)

Interferometer Observations of Subparsec-Scale Infrared Emission in the Nucleus of NGC 4151. *Mark Swain, G. Vasisht, R. Akeson, J. Monnier, R. Millan-Gabet, E. Serabyn, M. Creech-Eakman, G. van Belle, J. Beletic, C. Beichman, A. Boden, A. Booth, M. Colavita, J. Gathright, M. Hrynevych, C. Koresko, D. Le Mignant, R. Ligon, B. Mennesson, C. Neyman, A. Sargent, M. Shao, R. Thompson, S. Unwin, & P. Wizinowich.* 596, L163 (2003)

A *Hubble Space Telescope* Survey of Extended [O III] λ5007 Emission in a Far-Infrared Selected Sample of Seyfert Galaxies: Observations. *H. R. Schmitt, J. L. Donley, R. R. J. Antonucci, J. B. Hutchings, & A. L. Kinney.* 148, 327 (2003)

Analysis of the Interaction Effects in the Southern Galaxy Pair Tol 1238−364 and ESO 381-G009. *S. Temporin, S. Ciroi, P. Rafanelli, M. Radovich, J. Vennik, G. M. Richter, & K. Birkle.* 148, 353 (2003)

X-Ray Variability of the Magnetic Cataclysmic Variable V1432 Aquilae and the Seyfert Galaxy NGC 6814. *K. Mukai, C. Hellier, G. Madejski, J. Patterson, & D. R. Skillman.* 597, 479 (2003)

How Many Active Galaxies and QSOs Will Future Space Missions Detect? *Paola Andreani, Luigi Spinoglio, & Matthew A. Malkan.* 597, 759 (2003)

A *Hubble Space Telescope* Survey of Extended [O III] λ5007 Emission in a Far-Infrared Selected Sample of Seyfert Galaxies: Results. *H. R. Schmitt, J. L. Donley, R. R. J. Antonucci, J. B. Hutchings, A. L. Kinney, & J. E. Pringle.* 597, 768 (2003)

A Long Look at NGC 3783 with the *XMM-Newton* Reflection Grating Spectrometer. *Ehud Behar, Andrew P. Rasmussen, Alexander J. Blustin, Masao Sako, Steven M. Kahn, Jelle S. Kaastra, Graziella Branduardi-Raymont, & Katrien C. Steenbrugge.* 598, 232 (2003)

XMM-Newton Observation of Fe Kα Emission from a Broad Absorption Line Quasar: Markarian 231. *T. J. Turner & S. B. Kraemer.* 598, 916 (2003)

Long-Term X-Ray Spectral Variability in Seyfert 1 Galaxies. *A. Markowitz, R. Edelson, & S. Vaughan.* 598, 935 (2003)

Evolution of the Nuclear Accretion Disk Emission in NGC 1097: Getting Closer to the Black Hole. *Thaisa Storchi-Bergmann, Rodrigo Nemmen da Silva, Michael Eracleous, Jules P. Halpern, Andrew S. Wilson, Alexei V. Filippenko, Maria Teresa Ruiz, R. Chris Smith, & Neil M. Nagar.* 598, 956 (2003)

A Warm/Hot Intergalactic Medium toward 3C 120? *Barry McKernan, Tahir Yaqoob, Richard Mushotzky, Ian M. George, & T. Jane Turner.* 598, L83 (2003)

The Line Emission Region in III Zw 2: Kinematics and Variability. *L. Č. Popović, E. G. Mediavilla, E. Bon, N. Stanić, & A. Kubičela.* 599, 185 (2003)

Compact Nuclear Starbursts in Seyfert 2 Galaxies from the CfA and 12 Micron Samples. *Masatoshi Imanishi.* 599, 918 (2003)

The Ionized Gas and Nuclear Environment in NGC 3783. IV. Variability and Modeling of the 900 Kilosecond *Chandra* Spectrum. *Hagai Netzer, Shai Kaspi, Ehud Behar, W. N. Brandt, Doron Chelouche, Ian M. George, D. Michael Crenshaw, Jack R. Gabel, Frederick W. Hamann, Steven B. Kraemer, Gerard A. Kriss, Kirpal Nandra, Bradley M. Peterson, Joseph C. Shields, & T. J. Turner.* 599, 933 (2003)

X-Ray–Extreme Ultraviolet Simultaneous Observations of NGC 5548: Fast Extreme Ultraviolet Dip without X-Ray Variation. *Y. Haba, H. Kunieda, K. Misaki, Y. Terashima, J. S. Kaastra, R. Mewe, A. C. Fabian, & K. Iwasawa.* 599, 949 (2003)

GALAXIES: SPIRAL

Chandra Observation of Luminous and Ultraluminous X-Ray Binaries in M101. *K. Mukai, W. D. Pence, S. L. Snowden, & K. D. Kuntz.* 582, 184 (2003)

Central Mass Concentration and Bar Dissolution in Nearby Spiral Galaxies. *Mousumi Das, Peter J. Teuben, Stuart N. Vogel, Michael W. Regan, Kartik Sheth, Andrew I. Harris, & William H. Jefferys.* 582, 190 (2003)

1WGA J1216.9+3743: *Chandra* Finds an Extremely Steep Ultraluminous X-Ray Source. *I. Cagnoni, R. Turolla, A. Treaves, J.-S. Huang, D. W. Kim, M. Elvis, & A. Celotti.* 582, 654 (2003)

Structure of Disk-dominated Galaxies. II. Bulge/Disk Parameters, Simulations, and Secular Evolution. *Lauren A. MacArthur, Stephanie Courteau, & Jon A. Holtzman.* 582, 689 (2003)

The Formation of Nuclear Rings in Barred Spiral Galaxies. *Michael W. Regan & Peter Teuben.* 582, 723 (2003)

Galactic Bulges from *Hubble Space Telescope* Near-Infrared Camera Multi-Object Spectrometer Observations: The Lack of $r^{1/4}$ Bulges. *Marc Balcells, Alister W. Graham, Lilian Domínguez-Palmero, & Reynier F. Peletier.* 582, L79 (2003)

Dark Matter within High Surface Brightness Spiral Galaxies. *Thilo Kranz, Adrianne Slyz, & Hans-Walter Rix.* 586, 143 (2003)

Hubble Space Telescope WFPC2 Morphologies of *K*-selected Extremely Red Galaxies. *Lin Yan & David Thompson.* 586, 765 (2003)

Morphological and Kinematic Properties of Disk Galaxies Perturbed by a Satellite. *R. Chan & S. Junqueira.* 586, 780 (2003)

Is There Really a Black Hole at the Center of NGC 4041? Constraints from Gas Kinematics. *A. Marconi, D. J. Axon, A. Capetti, W. Maciejewski, J. Atkinson, D. Batcheldor, J. Binney, M. Carollo, L. Dressel, H. Ford, J. Gerssen, M. A. Hughes, D. Macchetto, M. R. Merrifield, C. Scarlata, W. Sparks, M. Stiavelli, Z. Tsvetanov, & R. P. van der Marel.* 586, 868 (2003)

Optical Spectroscopy and Ionization Models of the Diffuse Ionized Gas in M33, M51/NGC 5195, and M81. *Charles G. Hoopes & René A. M. Walterbos.* 586, 902 (2003)

Ultraviolet-Optical Pixel Maps of Face-on Spiral Galaxies: Clues for Dynamics and Star Formation Histories. *Paul B. Eskridge, Jay A. Frogel, Violet A. Taylor, Rogier A. Windhorst, Stephen C. Odewahn, Claudia A. T. C. Chiarenza, Christopher J. Conselice, Richard de Grijs, Lynn D. Matthews, Robert W. O'Connell, & John S. Gallagher III.* 586, 923 (2003)

The BIMA Survey of Nearby Galaxies (BIMA SONG). II. The CO Data. *Tamara T. Helfer, Michele D. Thornley, Michael W. Regan, Tony Wong, Kartik Sheth, Stuart N. Vogel, Leo Blitz, & Douglas C.-J. Bock.* 145, 259 (2003)

Further Discoveries of ^{12}CO in Low Surface Brightness Galaxies. *K. O'Neil, E. Schinnerer, & P. Hofner.* 588, 230 (2003)

Disk-Bulge-Halo Models for the Andromeda Galaxy. *Lawrence M. Widrow, Kathryn M. Perrett, & Sherry H. Suyu.* 588, 311 (2003)

The First CO Map of a Low Surface Brightness Galaxy. *K. O'Neil & E. Schinnerer.* 588, L81 (2003)

A Turbulent Origin for Flocculent Spiral Structure in Galaxies. *Bruce G. Elmegreen, Debra Meloy Elmegreen, & Samuel N. Leitner.* 590, 271 (2003)

An Imaging Survey of Early-Type Barred Galaxies. *Peter Erwin & Linda S. Sparke.* 146, 299 (2003)

The Composition Gradient in M101 Revisited. II. Electron Temperatures and Implications for the Nebular Abundance Scale. *Robert C. Kennicutt, Jr., Fabio Bresolin, & Donald R. Garnett.* 591, 801 (2003)

Unstable Cold Dark Matter and the Cuspy Halo Problem in Dwarf Galaxies. *F. J. Sánchez-Salcedo.* 591, L107 (2003)

Extraplanar Emission-Line Gas in Edge-on Spiral Galaxies. II. Optical Spectroscopy. *Scott T. Miller & Sylvain Veilleux.* 592, 79 (2003)

A Turbulent Origin for Flocculent Spiral Structure in Galaxies. II. Observations and Models of M33. *Bruce G. Elmegreen, Samuel N. Leitner, Debra Meloy Elmegreen, & Jean-Charles Cuillandre.* 593, 333 (2003)

High-Latitude H I in the Low Surface Brightness Galaxy UGC 7321. *L. D. Matthews & Kenneth Wood.* 593, 721 (2003)

The Tully-Fisher Relation of Barred Galaxies. *Stéphane Courteau, David R. Andersen, Matthew A. Bershady, Lauren A. MacArthur, & Hans-Walter Rix.* 594, 208 (2003)

Classifying X-Ray Sources in External Galaxies from X-Ray Colors. *A. H. Prestwich, J. A. Irwin, R. E. Kilgard, M. I. Krauss, A. Zezas, F. Primini, P. Kaaret, & B. Boroson.* 595, 719 (2003)

A Deep *Chandra* X-Ray Observation of NGC 1637. *Stefan Immler, Q. Daniel Wang, Douglas C. Leonard, & Eric M. Schlegel.* 595, 727 (2003)

Branch, Spur, and Feather Formation in Spiral Galaxies. *S. Chakrabarti, G. Laughlin, & F. H. Shu.* 596, 220 (2003)

High-Resolution Measurements of the Dark Matter Halo of NGC 2976: Evidence for a Shallow Density Profile. *Joshua D. Simon, Alberto D. Bolatto, Adam Leroy, & Leo Blitz.* 596, 957 (2003)

Extraplanar Emission-Line Gas in Edge-On Spiral Galaxies. I. Deep Emission-Line Imaging. *Scott T. Miller & Sylvain Veilleux.* 148, 383 (2003)

Angular Momentum Distribution of Hot Gas and Implications for Disk Galaxy Formation. *D. N. Chen, Y. P. Jing, & Kohji Yoshikawa.* 597, 35 (2003)

Mass and Dust in the Disk of a Spiral Lens Galaxy. *Joshua N. Winn, Patrick B. Hall, & Paul L. Schechter.* 597, 672 (2003)

Circumnulear Structures in the Interacting Seyfert Galaxy of NGC 1241: Kinematics and Optical/Infrared Morphology. *Rubén J. Díaz, Horacio Dottori, Nelson Vera-Villamizar, & Gustavo Carranza.* 597, 860 (2003)

Conservation Laws in Smooth Particle Hydrodynamics: The DEVA Code. *A. Serna, R. Domínguez-Tenreiro, & A. Sáiz.* 597, 878 (2003)

Galaxies under the Cosmic Microscope: A Gemini Multiobject Spectrograph Study of the Lensed Disk Galaxy 289 in A2218. *A. M. Swinbank, J. Smith, R. G. Bower, A. Bunker, I. Smail, R. S. Ellis, Graham P. Smith, J.-P. Kneib, M. Sullivan, & J. Allington-Smith.* 598, 162 (2003)

Chandra Observation of the Edge-on Galaxy NGC 3556 (M108): Violent Galactic Disk-Halo Interaction Revealed. *Q. Daniel Wang, Tara Chaves, & Judith A. Irwin.* 598, 969 (2003)

A *Chandra* Observation of The Diffuse Emission in the Face-on Spiral NGC 6946. *Eric M. Schlegel, S. S. Holt, & R. Petre.* 598, 982 (2003)

Internal Kinematics of Spiral Galaxies in Distant Clusters. *B. L. Ziegler, A. Böhm, K. Jäger, J. Heidt, & C. Möllenhoff.* 598, L87 (2003)

A Face-on Tully-Fisher Relation. *David R. Andersen & Matthew A. Bershady.* 599, L79 (2003)

GALAXIES: STARBURST

The Canada–United Kingdom Deep Submillimeter Survey. V. The Submillimeter Properties of Lyman Break Galaxies. *T. M. Webb, S. Eales, S. Foucaud, S. J. Lilly, H. McCracken, K. Adelberger, C. Steidel, A. Shapley, D. L. Clements, L. Dunne, O. Le Fèvre, M. Brodwin, & W. Gear.* 582, 6 (2003)

The Formation of Nuclear Rings in Barred Spiral Galaxies. *Michael W. Regan & Peter Teuben.* 582, 723 (2003)

Protoquasars: Physical States and Observable Properties. *Nozomu Kawakatu, Masayuki Umemura, & Masao Mori.* 583, 85 (2003)

A Search for "Dwarf" Seyfert Nuclei. VI. Properties of Emission-Line Nuclei in Nearby Galaxies. *Luis C. Ho, Alexei V. Filippenko, & Wallace L. W. Sargent.* 583, 159 (2003)

The Missing Link in Star Cluster Evolution. *Richard de Grijs, Nate Bastian, & Henney J. G. L. M. Lamers.* 583, L17 (2003)

Synthetic High-Resolution Line Spectra of Star-forming Galaxies below 1200 Å. *Carmelle Robert, Anne Pellerin, Alessandra Aloisi, Claus Leitherer, Charles Hoopes, & Timothy M. Heckman.* 144, 21 (2003)

COLA. II. Radio and Spectroscopic Diagnostics of Nuclear Activity in Galaxies. *E. A. Corbett, L. Kewley, P. N. Appleton, V. Charmandaris, M. A. Dopita, C. A. Heisler, R. P. Norris, A. Zezas, & A. Marston.* 583, 670 (2003)

Internal Dust Correction Factors for Star Formation Rates Derived for Dusty H II Regions and Starburst Galaxies. *M. A. Dopita, B. A. Groves, R. S. Sutherland, & L. J. Kewley.* 583, 727 (2003)

A Multiwavelength Approach to the Star Formation Rate Estimation in Galaxies at Intermediate Redshifts. *N. Cardiel, D. Elbaz, R. P. Schiavon, C. N. A. Willmer, D. C. Koo, A. C. Phillips, & J. Gallego.* 584, 76 (2003)

CG J1720−67.8: A Detailed Analysis of Optical and Infrared Properties of a New Ultracompact Group of Galaxies. *S. Temporin, R. Weinberger, G. Galaz, & F. Kerber.* 584, 239 (2003)

Spatially Resolved Millimeter Interferometry of SMM J02399−0136: A Very Massive Galaxy at $z = 2.8$. *Reinhard Genzel, Andrew J. Baker, Linda J. Tacconi, Dieter Lutz, Pierre Cox, Stéphane Guilloteau, & Alain Omont.* 584, 633 (2003)

Galactic Gamma-Ray Halo of the Nearby Starbust Galaxy NGC 253. *C. Itoh, R. Enomoto, S. Yanagita, T. Yoshida, & T. G. Tsuru.* 584, L65 (2003)

The Properties of Microjansky Radio Sources in the Hubble Deep Field–North, SSA 13, and SSA 22 Fields. *S. C. Chapman, A. J. Barger, L. L. Cowie, D. Scott, C. Borys, P. Capak, E. B. Fomalont, G. F. Lewis, E. A. Richards, A. T. Steffen, G. Wilson, & M. Yun.* 585, 57 (2003)

Orbital Decay and Tidal Disruption of a Star Cluster: Analytical Calculation. *Hideaki Mouri & Yoshiaki Taniguchi.* 585, 250 (2003)

No X-Ray–bright Type II Quasars among the Lyα Emitters. *S. Malhotra, J. X. Wang, J. E. Rhoads, T. M. Heckman, & C. A. Norman.* 585, L25 (2003)

The Discovery of a Very Narrow Line Star-forming Object at a Redshift of 5.66. *Yoshiaki Taniguchi, Masaru Ajiki, Takashi Murayama, Tohru Nagao, Sylvain Veilleux, David B. Sanders, Yutaka Komiyama, Yasuhiro Shioya, Shinobu S. Fujita, Yuko Kakazu, Sadanori Okamura, Hiroyasu Ando, Tetsuo Nishimura, Masahiko Hayashi, Ryusuke Ogasawara, & Shin-ichi Ichikawa.* 585, L97 (2003)

Azimuthal and Kinematic Segregation of Neutral and Molecular Gas in Arp 118: The Yin-Yang Galaxy NGC 1144. *P. N. Appleton, V. Charmandaris, Yu Gao, Tom Jarrett, & M. A. Bransford.* 586, 112 (2003)

Signatures of Hadronic Cosmic Rays in Starbursts? High-Energy Photons and Neutrinos from NGC 253. *Gustavo E. Romero & Diego F. Torres.* 586, L33 (2003)

Stellar Masses of Luminous Compact Blue Galaxies at Redshifts $z = 0.4$–1.2. *R. Guzmán, G. Östlin, D. Kunth, M. A. Bershady, D. C. Koo, & M. A. Pahre.* 586, L45 (2003)

Discovery of X-Ray Quasi-periodic Oscillations from an Ultraluminous X-Ray Source in M82: Evidence against Beaming. *Tod E. Strohmayer & Richard F. Mushotzky.* 586, L61 (2003)

CO $J = 7 \rightarrow 6$ Observations of NGC 253: Cosmic-Ray–heated Warm Molecular Gas. *C. M. Bradford, T. Nikola, G. J. Stacey, A. D. Bolatto, J. M. Jackson, M. L. Savage, J. A. Davidson, & S. J. Higdon.* 586, 891 (2003)

The Stellar Content of Henize 2-10 from Space Telescope Imaging Spectrograph Ultraviolet Spectroscopy. *Rupali Chandar, Claus Leitherer, Christy Tremonti, & Daniela Calzetti.* 586, 939 (2003)

Models for Evolution of Dusty and E/S0 Galaxies Seen in Multiband Surveys. *C. K. Xu, C. J. Lonsdale, D. L. Shupe, A. Franceschini, C. Martin, & D. Schiminovich.* 587, 90 (2003)

Very Long Baseline Array Continuum and H I Absorption Observations of the Ultraluminous Infrared Galaxy IRAS 17208−0014. *Emmanuel Momjian, Jonathan D. Romney, Christopher L. Carilli, Thomas H. Troland, & Gregory B. Taylor.* 587, 160 (2003)

A ^{12}CO Map of M82: The Significance of Warm Molecular Gas. *John S. Ward, Jonas Zmuidzinas, Andrew I. Harris, & Kate G. Isaak.* 587, 171 (2003)

Luminosity and Stellar Mass Functions of Local Star-forming Galaxies. *Pablo G. Pérez-González, Jesús Gallegeo, Jaime Zamorano, Almudena Alonso-Herrero, Armando Gil de Paz, & Alfonso Aragón-Salamanca.* 587, L27 (2003)

Molecular Gas in Candidate Double-barred Galaxies. II. Cooler, Less Dense Gas Associated with Stronger Central Concentrations. *Glen R. Petitpas & Christine D. Wilson.* 587, 649 (2003)

Candidate Tidal Dwarf Galaxies in the Compact Group CG J1720−67.8. *S. Temporin, R. Weinberger, G. Galaz, & F. Kerber.* 587, 660 (2003)

A Model for *SIRTF* Galaxy Counts. *Jeremy Mould.* 587, L93 (2003)

Rest-Frame Ultraviolet Spectra of $z \sim 3$ Lyman Break Galaxies. *Alice E. Shapley, Charles C. Steidel, Max Pettini, & Kurt L. Adelberger.* 588, 65 (2003)

A Submillimeter and Radio Survey of Gamma-Ray Burst Host Galaxies: A Glimpse into the Future of Star Formation Studies. *E. Berger, L. L. Cowie, S. R. Kulkarni, D. A. Frail, H. Aussel, & A. J. Barger.* 588, 99 (2003)

3.1 Micron H_2O Ice Absorption in LINER-Type Ultraluminous Infrared Galaxies with Cool Far-Infrared Colors: The Centrally Concentrated Nature of Their Deeply Buried Energy Sources. *Masatoshi Imanishi & Philip R. Maloney.* 588, 165 (2003)

A Multitransition CO Study of the Antennae Galaxies NGC 4038/9. *Ming Zhu, E. R. Seaquist, & Nario Kuno.* 588, 243 (2003)

New Light on the Stellar Populations in I Zw 18: Deep Near-Infrared Imaging. *Leslie K. Hunt, Trinh X. Thuan, & Yuri I. Izotov.* 588, 281 (2003)

CO Molecular Gas in Infrared-luminous Galaxies. *Lihong Yao, E. R. Seaquist, Nario Kuno, & Loretta Dunne.* 588, 771 (2003)

Models of the Morphology, Kinematics, and Star Formation History of the Prototypical Collisional Starburst System NGC 7714/7715=Arp 284. *Curtis Struck & Beverly J. Smith.* 589, 157 (2003)

Variability of Submillijansky Radio Sources. *C. L. Carilli, R. J. Ivison, & D. A. Frail.* 590, 192 (2003)

On the Rapidly Cooling Interior of Supergalactic Winds. *S. Silich, G. Tenorio-Tagle, & C. Muñoz-Tuñón.* 590, 791 (2003)

Radio-selected Galaxis in Very Rich Clusters at $z \leq 0.25$. I. Multiwavelength Observations and Data Reduction Techniques. *G. E. Morrison, F. N. Owen, M. J. Ledlow, W. C. Keel, J. M. Hill, W. Voges, & T. Herter.* 146, 267 (2003)

A *Chandra* X-Ray Study of NGC 1068. II. The Luminous X-Ray Source Population. *David A. Smith & Andrew S. Wilson.* 591, 138 (2003)

Chandra Observations of Extended X-Ray Emission in Arp 220. *J. C. McDowell, D. L. Clements, S. A. Lamb, S. Shaked, N. C. Hearn, L. Colina, C. Mundell, K. Borne, A. C. Baker, & S. Arribas.* 591, 154 (2003)

On the Origin of Lyα Blobs at High Redshift: Kinematic Evidence of a Hyperwind Galaxy at $z = 3.1$. *Youichi Ohyama, Yoshiaki Taniguchi, Koji S. Kawabata, Yasuhiro Shioya, Takashi Murayama, Tohru Nagao, Tadafumi Takata, Masanori Iye, & Michitoshi Yoshida.* 591, L9 (2003)

QSOs Associated with Messier 82. *E. Margaret Burbidge, Geoffrey Burbidge, Halton C. Arp, & Stefano Zibetti.* 591, 690 (2003)

INTEGRAL Spectroscopy of IRAS 17208−0014: Implications for the Evolutionary Scenarios of Ultraluminous Infrared Galaxies. *Santiago Arribas & Luis Colina.* 591, 791 (2003)

Spatial Analysis of the Hα Emission in the Local Star-forming UCM Galaxies. *Pablo G. Pérez-González, Jaime Zamorano, Jesús Gallego, Alfonso Aragón-Salamanca, & Armando Gil de Paz.* 591, 827 (2003)

Discovery of Bright Variable X-Ray Sources in NGC 569 with *Chandra*. *K. Heike, H. Awaki, Y. Misao, K. Hayashida, & K. A. Weaver.* 591, L99 (2003)

Palomar/Las Campanas Imaging Atlas of Blue Compact Dwarf Galaxies. I. Images and Integrated Photometry. *A. Gil de Paz, B. F. Madore, & O. Pevunova.* 147, 29 (2003)

A *Chandra* Survey of the Nearest Ultraluminous Infrared Galaxies: Obscured Active Galactic Nuclei or Superstarbursts? *A. Ptak, T. Heckman, N. A. Levenson, K. Weaver, & D. Strickland.* 592, 782 (2003)

Nuclear Activity and Massive Star Formation in the Low-Luminosity Active Galactic Nucleus NGC 4303: *Chandra* X-Ray Observations. *E. Jiménez-Bailón, M. Santos-Lleó, J. M. Mas-Hesse, M. Guainazzi, L. Colina, M. Cerviño, & Rosa M. González Delgado.* 593, 127 (2003)

Deep Near-Infrared Mapping of Young and Old Stars in Blue Compact Dwarf Galaxies. *Luz M. Cairós, Nicola Caon, Polychronis Papaderos, Kai Noeske, Jose M. Vílchez, Begoña García Lorenzo, & Casiana Muñoz-Tuñón.* 593, 312 (2003)

Nascent Starbursts in Synchrotron-deficient Galaxies with Hot Dust. *H. Roussel, G. Helou, R. Beck, J. J. Condon, A. Bosma, K. Matthews, & T. H. Jarrett.* 593, 733 (2003)

A New Method to Map Flares in Quasars. *Atsunori Yonehara, Shin Mineshige, Yoh Takei, George Chartas, & Edwin L. Turner.* 594, 107 (2003)

The [C II] 158 Micron Line Deficit in Ultraluminous Infrared Galaxies Revisited. *M. L. Luhman, S. Satyapal, J. Fischer, M. G. Wolfire, E. Sturm, C. C. Dudley, D. Lutz, & R. Genzel.* 594, 758 (2003)

Chandra Observations of Expanding Shells in the Dwarf Starburst Galaxy NGC 3077. *Jürgen Ott, Crystal L. Martin, & Fabian Walter.* 594, 776 (2003)

Physical Conditions and Star Formation Activity in the Intragroup Medium of Stephan's Quintet. *C. K. Xu, N. Lu, J. J. Condon, M. Dopita, & R. J. Tuffs.* 595, 665 (2003)

Classifying X-Ray Sources in External Galaxies from X-Ray Colors. *A. H. Prestwich, J. A. Irwin, R. E. Kilgard, M. I. Krauss, A. Zezas, F. Primini, P. Kaaret, & B. Boroson.* 595, 719 (2003)

Abundances in the Neutral Interstellar Medium of I Zw 18 from *Far Ultraviolet Spectroscopic Explorer* Observations. *A. Aloisi, S. Savaglio, T. M. Heckman, C. G. Hoopes, C. Leitherer, & K. R. Sembach.* 595, 760 (2003)

Kinematic Masses of Super–Star Clusters in M82 from High-Resolution Near-Infrared Spectroscopy. *Nate McCrady, Andrea M. Gilbert, & James R. Graham.* 596, 240 (2003)

Nonnuclear Hyper/Ultralumious X-Ray Sources in the Starbursting Carthwheel Ring Galaxy. *Yu Gao, Q. Daniel Wang, P. N. Appleton, & Ray A. Lucas.* 596, L171 (2003)

Cooling in Coronal Gas in the M82 Starburst Superwind. *Charles G. Hoopes, Timothy M. Heckman, David K. Strickland, & J. Christopher Howk.* 596, L175 (2003)

Discovery of a Double Ring in the Dwarf Galaxy Markarian 409. *A. Gil de Paz, B. F. Madore, K. Noeske, L. M. Cairós, P. Papaderos, & S. A. Silich.* 596, L179 (2003)

Analysis of the Interaction Effects in the Southern Galaxy Pair Tol 1238−364 and ESO 381-G009. *S. Temporin, S. Ciroi, P. Rafanelli, M. Radovich, J. Vennik, G. M. Richter, & K. Birkle.* 148, 353 (2003)

Lyman Break Galaxies and Reionization of the Universe. *A. Gayler Harford & Nickolay Y. Gnedin.* 597, 74 (2003)

The First Deep Advanced Camera for Surveys Lyα Images of Local Starburst Galaxies. *Daniel Kunth, Claus Leitherer, J. Miguel Mas-Hesse, Göran Östlin, & Artashes Petrosian.* 597, 263 (2003)

Dependence of Dust Obscuration on Star Formation Rates in Galaxies. *J. Afonso, A. Hopkins, B. Mobasher, & C. Almeida.* 597, 269 (2003)

Radio Constraints on the Starburst Ages of Two Wolf-Rayet Galaxies. *Q. F. Yin, J. H. Huang, & W. Zheng.* 597, 274 (2003)

Supergalactic Winds Driven by Multiple Super–Star Clusters. *Guillermo Tenorio-Tagle, Sergiy Silich, & Casiana Munoz-Tunon.* 597, 279 (2003)

How Many Active Galaxies and QSOs Will Future Space Missions Detect? *Paola Andreani, Luigi Spinoglio, & Matthew A. Malkan.* 597, 759 (2003)

Molecular Hydrogen Excitation in Ultraluminous Infrared Galaxies. *R. I. Davies, A. Sternberg, M. Lehnert, & L. E. Tacconi-Garman.* 597, 907 (2003)

The Spectral Energy Distributions of Infant Super–Star Clusters in Henize 2-10 from 7 Millimeters to 6 Centimeters. *Kelsey E. Johnson & Henry A. Kobulnicky.* 597, 923 (2003)

Star Formation and X-Ray Emission in Distant Star-Forming Galaxies. *Judith G. Cohen.* 598, 288 (2003)

Lyα Emission in Starbursts: Implications for Galaxies at High Redshift. *J. M. Mas-Hesse, D. Kunth, G. Tenorio-Tagle, C. Leitherer, R. J. Terlevich, & E. Terlevich.* 598, 858 (2003)

The Influence of Supershells and Galactic Outflows on the Escape of Ionizing Radiation from Dwarf Starburst Galaxies. *Akima Fujita, Crystal L. Martin, Mordecai-Mark Mac Low, & Tom Abel.* 599, 50 (2003)

Hubble Space Telescope Images of Submillimeter Sources: Large Irregular Galaxies at High Redshift. *S. C. Chapman, R. Windhorst, S. Odewahn, H. Yan, & C. Conselice.* 599, 92 (2003)

The Nature of Starburst Activity in M82. *N. M. Förster Schreiber, R. Genzel, D. Lutz, & A. Sternberg.* 599, 193 (2003)

Starburst Galaxies: Why the Calzetti Dust Extinction Law? *Jörg Fischera, Michael A. Dopita, & Ralph S. Sutherland.* 599, L21 (2003)

Gas and Dust in the Extremely Red Object ERO J164502+4626.4. *Thomas R. Greve, Rob J. Ivison, & Padeli P. Papadopoulos.* 599, 839 (2003)

Star Formation Rate Indicators in the Sloan Digital Sky Survey. *A. M. Hopkins, C. J. Miller, R. C. Nichol, A. J. Connolly, M. Bernardi, P. L. Gómez, T. Goto, C. A. Tremonti, J. Brinkmann, Ž. Ivezić, & D. Q. Lamb.* 599, 971 (2003)

The DEEP Groth Strip Survey. VII. The Metallicity of Field Galaxies at $0.26 < z < 0.82$ and the Evolution of the Luminosity-Metallicity Relation. *Henry A. Kobulnicky, Christopher N. A. Willmer, Andrew C. Phillips, David C. Koo, S. M. Faber, Benjamin J. Weiner, Vicki L. Sarajedini, Luc Simard, & Nicole P. Vogt.* 599, 1006 (2003)

Measuring Global Galaxy Metallicities Using Emission-Line Equivalent Widths. *Henry A. Kobulnicky & Andrew C. Phillips.* 599, 1031 (2003)

Radio Emission Associated with Ultraluminous X-Ray Sources in the Galaxy Merger NGC 3256. *S. G. Neff, James S. Ulvestad, & S. D. Campion.* 599, 1043 (2003)

ADEMIS: A Library of Evolutionary Models for Emission-Line Galaxies. I. Dust-free Models. *Gladis Margis C., Luc Binette, & Gustavo Bruzual A.* 149, 313 (2003)

GALAXIES: STAR CLUSTERS

The Missing Link in Star Cluster Evolution. *Richard de Grijs, Nate Bastian, & Henney J. G. L. M. Lamers.* 583, L17 (2003)

Orbital Decay and Tidal Disruption of a Star Cluster: Analytical Calculation. *Hideaki Mouri & Yoshiaki Taniguchi.* 585, 250 (2003)

Intergalactic Globular Clusters and the Faint End of the Galaxy Number Counts in A1656 (Coma). *A. Marín-Franch & A. Aparicio.* 585, 714 (2003)

Advanced Camera for Surveys Observations of Young Star Clusters in the Interacting Galaxy UGC 10214. *H. D. Tran, M. Sirianni, H. C. Ford, G. D. Illingworth, M. Clampin, G. Hartig, R. H. Becker, R. L. White, F. Bartko, N. Benítez, J. P. Blakeslee, R. Bouwens, T. J. Broadhurst, R. Brown, C. Burrows, E. Cheng, N. Cross, P. D. Feldman, M. Franx, D. A. Golimowski, C. Gronwall, L. Infante, R. A. Kimble, J. Krist, M. Lesser, D. Magee, A. R. Martel, Wm. J. McCann, G. R. Meurer, G. Miley, M. Postman, P. Rosati, W. B. Sparks, & Z. Tsvetanov.* 585, 750 (2003)

The Low Mass X-Ray Binary–Globular Cluster Connection. II. NGC 4472 X-Ray Source Properties and Source Catalogs. *Thomas J. Maccarone, Arunav Kundu, & Stephen E. Zepf.* 586, 814 (2003)

The Stellar Content of Henize 2-10 from Space Telescope Imaging Spectrograph Ultraviolet Spectroscopy. *Rupali Chandar, Claus Leitherer, Christy Tremonti, & Daniela Calzetti.* 586, 939 (2003)

An X-Ray Investigation of the NGC 346 Field in the Small Magellanic Cloud. II. The Field Population. *Y. Nazé, J. M. Hartwell, I. R. Stevens, J. Manfroid, S. Marchenko, M. F. Corcoran, A. F. J. Moffat, & G. Skalkowski.* 586, 983 (2003)

Effects of the Dissolution of Low-Concentration Globular Clusters on the Evolution of Globular Cluster Systems. *E. Vesperini & S. E. Zepf.* 587, L97 (2003)

Blue Horizontal-Branch Stars in Old, Metal-rich Stellar Systems. *Ruth C. Peterson, Bruce W. Carney, Ben Dorman, Elizabeth M. Green, Wayne Landsman, James Liebert, Robert W. O'Connell, & Robert T. Rood.* 588, 299 (2003)

The Density Profile of Cluster-Scale Dark Matter Halos. *Håkon Dahle, Steen Hannestad, & Jesper Sommer-Larsen.* 588, L73 (2003)

Substructure in the Andromeda Galaxy Globular Cluster System. *K. M. Perrett, D. A. Stiff, D. A. Hanes, & T. J. Bridges.* 589, 790 (2003)

Some Constraints on the Effects of Age and Metallicity on the Low-Mass X-Ray Binary Formation Rate. *Arunav Kundu, Thomas J. Maccarone, Stephen E. Zepf, & Thomas H. Puzia.* 589, L81 (2003)

A Turbulent Origin for Flocculent Spiral Structure in Galaxies. *Bruce G. Elmegreen, Debra Meloy Elmegreen, & Samuel N. Leitner.* 590, 271 (2003)

Dynamics of the Globular Cluster System Associated with M49 (NGC 4472): Cluster Orbital Properties and the Distribution of Dark Matter. *Patrick Côté, Dean E. McLaughlin, Judith G. Cohen, & John P. Blakeslee.* 591, 850 (2003)

The Ages and Abundances of a Sample of Globular Clusters in M49 (NGC 4472). *Judith G. Cohen, J. P. Blakeslee, & P. Côté.* 592, 866 (2003)

A Turbulent Origin for Flocculent Spiral Structure in Galaxies. II. Observations and Models of M33. *Bruce G. Elmegreen, Samuel N. Leitner, Debra Meloy Elmegreen, & Jean-Charles Cuillandre.* 593, 333 (2003)

On the Size Difference between Red and Blue Globular Clusters. *Soren S. Larsen & Jean P. Brodie.* 593, 340 (2003)

Modeling the Dynamical Evolution of the M87 Globular Cluster System. *E. Vesperini, S. E. Zepf, A. Kundu, & K. M. Ashman.* 593, 760 (2003)

Low-Mass X-Ray Binaries and Globular Clusters in Early-Type Galaxies. *Craig L. Sarazin, Arunav Kundu, Jimmy A. Irwin, Gregory R. Sivakoff, Elizabeth L. Blanton, & Scott W. Randall.* 595, 743 (2003)

Kinematic Masses of Super–Star Clusters in M82 from High-Resolution Near-Infrared Spectroscopy. *Nate McCrady, Andrea M. Gilbert, & James R. Graham.* 596, 240 (2003)

Starbursts from the Strong Compression of Galactic Molecular Clouds due to the High Pressure of the Intracluster Medium. *Kenji Bekki & Warrick J. Couch.* 596, L13 (2003)

Dynamical Friction on Star Clusters near the Galactic Center. *Sungsoo S. Kim & Mark Morris.* 597, 312 (2003)

The Spectral Energy Distributions of Infant Super–Star Clusters in Henize 2-10 from 7 Millimeters to 6 Centimeters. *Kelsey E. Johnson & Henry A. Kobulnicky.* 597, 923 (2003)

Hubble Space Telescope Observations of Three Very Young Star Clusters in the Small Magellanic Cloud. *Letizia Stanghellini, Eva Villaver, Richard A. Shaw, & Max Mutchler.* 598, 1000 (2003)

Galactic-Field Initial Mass Functions of Massive Stars. *Pavel Kroupa & Carsten Weidner.* 598, 1076 (2003)

Radio Emission Associated with Ultraluminous X-Ray Sources in the Galaxy Merger NGC 3256. *S. G. Neff, James S. Ulvestad, & S. D. Campion.* 599, 1043 (2003)

Hubble Space Telescope Observations of Novae in M49. *Laura Ferrarese, Patrick Côté, & Andrés Jordán.* 599, 1302 (2003)

The Discovery of Globular Clusters in the Protospiral Galaxy NGC 2915: Implications for Hierarchical Galaxy Evolution. *Gerhardt R. Meurer, J. P. Blakeslee, M. Sirianni, H. C. Ford, G. D. Illingworth, N. Benítez, M. Clampin, F. Menanteau, H. D. Tran, R. A. Kimble, G. F. Hartig, D. R. Ardila, F. Bartko, R. J. Bouwens, T. J. Broadhurst, R. A. Brown, C. J. Burrows, E. S. Cheng, N. J. G. Cross, P. D. Feldman, D. A. Golimowski, C. Gronwall, L. Infante, J. E. Krist, M. P. Lesser, A. R. Martel, G. K. Miley, M. Postman, P. Rosati, W. B. Sparks, Z. I. Tsvetanov, R. L. White, & W. Zheng.* 599, L83 (2003)

GALAXIES: STATISTICS

Axisymmetric Dynamical Models of the Central Regions of Galaxies. *Karl Gebhardt, Douglas Richstone, Scott Tremaine, Tod R. Lauer, Ralf Bender, Gary Bower, Alan Dressler, S. M. Faber, Alexei V. Filippenko, Richard Green, Carl Grillmair, Luis C. Ho, John Kormendy, John Magorrian, & Jason Pinkney.* 583, 92 (2003)

The Overdensities of Galaxy Environments as a Function of Luminosity and Color. *David W. Hogg, Michael R. Blanton, Daniel J. Eisenstein, James E. Gunn, David J. Schlegel, Idit Zehavi, Neta A. Bahcall, Jon Brinkmann, Istvan Csabai, Donald P. Schneider, David H. Weinberg, & Donald G. York.* 585, L5 (2003)

The Luminosity Function of *IRAS* Point Source Catalog Redshift Survey Galaxies. *Tsutomu T. Takeuchi, Kohji Yoshikawa, & Takako T. Ishii.* 587, L89 (2003)

Detection of Nonrandom Galaxy Orientations in X-Ray Subclusters of the Coma Cluster. *Manfred Kitzbichler & W. Saurer.* 590, L9 (2003)

The Galaxy Luminosity Function and Luminosity Density at Redshift $z = 0.1$. *Michael R. Blanton, David W. Hogg, Neta A. Bahcall, J. Brinkmann, Malcolm Britton, Andrew J. Connolly, István Csabai, Masataka Fukugita, Jon Loveday, Avery Meiksin, Jeffrey A. Munn, R. C. Nichol, Sadanori Okamura, Thomas Quinn, Donald P. Schneider, Kazuhiro Shimasaku, Michael A. Strauss, Max Tegmark, Michael S. Vogeley, & David H. Weinberg.* 592, 819 (2003)

The Broadband Optical Properties of Galaxies with Redshifts $0.02 < z < 0.22$. *Michael R. Blanton, David W. Hogg, Neta A. Bahcall, Ivan K. Baldry, J. Brinkmann, István Csabai, Daniel Eisenstein, Masataka Fukugita, James E. Gunn, Željko Ivezić, D. Q. Lamb, Robert H. Lupton, Jon Loveday, Jeffrey A. Munn, R. C. Nichol, Sadanori Okamura, David J. Schlegel, Kazuhiro Shimasaku, Michael A. Strauss, Michael S. Vogeley, & David H. Weinberg.* 594, 186 (2003)

On the Invariant Distribution of Galaxies in the r_e-$\langle\mu\rangle_e$ Plane out to $z = 0.64$. *F. La Barbera, G. Busarello, P. Merluzzi, M. Massarotti, & M. Capaccioli.* 595, 127 (2003)

Optimal Moments for the Analysis of Peculiar Velocity Surveys. II. Testing. *Hume A. Feldman, Richard Watkins, Adrian L. Melott, & Scott W. Chambers.* 599, 820 (2003)

GALAXIES: STELLAR CONTENT

A New Extragalactic Distance Determination Method Using Flux-weighted Gravity of Late B and Early A Supergiants. *Rolf P. Kudritzki, Fabio Bresolin, & Nobert Przybilla.* 582, L83 (2003)

Synthetic High-Resolution Line Spectra of Star-forming Galaxies below 1200 Å. *Carmelle Robert, Anne Pellerin, Alessandra Aloisi, Claus Leitherer, Charles Hoopes, & Timothy M. Heckman.* 144, 21 (2003)

Measuring Distances and Probing the Unresolved Stellar Populations of Galaxies Using Infrared Surface Brightness Fluctuations. *Joseph B. Jensen, John L. Tonry, Brian J. Barris, Rodger I. Thompson, Michael C. Liu, Marcia J. Rieke, Edward A. Ajhar, & John P. Blakeslee.* 583, 712 (2003)

A Multiwavelength Approach to the Star Formation Rate Estimation in Galaxies at Intermediate Redshifts. *N. Cardiel, D. Elbaz, R. P. Schiavon, C. N. A. Willmer, D. C. Koo, A. C. Phillips, & J. Gallego.* 584, 76 (2003)

Galaxy Star Formation as a Function of Environment in the Early Data Release of the Sloan Digital Sky Survey. *Percy L. Gomez, Robert C. Nichol, Christopher L. Miller, Michael L. Balogh, Tomotsugu Goto, Ann I. Zabludoff, A. Kathy Romer, Mariengela Bernardi, Ravi Sheth, Andrew M. Hopkins, Francisco J. Castander, Andrew J. Connolly, Donald P. Schneider, Jon Brinkmann, Don Q. Lamb, Mark SubbaRao, & Donald G. York.* 584, 210 (2003)

Far-Ultraviolet Emission from Elliptical Galaxies at $z = 0.33$. *Thomas M. Brown, Henry C. Ferguson, Ed Smith, Charles W. Bowers, Randy A. Kimble, Alvio Renzini, & R. Michael Rich.* 584, L69 (2003)

A First Estimate of the Baryonic Mass Function of Galaxies. *Eric F. Bell, Daniel H. McIntosh, Neal Katz, & Martin D. Weinberg.* 585, L117 (2003)

The Magnesium–Velocity Dispersion Relation and the Genesis of Early-Type Galaxies. *Guy Worthey & Maela Collobert.* 586, 17 (2003)

Stellar Masses of Luminous Compact Blue Galaxies at Redshifts $z = 0.4$–1.2. *R. Guzmán, G. Östlin, D. Kunth, M. A. Bershady, D. C. Koo, & M. A. Pahre.* 586, L45 (2003)

The Stellar Content of Henize 2-10 from Space Telescope Imaging Spectrograph Ultraviolet Spectroscopy. *Rupali Chandar, Claus Leitherer, Christy Tremonti, & Daniela Calzetti.* 586, 939 (2003)

The Evolution of the Global Stellar Mass Density at $0 < z < 3$. *Mark Dickinson, Casey Papovich, Henry C. Ferguson, & Tamás Budavári.* 587, 25 (2003)

New Light on the Stellar Populations in I Zw 18: Deep Near-Infrared Imaging. *Leslie K. Hunt, Trinh X. Thuan, & Yuri I. Izotov.* 588, 281 (2003)

The Distance to the Large Magellanic Cloud Cluster NGC 1866 and the Surrounding Field. *M. Salaris, S. Percival, E. Brocato, G. Raimondo, & A. R. Walker.* 588, 801 (2003)

Clues to the Evolution of the Carina Dwarf Spheroidal Galaxy from the Color Distribution of Its Red Giant Stars. *Luca Rizzi, Enrico V. Held, Gianpaolo Bertelli, & Ivo Saviane.* 589, L85 (2003)

Discovery of Latent Star Formation in the Extended H I Gas around the Local Group Dwarf Irregular Galaxy NGC 6822. *Yutaka Komiyama, Sadanori Okamura, Masafumi Yagi, Hisanori Furusawa, Mamoru Doi, Masaru Hamabe, Katsumi Imi, Masahiko Kimura, Satoshi Miyazaki, Fumiaki Nakata, Norio Okada, Masami Ouchi, Maki Sekiguchi, Kazuhiro Shimasaku, Naoki Yasuda, Nobuo Arimoto, & Chisato Ikuta.* 590, L17 (2003)

Differences in Carbon and Nitrogen Abundances between Field and Cluster Early-Type Galaxies. *P. Sánchez-Blázquez, J. Gorgas, N. Cardiel, J. Cenarro, & J. J. González.* 590, L91 (2003)

Age and Abundance Discrimination in Old Stellar Populations Using Mid-Ultraviolet Colors. *Ben Dorman, Robert W. O'Connell, & Robert T. Rood.* 591, 878 (2003)

Evidence of a Significant Intermediate-Age Population in the M31 Halo from Main-Sequence Photometry. *Thomas M. Brown, Henry C. Ferguson, Ed Smith, Randy A. Kimble, Allen V. Sweigart, Alvio Renzini, R. Michael Rich, & Don A. VandenBerg.* 592, L17 (2003)

Deep *Hubble Space Telescope* Imaging of IC 1613. II. The Star Formation History. *Evan D. Skillman, Eline Tolstoy, Andrew A. Cole, Andrew E. Dolphin, Abhijit Saha, J. S. Gallagher, R. C. Dohm-Palmer, & Mario Mateo.* 596, 253 (2003)

Anomalous Evolution of the Dwarf Galaxy HIPASS J1321−31. *Barton J. Pritzl, Patricia M. Knezek, John S. Gallagher III, Marco Grossi, Mike J. Disney, Robert F. Minchin, Kenneth C. Freeman, Eline Tolstoy, & Abi Saha.* 596, L47 (2003)

The Environment of Active Galactic Nuclei in the Sloan Digital Sky Survey. *Christopher J. Miller, Robert C. Nichol, Percy L. Gómez, Andrew M. Hopkins, & Mariangela Bernardi.* 597, 142 (2003)

The First Deep Advanced Camera for Surveys Lyα Images of Local Starburst Galaxies. *Daniel Kunth, Claus Leitherer, J. Miguel Mas-Hesse, Göran Östlin, & Artashes Petrosian.* 597, 263 (2003)

The Asymptomatic Giant Branch of NGC 205: The Characteristics of Carbon Stars and M Giants Identified From JHK' Images. *T. J. Davidge.* 597, 289 (2003)

Large Magellanic Cloud Bar: Evidence of a Warped Bar. *Annapurni Subramaniam.* 598, L19 (2003)

Galactic-Field Initial Mass Functions of Massive Stars. *Pavel Kroupa & Carsten Weidner.* 598, 1076 (2003)

The Rest-Frame Optical Luminosity Density, Color, and Stellar Mass Density of the Universe from $z = 0$ to $z = 3$. *Gregory Rudnick, Hans-Walter*

Rix, Marijn Franx, Ivo Labbé, Michael Blanton, Emanuele Daddi, Natascha M. Förster Schreiber, Alan Moorwood, Huub Röttgering, Ignacio Trujillo, Arjen van de Wel, Paul van der Werf, Pieter G. van Dokkum, & Lottie van Starkenburg. 599, 847 (2003)

A Two Micron All Sky Survey All-Sky View of the Sagittarius Dwarf Galaxy. I. Morphology of the Sagittarius Core and Tidal Arms. *Steven R. Majewski, M. F. Skrutskie, Martin D. Weinberg, & James C. Ostheimer.* 599, 1082 (2003)

The Optical and Near-Infrared Properties of Galaxies. I. Luminosity and Stellar Mass Functions. *Eric F. Bell, Daniel H. McIntosh, Neal Katz, & Martin D. Weinberg.* 149, 289 (2003)

GALAXIES: STRUCTURE

Lensing and the Centers of Distant Early-Type Galaxies. *Charles R. Keeton.* 582, 17 (2003)

Molecular Gas and Dust at $z = 2.6$ in SMM J14011+0252: A Strongly Lensed Ultraluminous Galaxy, Not a Huge Massive Disk. *D. Downes & P. M. Solomon.* 582, 37 (2003)

Central Mass Concentration and Bar Dissolution in Nearby Spiral Galaxies. *Mousumi Das, Peter J. Teuben, Stuart N. Vogel, Michael W. Regan, Kartik Sheth, Andrew I. Harris, & William H. Jefferys.* 582, 190 (2003)

Tidally Triggered Star Formation in Close Pairs of Galaxies. II. Constraints on Burst Strengths and Ages. *Elizabeth Barton Gillespie, Margret J. Geller, & Scott J. Kenyon.* 582, 668 (2003)

Structure of Disk-dominated Galaxies. II. Bulge/Disk Parameters, Simulations, and Secular Evolution. *Lauren A. MacArthur, Stephanie Courteau, & Jon A. Holtzman.* 582, 689 (2003)

The Formation of Nuclear Rings in Barred Spiral Galaxies. *Michael W. Regan & Peter Teuben.* 582, 723 (2003)

Galactic Bulges from *Hubble Space Telescope* Near-Infrared Camera Multi-Object Spectrometer Observations: The Lack of $r^{1/4}$ Bulges. *Marc Balcells, Alister W. Graham, Lilian Domínguez-Palmero, & Reynier F. Peletier.* 582, L79 (2003)

The Structure and Dynamics of Luminous and Dark Matter in the Early-Type Lens Galaxy of 0047−281 at $z = 0.485$. *Léon V. E. Koopmans & Tommaso Treu.* 583, 606 (2003)

NGC 4608 and NGC 5701: Barred Galaxies without Disks? *D. A. Gadotti & R. E. de Souza.* 583, L75 (2003)

Schechter versus Schechter: Subarcsecond Gravitational Lensing and Inner Halo Profiles. *Chung-Pei Ma.* 584, L1 (2003)

The Structural Evolution of Substructure. *Eric Hayashi, Julio F. Navarro, James E. Taylor, Joachim Stadel, & Thomas Quinn.* 584, 541 (2003)

Thermodynamic Description of a Family of Partially Relaxed Stellar Systems. *G. Bertin & M. Trenti.* 584, 729 (2003)

The Fundamental Plane at $z = 1.27$: First Calibration of the Mass Scale of Red Galaxies at Redshifts $z > 1$. *Pieter G. van Dokkum & S. A. Stanford.* 585, 78 (2003)

Dark Matter within High Surface Brightness Spiral Galaxies. *Thilo Kranz, Adrianne Slyz, & Hans-Walter Rix.* 586, 143 (2003)

Ultraviolet-Optical Pixel Maps of Face-on Spiral Galaxies: Clues for Dynamics and Star Formation Histories. *Paul B. Eskridge, Jay A. Frogel, Violet A. Taylor, Rogier A. Windhorst, Stephen C. Odewahn, Claudia A. T. C. Chiarenza, Christopher J. Conselice, Richard de Grijs, Lynn D. Matthews, Robert W. O'Connell, & John S. Gallagher III.* 586, 923 (2003)

Investigation of the Possible Third Image and Mass Models of the Gravitational Lens PMN J1632−0033. *Joshua N. Winn, David Rusin, & Christopher S. Kochanek.* 587, 80 (2003)

H I Absorption toward Ultracompact H II Regions: Distances and Galactic Structure. *Vincent L. Fish, Mark J. Reid, David J. Wilner, & Ed Churchwell.* 587, 701 (2003)

Disk-Bulge-Halo Models for the Andromeda Galaxy. *Lawrence M. Widrow, Kathryn M. Perrett, & Sherry H. Suyu.* 588, 311 (2003)

Draco: A Failure of the Tidal Model. *Ralf S. Klessen, Eva K. Grebel, & Daniel Harbeck.* 589, 798 (2003)

Cl 1358+62: Characterizing the Physical Properties of Cluster Galaxies at $z = 0.33$. *Kim-Vy H. Tran, Luc Simard, Garth Illingworth, & Marijn Franx.* 590, 238 (2003)

Galaxy Formation in Triaxial Halos: Black Hole–Bulge–Dark Halo Correlation. *Amr A. El-Zant, Isaac Shlosman, Mitchell C. Begelman, & Juhan Frank.* 590, 641 (2003)

An Imaging Survey of Early-Type Barred Galaxies. *Peter Erwin & Linda S. Sparke.* 146, 299 (2003)

The Leo I Cloud: Secular Nuclear Evolution of NGC 3379, NGC 3384, and NGC 3368? *O. K. Sil'chenko, A. V. Moiseev, V. L. Afanasiev, V. H. Chavushyan, & J. R. Valdes.* 591, 185 (2003)

Simulations of Galaxy Formation in a Λ Cold Dark Matter Universe. I. Dynamical and Photometric Properties of a Simulated Disk Galaxy. *Mario G. Abadi, Julio F. Navarro, Matthias Steinmetz, & Vincent R. Eke.* 591, 499 (2003)

Extraplanar Emission-Line Gas in Edge-on Spiral Galaxies. II. Optical Spectroscopy. *Scott T. Miller & Sylvain Veilleux.* 592, 79 (2003)

On Large-Scale Magnetic Field Reversals in the Outer Galaxy. *J. C. Brown, A. R. Taylor, R. Wielebinski, & P. Mueller.* 592, L29 (2003)

The Relationship between Stellar Light Distributions of Galaxies and Their Formation Histories. *Christopher J. Conselice.* 147, 1 (2003)

On the Origin of the Inner Structure of Halos. *Alberto Manrique, Andreu Raig, Eduard Salvador-Solé, Teresa Sanchis, & José María Solanes.* 593, 26 (2003)

Deep Near-Infrared Mapping of Young and Old Stars in Blue Compact Dwarf Galaxies. *Luz M. Cairós, Nicola Caon, Polychronis Papaderos, Kai Noeske, Jose M. Vílchez, Begoña García Lorenzo, & Casiana Muñoz-Tuñón.* 593, 312 (2003)

A Turbulent Origin for Flocculent Spiral Structure in Galaxies. II. Observations and Models of M33. *Bruce G. Elmegreen, Samuel N. Leitner, Debra Meloy Elmegreen, & Jean-Charles Cuillandre.* 593, 333 (2003)

Mass-to-Light Ratios of 2dF Galaxies. *Tereasa G. Brainerd & Michael A. Specian.* 593, L7 (2003)

Cloning Dropouts: Implications for Galaxy Evolution at High Redshift. *Rychard Bouwens, Tom Broadhurst, & Garth Illingworth.* 593, 640 (2003)

The Tully-Fisher Relation of Barred Galaxies. *Stéphane Courteau, David R. Andersen, Matthew A. Bershady, Lauren A. MacArthur, & Hans-Walter Rix.* 594, 208 (2003)

Self-similar Models for the Mass Profiles of Early-Type Lens Galaxies. *D. Rusin, C. S. Kochanek, & C. R. Keeton.* 595, 29 (2003)

The Origin of Cores and Density Profiles of Gaseous Baryonic Structures. *Steen H. Hansen & Joachim Stadel.* 595, L37 (2003)

Long-lived Double-barred Galaxies: Critical Mass and Length Scales. *Amr A. El-Zant & Isaac Shlosman.* 595, L41 (2003)

Hubble Space Telescope Imaging in the *Chandra* Deep Field–South. III. Quantitative Morphology of the 1 Million Second *Chandra* Counterparts and Comparison with the Field Population. *N. A. Grogin, A. M. Koekemoer, E. J. Schreier, J. Bergeron, R. Giacconi, G. Hasinger, L. Kewley, C. Norman, P. Rosati, P. Tozzi, & A. Zirm.* 595, 685 (2003)

Galaxy Formation: Cold Dark Matter, Feedback, and the Hubble Sequence. *Jesper Sommer-Larsen, Martin Götz, & Laura Portinari.* 596, 47 (2003)

Branch, Spur, and Feather Formation in Spiral Galaxies. *S. Chakrabarti, G. Laughlin, & F. H. Shu.* 596, 220 (2003)

A *Hubble Space Telescope* Survey of Extended [O III] λ5007 Emission in a Far-Infrared Selected Sample of Seyfert Galaxies: Observations. *H. R. Schmitt, J. L. Donley, R. R. J. Antonucci, J. B. Hutchings, & A. L. Kinney.* 148, 327 (2003)

Extraplanar Emission-Line Gas in Edge-On Spiral Galaxies. I. Deep Emission-Line Imaging. *Scott T. Miller & Sylvain Veilleux.* 148, 383 (2003)

Simulations of Galaxy Formation in a Λ Cold Dark Matter Universe. II. The Fine Structure of Simulated Galactic Disks. *Mario G. Abadi, Julio F. Navarro, Matthias Steinmetz, & Vincent R. Eke.* 597, 21 (2003)

Angular Momentum Distribution of Hot Gas and Implications for Disk Galaxy Formation. *D. N. Chen, Y. P. Jing, & Kohji Yoshikawa.* 597, 35 (2003)

Supermassive Black Hole Binaries as Galactic Blenders. *Henry E. Kandrup, Ioannis V. Sideris, Balša Terzić, & Courtlandt L. Bohn.* 597, 111 (2003)

Mass and Dust in the Disk of a Spiral Lens Galaxy. *Joshua N. Winn, Patrick B. Hall, & Paul L. Schechter.* 597, 672 (2003)

A *Hubble Space Telescope* Survey of Extended [O III] λ5007 Emission in a Far-Infrared Selected Sample of Seyfert Galaxies: Results. *H. R. Schmitt, J. L. Donley, R. R. J. Antonucci, J. B. Hutchings, A. L. Kinney, & J. E. Pringle.* 597, 768 (2003)

Circumnulear Structures in the Interacting Seyfert Galaxy of NGC 1241: Kinematics and Optical/Infrared Morphology. *Rubén J. Díaz, Horacio Dottori, Nelson Vera-Villamizar, & Gustavo Carranza.* 597, 860 (2003)

Statistical Properties of Collisionless Equal- and Unequal-Mass Merger Remnants of Disk Galaxies. *Thorsten Naab & Andreas Burkert.* 597, 893 (2003)

When Is a Bulge Not a Bulge? Inner Disks Masquerading as Bulges in NGC 2787 and NGC 3945. *Peter Erwin, Juan Carlos Vega Beltrán, Alister W. Graham, & John E. Beckman.* 597, 929 (2003)

Halo Substructure and the Power Spectrum. *Andrew R. Zentner & James S. Bullock.* 598, 49 (2003)

Large Magellanic Cloud Bar: Evidence of a Warped Bar. *Annapurni Subramaniam.* 598, L19 (2003)

The Internal Ultraviolet–Optical Color Dispersion: Quantifying the Morphological K-Correction. *Casey Papovich, Mauro Giavalisco, Mark Dickinson, Christopher J. Conselice, & Henry C. Ferguson.* 598, 827 (2003)

The Hubble Constant from the Gravitational Lens B1608+656. *L. V. E. Koopmans, T. Treu, C. D. Fassnacht, R. D. Blandford, & G. Surpi.* 599, 70 (2003)

Near-Infrared Observations of BL Lacertae Host Galaxies. *C. C. Cheung, C. Megan Urry, Riccardo Scarpa, & Mauro Giavalisco.* 599, 155 (2003)

Direct Confirmation of Two Pattern Speeds in the Double-barred Galaxy NGC 2950. *E. M. Corsini, Victor P. Debattista, & J. A. L. Aguerri.* 599, L29 (2003)

Gas and Dust in the Extremely Red Object ERO J164502+4626.4. *Thomas R. Greve, Rob J. Ivison, & Padeli P. Papadopoulos.* 599, 839 (2003)

The Nature of E+A Galaxies in Intermediate Redshift Clusters. *Kim-Vy H. Tran, Marijn Franx, Garth Illingworth, Daniel D. Kelson, & Pieter van Dokkum.* 599, 865 (2003)

Limits on the Evolution of Galaxies from the Statistics of Gravitational Lenses. *Kyu-Hyun Chae & Shude Mao.* 599, L61 (2003)

A Face-on Tully-Fisher Relation. *David R. Andersen & Matthew A. Bershady.* 599, L79 (2003)

Infrared Observations of Galaxies in the Local Universe. II. 391 Calibrated Images with Photometric and Structural Measurements. *Albert D. Grauer, Marcia J. Rieke, & Alice C. Quillen.* 149, 327 (2003)

GALAXIES: THE GALAXY

A New Method of Estimating the Mass-to-Light Ratio of the Ursa Minor Dwarf Spheroidal Galaxy. *M. ángeles Gómez-Flechoso & D. Martínez-Delgado.* 586, L123 (2003)

GALAXY: ABUNDANCES

Cool Bottom Processes on the Thermally Pulsing Asymptotic Giant Branch and the Isotopic Composition of Circumstellar Dust Grains. *Kenneth M. Nollett, M. Busso, & G. J. Wasserburg.* 582, 1036 (2003)

A *Far Ultraviolet Spectroscopic Explorer* Survey of Molecular Hydrogen in Intermediate-Velocity Clouds in the Milky Way Halo. *Philipp Richter, Bart P. Wakker, Blair D. Savage, & Kenneth R. Sembach.* 586, 230 (2003)

Corotation, Stellar Wandering, and Fine Structure of the Galactic Abundance Pattern. *J. R. D. Lépine, I. A. Acharova, & Yu. N. Mishurov.* 589, 210 (2003)

Chemical Abundances of Old Metal-rich Stars in the Solar Neighborhood. *Y. Q. Chen, G. Zhao, P. E. Nissen, G. S. Bai, & H. M. Qiu.* 591, 925 (2003)

The Extremely Metal-poor, Neutron Capture–rich Star CS 22892−052: A Comprehensive Abundance Analysis. *Christopher Sneden, John J. Cowan, James E. Lawler, Inese I. Ivans, Scott Burles, Timothy C. Beers, Francesca Primas, Vanessa Hill, James W. Truran, George M. Fuller, Bernd Pfeiffer, & Karl-Ludwig Kratz.* 591, 936 (2003)

Bipolar Supernova Explosions: Nucleosynthesis and Implications for Abundances in Extremely Metal-Poor Stars. *Keiichi Maeda & Ken'ichi Nomoto.* 598, 1163 (2003)

Magnesium Isotopic Abundance Ratios in Cool Stars. *David Yong, David L. Lambert, & Inese I. Ivans.* 599, 1357 (2003)

GALAXY: BULGE

Three-dimensional Simulations of the Chemical and Dynamical Evolution of the Galactic Bulge. *Naohito Nakasato & Ken'ichi Nomoto.* 588, 842 (2003)

Stellar Contribution to the Galactic Bulge Microlensing Optical Depth. *Cheongho Han & Andrew Gould.* 592, 172 (2003)

Constraints on the Origin of Manganese from the Composition of the Sagittarius Dwarf Spheroidal Galaxy and the Galactic Bulge. *Andrew McWilliam, R. Michael Rich, & Tammy A. Smecker-Hane.* 592, L21 (2003)

Detailed Analysis of Nearby Bulgelike Dwarf Stars. III. α-Element and Heavy-Element Abundances. *Luciana Pompéia, Beatriz Barbuy, & Michel Grenon.* 592, 1173 (2003)

GALAXY: CENTER

The Large-Scale Bipolar Wind in the Galactic Center. *Joss Bland-Hawthorn & Martin Cohen.* 582, 246 (2003)

First Results from the Submillimeter Polarimeter for Antarctic Remote Observations: Evidence of Large-Scale Toroidal Magnetic Fields in the Galactic Center. *G. Novak, D. T. Chuss, T. Renbarger, G. S. Griffin, M. G. Newcomb, J. B. Peterson, R. F. Loewenstein, D. Pernic, & J. L. Dotson.* 583, L83 (2003)

A New X-Ray Flare from the Galactic Nucleus Detected with the *XMM-Newton* Photon Imaging Cameras. *A. Goldwurm, E. Brion, P. Goldoni, P. Ferrando, F. Daigne, A. Decourchelle, R. S. Warwick, & P. Predehl.* 584, 751 (2003)

Diffuse X-Rays from a Distributed Component of Dark Surrounding Sagittarius A*. *Martin Pessah & Fulvio Melia.* 585, L29 (2003)

Variability of Sagittarius A*: Flares at 1 Millimeter. *Jun-Hui Zhao, K. H. Young, R. M. Herrnstein, P. T. P. Ho, T. Tsutsumi, K. Y. Lo, W. M. Goss, & G. C. Bower.* 586, L29 (2003)

The First Measurement of Spectral Lines in a Short-Period Star Bound to the Galaxy's Central Black Hole: A Paradox of Youth. *A. M. Ghez, G. Duchêne, K. Matthews, S. D. Hornstein, A. Tanner, J. Larkin, M. Morris, E. E. Becklin, S. Salim, T. Kremenek, D. Thompson, B. T. Soifer, G. Neugebauer, & I. McLean.* 586, L127 (2003)

The Position of Sagittarius A*. II. Accurate Positions and Proper Motions of Stellar SiO Masers near the Galactic Center. *M. J. Reid, K. M. Menten, R. Genzel, T. Ott, R. Schödel, & A. Eckart.* 587, 208 (2003)

Strong Gravitational Lensing and Galactic Bulges. *Da-Ming Chen.* 587, L55 (2003)

Interferometric Detection of Linear Polarization from Sagittarius A* at 230 GHz. *Geoffrey C. Bower, Melvyn C. H. Wright, Heino Falcke, & Donald C. Backer.* 588, 331 (2003)

A Deep *Chandra* Catalog of X-Ray Point Sources toward the Galactic Center. *M. P. Muno, F. K. Baganoff, M. W. Bautz, W. N. Brandt, P. S. Broos, E. D. Feigelson, G. P. Garmire, M. R. Morris, G. R. Ricker, & L. K. Townsley.* 589, 225 (2003)

The Optical Gravitational Lensing Experiment: Is Interstellar Extinction toward the Galactic Center Anomalous? *A. Udalski.* 590, 284 (2003)

Orbital In-Spiral into a Massive Black Hole in a Galactic Center. *Tal Alexander & Clovis Hopman.* 590, L29 (2003)

Stellar Disk in the Galactic Center: A Remnant of a Dense Accretion Disk? *Yuri Levin & Andrei M. Beloborodov.* 590, L33 (2003)

Nonthermal Emission from the Arches Cluster (G0.121+0.017) and the Origin of γ-Ray Emission from 3EG J1746−2851. *F. Yusef-Zadeh, M. Nord, M. Wardle, C. Law, C. Lang, & T. J. W. Lazio.* 590, L103 (2003)

Chandra X-Ray Spectroscopic Imaging of Sagittarius A* and the Central Parsec of the Galaxy. *F. K. Baganoff, Y. Maeda, M. Morris, M. W. Bautz, W. N. Brandt, W. Cui, J. P. Doty, E. D. Feigelson, G. P. Garmire, S. H. Pravdo, G. R. Ricker, & L. K. Townsley.* 591, 891 (2003)

Sagittarius A* Companion S0-2: A Probe of Very High Mass Star Formation. *Andrew Gould & Alice C. Quillen.* 592, 935 (2003)

The Origin of IRS 16: Dynamically Driven Inspiral of a Dense Star Cluster to the Galactic Center? *Simon F. Portegies Zwart, Stephen L. W. McMillan, & Ortwin Gerhard.* 593, 352 (2003)

The Need for a Second Black Hole at the Galactic Center. *Brad M. S. Hansen & Miloš Milosavljević.* 593, L77 (2003)

Hubble Space Telescope Paα and 1.9 Micron Imaging of Sagittarius A West. *N. Z. Scoville, S. R. Stolovy, M. Rieke, M. Christopher, & F. Yusef-Zadeh.* 594, 294 (2003)

The Stellar Cusp around the Supermassive Black Hole in the Galactic Center. *R. Genzel, R. Schödel, T. Ott, F. Eisenhauer, R. Hofmann, M. Lehnert, A. Eckart, T. Alexander, A. Sternberg, R. Lenzen, Y. Clénet, F. Lacombe, D. Rouan, A. Renzini, & L. E. Tacconi-Garman.* 594, 812 (2003)

The Fate of Star Clusters near the Galactic Center. I. Analytic Considerations. *Stephen L. W. McMillan & Simon F. Portegies Zwart.* 596, 314 (2003)

Stellar Dynamics in the Central Arcsecond of Our Galaxy. *R. Schödel, T. Ott, R. Genzel, A. Eckart, N. Mouawad, & T. Alexander.* 596, 1015 (2003)

A Kinsip between the EGRET Supernova Remnants and Sagittarius A East. *Marco Fatuzzo & Fulvio Melia.* 596, 1035 (2003)

Dynamical Friction on Star Clusters near the Galactic Center. *Sungsoo S. Kim & Mark Morris.* 597, 312 (2003)

Really Cool Stars and the Star Formation History at the Galactic Center. *R. D. Blum, Solange V. Ramírez, K. Sellgren, & K. Olsen.* 597, 323 (2003)

A Geometric Determination of the Distance to the Galactic Center. *F. Eisenhauer, R. Schödel, R. Genzel, T. Ott, M. Tecza, R. Abuter, A. Eckart, & T. Alexander.* 597, L121 (2003)

Nonthermal Electrons in Radiatively Inefficient Accretion Flow Models of Sagittarius A*. *Feng Yuan, Eliot Quataert, & Ramesh Narayan.* 598, 301 (2003)

Magnetic Fields in Cool Clouds within the Central 50 Parsecs of the Galaxy. *David T. Chuss, Jacqueline A. Davidson, Jessie L. Dotson, C. Darren Dowell, Roger H. Hildebrand, Giles Novak, & John E. Vaillancourt.* 599, 1116 (2003)

Ejection of Hypervelocity Stars by the (Binary) Black Hole in the Galactic Center. *Qingjuan Yu & Scott Tremaine.* 599, 1129 (2003)

High-Precision Stellar Radial Velocities in the Galactic Center. *Donald F. Figer, Diane Gilmore, Sungsoo S. Kim, Mark Morris, E. E. Becklin, Ian S. McLean, Andrea M. Gilbert, James R. Graham, James E. Larkin, N. A. Levenson, & Harry I. Teplitz.* 599, 1139 (2003)

GALAXY: DISK

Evidence for Coupling between the Sagittarius Dwarf Galaxy and the Milky Way Warp. *Jeremy Bailin.* 583, L79 (2003)

H I Absorption toward Ultracompact H II Regions: Distances and Galactic Structure. *Vincent L. Fish, Mark J. Reid, David J. Wilner, & Ed Churchwell.* 587, 701 (2003)

Resolution of Distance Ambiguities of Inner Galaxy Massive Star Formation Regions. I. *C. Watson, E. Araya, M. Sewilo, E. Churchwell, P. Hofner, & S. Kurtz.* 587, 714 (2003)

On the Nature of the Ringlike Structure in the Outer Galactic Disk. *Amina Helmi, Julio F. Navarro, Andrés Meza, Matthias Steinmetz, & Vincent R. Eke.* 592, L25 (2003)

Tracing the Galactic Anticenter Stellar Stream with 2MASS M Giants. *Helio J. Rocha-Pinto, Steven R. Majewski, M. F. Skrutskie, & Jeffrey D. Crane.* 594, L115 (2003)

Exploring Halo Substructure with Giant Stars: Spectroscopy of Stars in the Galactic Anticenter Stellar Structure. *Jeffrey D. Crane, Steven R. Majewski, Helio J. Rocha-Pinto, Peter M. Frinchaboy, Michael F. Skrutskie, & David R. Law.* 594, L119 (2003)

Interstellar Hydroxyl Masers in the Galaxy. II. Zeeman Pairs and the Galactic Magnetic Field. *Vincent L. Fish, Mark J. Reid, Alice L. Argon, & Karl M. Menten.* 596, 328 (2003)

When Is a Bulge Not a Bulge? Inner Disks Masquerading as Bulges in NGC 2787 and NGC 3945. *Peter Erwin, Juan Carlos Vega Beltrán, Alister W. Graham, & John E. Beckman.* 597, 929 (2003)

A New Distance Technique for Galactic Plane Objects. *T. Foster & D. Routledge.* 598, 1005 (2003)

GALAXY: EVOLUTION

On the Baryometric Status of ^{3}He. *Elisabeth Vangioni-Flam, Keith A. Olive, Brian D. Fields, & Michel Cassé.* 585, 611 (2003)

Measurement of ^{3}He/^{4}He in the Local Interstellar Medium: The Collisa Experiment on *Mir*. *E. Salerno, F. Bühler, P. Bochsler, H. Busemann, M. L. Bassi, G. N. Zastenker, Yu. N. Agafonov, & N. A. Eismont.* 585, 840 (2003)

Galactic Halo Stars in Phase Space: A Hint of Satellite Accretion? *Chris B. Brook, Daisuke Kawata, Brad K. Gibson, & Chris Flynn.* 585, L125 (2003)

Excavation of the First Stars. *Toshikazu Shigeyama, Takuji Tsujimoto, & Yuzuru Yoshii.* 586, L57 (2003)

Stellar Sources for Heavy *r*-Process Nuclei. *Y.-Z. Qian & G. J. Wasserburg.* 588, 1099 (2003)

Corotation, Stellar Wandering, and Fine Structure of the Galactic Abundance Pattern. *J. R. D. Lépine, I. A. Acharova, & Yu. N. Mishurov.* 589, 210 (2003)

The Superbubble Origin of ^{22}Ne in Cosmic Rays. *J. C. Higdon & R. E. Lingenfelter.* 590, 822 (2003)

Actinides in the Source of Cosmic Rays and the Present Interstellar Medium. *R. E. Lingenfelter, J. C. Higdon, K.-L. Kratz, & B. Pfeiffer.* 591, 228 (2003)

Chemical Abundances of Old Metal-rich Stars in the Solar Neighborhood. *Y. Q. Chen, G. Zhao, P. E. Nissen, G. S. Bai, & H. M. Qiu.* 591, 925 (2003)

The Extremely Metal-poor, Neutron Capture–rich Star CS 22892−052: A Comprehensive Abundance Analysis. *Christopher Sneden, John J. Cowan, James E. Lawler, Inese I. Ivans, Scott Burles, Timothy C. Beers, Francesca Primas, Vanessa Hill, James W. Truran, George M. Fuller, Bernd Pfeiffer, & Karl-Ludwig Kratz.* 591, 936 (2003)

Detailed Analysis of Nearby Bulgelike Dwarf Stars. III. α-Element and Heavy-Element Abundances. *Luciana Pompéia, Beatriz Barbuy, & Michel Grenon.* 592, 1173 (2003)

Magnesium Isotopic Abundance Ratios in Cool Stars. *David Yong, David L. Lambert, & Inese I. Ivans.* 599, 1357 (2003)

GALAXY: FORMATION

Galactic Halo Stars in Phase Space: A Hint of Satellite Accretion? *Chris B. Brook, Daisuke Kawata, Brad K. Gibson, & Chris Flynn.* 585, L125 (2003)

A New Method of Estimating the Mass-to-Light Ratio of the Ursa Minor Dwarf Spheroidal Galaxy. *M. ángeles Gómez-Flechoso & D. Martínez-Delgado.* 586, L123 (2003)

Three-dimensional Simulations of the Chemical and Dynamical Evolution of the Galactic Bulge. *Naohito Nakasato & Ken'ichi Nomoto.* 588, 842 (2003)

White Dwarf Sequences in Dense Star Clusters. *Jarrod R. Hurley & Michael M. Shara.* 589, 179 (2003)

Kinematics of Tidal Debris from ω Centauri's Progenitor Galaxy. *Arihiro Mizutani, Masashi Chiba, & Tsuyoshi Sakamoto.* 589, L89 (2003)

On the Nature of the Ringlike Structure in the Outer Galactic Disk. *Amina Helmi, Julio F. Navarro, Andrés Meza, Matthias Steinmetz, & Vincent R. Eke.* 592, L25 (2003)

The Halo Occupation Distribution and the Physics of Galaxy Formation. *Andreas A. Berlind, David H. Weinberg, Andrew J. Benson, Carlton M. Baugh, Shaun Cole, Romeel Davé, Carlos S. Frenk, Adrian Jenkins, Neal Katz, & Cedric G. Lacey.* 593, 1 (2003)

Nitrogen Overabundance: Globular Cluster and Halo Formation. *Yong Li & David Burstein.* 598, L103 (2003)

GALAXY: FUNDAMENTAL PARAMETERS

A Geometric Determination of the Distance to the Galactic Center. *F. Eisenhauer, R. Schödel, R. Genzel, T. Ott, M. Tecza, R. Abuter, A. Eckart, & T. Alexander.* 597, L121 (2003)

The Oort Constants Measured from Proper Motions. *Rob P. Olling & Walter Dehnen.* 599, 274 (2003)

GALAXY: GENERAL

Resolving the Kinematic Distance Ambiguity toward Galactic H II Regions. *Michal A. Kolpak, James M. Jackson, T. M. Bania, D. P. Clemens, & John M. Dickey.* 582, 756 (2003)

Selection of Metal-poor Giant Stars Using the Sloan Digital Sky Survey Photometric System. *Amina Helmi, Željko Ivezić, Francisco Prada, Laura Pentericci, Constance M. Rockosi, Donald P. Schneider, Eva K. Grebel, Daniel Harbeck, Robert H. Lupton, James E. Gunn, Gillian R. Knapp, Michael A. Strauss, & Jonathan Brinkmann.* 586, 195 (2003)

Challenging Cosmic-Ray Propagation with Antiprotons: Evidence for a "Fresh" Nuclei Component? *Igor V. Moskalenko, Andrew W. Strong, Stepan G. Mashnik, & Jonathan F. Ormes.* 586, 1050 (2003)

Surprisingly Little O VI Emission Arises in the Local Bubble. *R. L. Shelton.* 589, 261 (2003)

A New Distance Technique for Galactic Plane Objects. *T. Foster & D. Routledge.* 598, 1005 (2003)

GALAXY: GLOBULAR CLUSTERS: GENERAL

Uncertainties of Synthetic Integrated Colors as Age Indicators. *Sukyoung K. Yi.* 582, 202 (2003)

Two-dimensional Axisymmetric Collapse of Thermally Unstable Primordial Clouds. *Chang Hyun Baek, Hyesung Kang, & Dongsu Ryu.* 584, 675 (2003)

The Y^2 Stellar Evolutionary Tracks. *Sukyoung K. Yi, Yong-Cheol Kim, & Pierre Demarque.* 144, 259 (2003)

Evidence for an Intermediate-Age, Metal-rich Population of Globular Clusters in NGC 4365. *Søren S. Larsen, Jean P. Brodie, Michael A. Beasley, Duncan A. Forbes, Markus Kissler-Patig, Harald Kuntschner, & Thomas H. Puzia.* 585, 767 (2003)

The Low Mass X-Ray Binary–Globular Cluster Connection. II. NGC 4472 X-Ray Source Properties and Source Catalogs. *Thomas J. Maccarone, Arunav Kundu, & Stephen E. Zepf.* 586, 814 (2003)

Helium-Core White Dwarfs in Globular Clusters. *Brad M. S. Hansen, Vassiliki Kalogera, & Frederic A. Rasio.* 586, 1364 (2003)

Effects of the Dissolution of Low-Concentration Globular Clusters on the Evolution of Globular Cluster Systems. *E. Vesperini & S. E. Zepf.* 587, L97 (2003)

Blue Horizontal-Branch Stars in Old, Metal-rich Stellar Systems. *Ruth C. Peterson, Bruce W. Carney, Ben Dorman, Elizabeth M. Green, Wayne Landsman, James Liebert, Robert W. O'Connell, & Robert T. Rood.* 588, 299 (2003)

The Initial Helium Content of Galactic Globular Cluster Stars from the *R*-Parameter: Comparison with the Cosmic Microwave Background Constraint. *Santi Cassisi, Maurizio Salaris, & Alan W. Irwin.* 588, 862 (2003)

White Dwarf Sequences in Dense Star Clusters. *Jarrod R. Hurley & Michael M. Shara.* 589, 179 (2003)

Substructure in the Andromeda Galaxy Globular Cluster System. *K. M. Perrett, D. A. Stiff, D. A. Hanes, & T. J. Bridges.* 589, 790 (2003)

Some Constraints on the Effects of Age and Metallicity on the Low-Mass X-Ray Binary Formation Rate. *Arunav Kundu, Thomas J. Maccarone, Stephen E. Zepf, & Thomas H. Puzia.* 589, L81 (2003)

Some Global Characteristics of the Galactic Globular Cluster System. *Sidney van den Bergh.* 590, 797 (2003)

Star Formation History of ω Centauri Imprinted in Elemental Abundance Patterns. *Takuji Tsujimoto & Toshikazy Shigeyama.* 590, 803 (2003)

The Abundance Evolution of Oxygen, Sodium, and Magnesium in Extremely Metal-Poor Intermediate-Mass Stars: Implications for the Self-Pollution Scenario in Globular Clusters. *Pavel A. Denissenkov & Falk Herwig.* 590, L99 (2003)

Dynamics of the Globular Cluster System Associated with M49 (NGC 4472): Cluster Orbital Properties and the Distribution of Dark Matter. *Patrick Côté, Dean E. McLaughlin, Judith G. Cohen, & John P. Blakeslee.* 591, 850 (2003)

Dynamical Formation of Close Binary Systems in Globular Clusters. *David Pooley, Walter H. G. Lewin, Scott F. Anderson, Holger Baumgardt, Alexei V. Filippenko, Bryan M. Gaensler, Lee Homer, Piet Hut, Victoria M. Kaspi, Junichiro Makino, Bruce Margon, Steve McMillan, Simon Portegies Zwart, Michiel van der Klis, & Frank Verbunt.* 591, L131 (2003)

Roche Lobe Overflow from Dwarf Stellar Systems. *Stephen D. Murray, Shawfeng Dong, & Douglas N. C. Lin.* 593, 301 (2003)

On the Size Difference between Red and Blue Globular Clusters. *Soren S. Larsen & Jean P. Brodie.* 593, 340 (2003)

Canonical Extra Mixing in Low-Mass Red Giants. *Pavel A. Denissenkov & Don A. VandenBerg.* 593, 509 (2003)

Modeling the Dynamical Evolution of the M87 Globular Cluster System. *E. Vesperini, S. E. Zepf, A. Kundu, & K. M. Ashman.* 593, 760 (2003)

Monte Carlo Simulations of Globular Cluster Evolution. III. Primordial Binary Interactions. *J. M. Fregeau, M. A. Gürkan, K. J. Joshi, & F. A. Rasio.* 593, 772 (2003)

Low-Mass X-Ray Binaries and Globular Clusters in Early-Type Galaxies. *Craig L. Sarazin, Arunav Kundu, Jimmy A. Irwin, Gregory R. Sivakoff, Elizabeth L. Blanton, & Scott W. Randall.* 595, 743 (2003)

The Metallicity of Pregalactic Globular Clusters: The Observational Consequences of the First Stars. *Michael A. Beasley, Daisuke Kawata, Frazer R. Pearce, Duncan A. Forbes, & Brad K. Gibson.* 596, L187 (2003)

Can High-Velocity Stars Reveal Black Holes in Globular Clusters? *G. A. Drukier & C. D. Bailyn.* 597, L125 (2003)

Analysis of the Quiescent Low-Mass X-Ray Binary Populaton in Galactic Globular Clusters. *C. O. Heinke, J. E. Grindlay, P. M. Lugger, H. N. Cohn, P. D. Edmonds, D. A. Lloyd, & A. M. Cool.* 598, 501 (2003)

The MACHO Project Large Magellanic Cloud Variable Star Inventory. XI. Frequency Analysis of the Fundamental Mode RR Lyrae Stars. *C. Alcock, D. R. Alves, A. Becker, D. Bennet, K. H. Cook, A. Drake, K. Freeman, M. Geha, K. Griest, G. Kovács, M. Lehner, S. Marshall, D. Minniti, C. Nelson, B. Peterson, P. Popowski, M. Pratt, P. Quinn, A. Rodgers, C. Stubbs, W. Sutherland, T. Vandehei, & D. L. Welch.* 598, 597 (2003)

Chemical Abundances and Rotation Velocities of Blue Horizontal-Branch Stars in Six Globular Clusters. *Bradford B. Behr.* 149, 67 (2003)

Thermal Stability of Rotating Low-Mass Subgiants and Red Giants. *Pavel A. Denissenkov & Don A. VandenBerg.* 598, 1246 (2003)

Nitrogen Overabundance: Globular Cluster and Halo Formation. *Yong Li & David Burstein.* 598, L103 (2003)

Probing the Presence of a Single or Binary Black Hole in the Globular Cluster NGC 6752 with Pulsar Dynamics. *Monica Colpi, Michela Mapelli, & Andrea Possenti.* 599, 1260 (2003)

GALAXY: GLOBULAR CLUSTERS: INDIVIDUAL

Messier Number: M3

Blue Straggler Stars: A Direct Comparison of Star Counts and Population Ratios in Six Galactic Globular Clusters. *Francesco R. Ferraro, Alison Sills, Robert T. Rood, Barbara Paltrinieri, & Roberto Buonanno.* 588, 464 (2003)

RR Lyrae Stars in Galactic Globular Clusters. II. A Theoretical Approach to Variables in M3. *M. Marconi, F. Caputo, M. Di Criscienzo, & M. Castellani.* 596, 299 (2003)

Detection of the Evolutionary Stages of Variables in M3. *J. Jurcsik, J. M. Benko, G. A. Bakos, B. Szeidl, & R . Szabó.* 597, L49 (2003)

Messier Number: M4

Carbon Isotopes in Globular Clusters Down to the Bump in the Luminosity Function. *Matthew D. Shetrone.* 585, L45 (2003)

The Pulsar/White Dwarf/Planet System in M4: Improved Astrometry. *Harvey B. Richer, Rodrigo Ibata, Gregory G. Fahlman, & Mark Huber.* 597, L45 (2003)

Messier Number: M10

Blue Straggler Stars: A Direct Comparison of Star Counts and Population Ratios in Six Galactic Globular Clusters. *Francesco R. Ferraro, Alison Sills, Robert T. Rood, Barbara Paltrinieri, & Roberto Buonanno.* 588, 464 (2003)

Messier Number: M13

Blue Straggler Stars: A Direct Comparison of Star Counts and Population Ratios in Six Galactic Globular Clusters. *Francesco R. Ferraro, Alison Sills, Robert T. Rood, Barbara Paltrinieri, & Roberto Buonanno.* 588, 464 (2003)

Messier Number: M15

On the Central Structure of M15. *Holger Baumgardt, Piet Hut, Junichiro Makino, Steve McMillan, & Simon Portegies Zwart.* 582, L21 (2003)

A Stringent Limit on the Accretion Luminosity of the Possible Central Black Hole in the Globular Cluster M15. *Luis C. Ho, Yuichi Terashima, & Takashi Okajima.* 587, L35 (2003)

Does M15 Possess an Intermediate-Mass Black Hole in Its Core? *B. J. McNamara, T. E. Harrison, & J. Anderson.* 595, 187 (2003)

Messier Number: M22

A Probable Dwarf Nova Outburst in the Core of the Globular Cluster M22. *Jay Anderson, Adrienne M. Cool, & Ivan R. King.* 597, L137 (2003)

Messier Number: M28

Chandra X-Ray Observatory Observations of the Globular Cluster M28 and Its Millisecond Pulsar PSR 1821−24. *Werner Becker, Douglas A. Swartz, George G. Pavlov, Ronald F. Elsner, Jonathan Grindlay, Roberto Mignani, Allyn F. Tennant, Don Backer, Luigi Pulone, Vincenzo Testa, & Martin C. Weisskopf.* 594, 798 (2003)

Messier Number: M31 G1

Blue Horizontal-Branch Stars in Old, Metal-rich Stellar Systems. *Ruth C. Peterson, Bruce W. Carney, Ben Dorman, Elizabeth M. Green, Wayne Landsman, James Liebert, Robert W. O'Connell, & Robert T. Rood.* 588, 299 (2003)

Messier Number: M54

Blue Horizontal-Branch Stars in the Sagittarius Dwarf Spheroidal Galaxy. *Lorenzo Monaco, Michele Bellazzini, Francesco R. Ferraro, & Elena Pancino.* 597, L25 (2003)

Messier Number: M80

Blue Straggler Stars: A Direct Comparison of Star Counts and Population Ratios in Six Galactic Globular Clusters. *Francesco R. Ferraro, Alison Sills, Robert T. Rood, Barbara Paltrinieri, & Roberto Buonanno.* 588, 464 (2003)

Messier Number: M92

Blue Straggler Stars: A Direct Comparison of Star Counts and Population Ratios in Six Galactic Globular Clusters. *Francesco R. Ferraro, Alison Sills, Robert T. Rood, Barbara Paltrinieri, & Roberto Buonanno.* 588, 464 (2003)

NGC Number: NGC 104

X-Ray Studies of Two Neutron Stars in 47 Tucanae: Toward Constraints on the Equation of State. *C. O. Heinke, J. E. Grindlay, D. A. Lloyd, & P. D. Edmonds.* 588, 452 (2003)

NGC Number: NGC 288

Blue Straggler Stars: A Direct Comparison of Star Counts and Population Ratios in Six Galactic Globular Clusters. *Francesco R. Ferraro, Alison Sills, Robert T. Rood, Barbara Paltrinieri, & Roberto Buonanno.* 588, 464 (2003)

Chemical Abundances and Rotation Velocities of Blue Horizontal-Branch Stars in Six Globular Clusters. *Bradford B. Behr.* 149, 67 (2003)

NGC Number: NGC 4590

Chemical Abundances and Rotation Velocities of Blue Horizontal-Branch Stars in Six Globular Clusters. *Bradford B. Behr.* 149, 67 (2003)

NGC Number: NGC 5139

A Capture Scenario for Globular Cluster ω Centauri. *Toshio Tsuchiya, Dana I. Dinescu, & Vladimir I. Korchagin.* 589, L29 (2003)

ω Centauri: Not a Recent Merger but Self-enriched? *Imants Platais, Rosemary F. G. Wyse, Leslie Hebb, Young-Wook Lee, & Soo-Chang Rey.* 591, L127 (2003)

NGC Number: NGC 5272

Chemical Abundances and Rotation Velocities of Blue Horizontal-Branch Stars in Six Globular Clusters. *Bradford B. Behr.* 149, 67 (2003)

NGC Number: NGC 6093

A *Chandra* X-Ray Study of the Globular Cluster M80. *C. O. Heinke, J. E. Grindlay, P. M. Lugger, H. N. Cohn, P. D. Edmonds, D. A. Lloyd, & S. S. Murray.* 598, 516 (2003)

NGC Number: NGC 6205

Chemical Abundances and Rotation Velocities of Blue Horizontal-Branch Stars in Six Globular Clusters. *Bradford B. Behr.* 149, 67 (2003)

NGC Number: NGC 6266

Three Binary Millisecond Pulsars in NGC 6266. *A. Possenti, N. D'Amico, R. N. Manchester, F. Camilo, A. G. Lyne, J. Sarkissian, & A. Corongiu.* 599, 475 (2003)

NGC Number: NGC 6341

Chemical Abundances and Rotation Velocities of Blue Horizontal-Branch Stars in Six Globular Clusters. *Bradford B. Behr.* 149, 67 (2003)

NGC Number: NGC 6397

Accurate Mass Ratio and Heating Effects in the Dual-Line Millisecond Binary Pulsar in NGC 6397. *F. R. Ferraro, E. Sabbi, R. Gratton, A. Possenti, N. D'Amico, A. Bragaglia, & F. Camilo.* 584, L13 (2003)

Helium-Core White Dwarfs in Globular Clusters. *Brad M. S. Hansen, Vassiliki Kalogera, & Frederic A. Rasio.* 586, 1364 (2003)

The Complex Hα Line Profile of the Bright Companion to PSR J1740−5340 in NGC 6397. *E. Sabbi, R. Gratton, F. R. Ferraro, A. Bragaglia, A. Possenti, N. D'Amico, & F. Camilo.* 589, L41 (2003)

NGC Number: NGC 6440

Discovery of X-Ray Burst Oscillations from a Neutron Star X-Ray Transient in the Globular Cluster NGC 6440. *P. Kaaret, J. J. M. in 't Zand, J. Heise, & J. A. Tomsick.* 598, 481 (2003)

Analysis of the Quiescent Low-Mass X-Ray Binary Populaton in Galactic Globular Clusters. *C. O. Heinke, J. E. Grindlay, P. M. Lugger, H. N. Cohn, P. D. Edmonds, D. A. Lloyd, & A. M. Cool.* 598, 501 (2003)

NGC Number: NGC 6528

Carbon Isotopes in Globular Clusters Down to the Bump in the Luminosity Function. *Matthew D. Shetrone.* 585, L45 (2003)

NGC Number: NGC 6553

Carbon Isotopes in Globular Clusters Down to the Bump in the Luminosity Function. *Matthew D. Shetrone.* 585, L45 (2003)

NGC Number: NGC 6656

A Probable Dwarf Nova Outburst in the Core of the Globular Cluster M22. *Jay Anderson, Adrienne M. Cool, & Ivan R. King.* 597, L137 (2003)

NGC Number: NGC 6752

The Puzzling Dynamical Status of the Core of the Globular Cluster NGC 6752. *F. R. Ferraro, A. Possenti, E. Sabbi, P. Lagani, R. T. Rood, N. D'Amico, & L. Origlia.* 595, 179 (2003)

The Helium White Dwarf Orbiting the Millisecond Pulsar in the Halo of the Globular Cluster NGC 6752. *Francesco R. Ferraro, Andrea Possenti, Elena Sabbi, & Nichi D'Amico.* 596, L211 (2003)

NGC Number: NGC 7078

Chemical Abundances and Rotation Velocities of Blue Horizontal-Branch Stars in Six Globular Clusters. *Bradford B. Behr.* 149, 67 (2003)

Name: Arches

The Origin of IRS 16: Dynamically Driven Inspiral of a Dense Star Cluster to the Galactic Center? *Simon F. Portegies Zwart, Stephen L. W. McMillan, & Ortwin Gerhard.* 593, 352 (2003)

The Fate of Star Clusters near the Galactic Center. I. Analytic Considerations. *Stephen L. W. McMillan & Simon F. Portegies Zwart.* 596, 314 (2003)

Name: ω Centauri

Kinematics of Tidal Debris from ω Centauri's Progenitor Galaxy. *Arihiro Mizutani, Masashi Chiba, & Tsuyoshi Sakamoto.* 589, L89 (2003)

Star Formation History of ω Centauri Imprinted in Elemental Abundance Patterns. *Takuji Tsujimoto & Toshikazy Shigeyama.* 590, 803 (2003)

A Near-Infrared Spectroscopic Screening of the Red Giant Populations in ω Centauri. *Livia Origlia, Francesco R. Ferraro, Michele Bellazzini, & Elena Pancino.* 591, 916 (2003)

Name: Mayall II

Blue Horizontal-Branch Stars in Old, Metal-rich Stellar Systems. *Ruth C. Peterson, Bruce W. Carney, Ben Dorman, Elizabeth M. Green, Wayne Landsman, James Liebert, Robert W. O'Connell, & Robert T. Rood.* 588, 299 (2003)

Name: Quintuplet

The Origin of IRS 16: Dynamically Driven Inspiral of a Dense Star Cluster to the Galactic Center? *Simon F. Portegies Zwart, Stephen L. W. McMillan, & Ortwin Gerhard.* 593, 352 (2003)

The Fate of Star Clusters near the Galactic Center. I. Analytic Considerations. *Stephen L. W. McMillan & Simon F. Portegies Zwart.* 596, 314 (2003)

Name: Terzan 5

A *Chandra* X-Ray Study of the Dense Globular Cluster Terzan 5. *C. O. Heinke, P. D. Edmonds, J. E. Grindlay, D. A. Lloyd, H. N. Cohn, & P. M. Lugger.* 590, 809 (2003)

Name: 47 Tucanae

Helium-Core White Dwarfs in Globular Clusters. *Brad M. S. Hansen, Vassiliki Kalogera, & Frederic A. Rasio.* 586, 1364 (2003)

An Extensive Census of *Hubble Space Telescope* Counterparts to *Chandra* X-Ray Sources in the Globular Cluster 47 Tucanae. I. Astrometry and Photometry. *Peter D. Edmonds, Ronald L. Gilliland, Craig O. Heinke, & Jonathan E. Grindlay.* 596, 1177 (2003)

An Extensive Census of *Hubble Space Telescope* Counterparts to *Chandra* X-Ray Sources in the Globular Cluster 47 Tucanae. II. Time Series and Analysis. *Peter D. Edmonds, Ronald L. Gilliland, Craig O. Heinke, & Jonathan E. Grindlay.* 596, 1197 (2003)

On the Origin of X-Ray Emission from Millisecond Pulsars in 47 Tucanae. *K. S. Cheng & Ronald E. Taam.* 598, 1207 (2003)

A Far-Ultraviolet Survey of 47 Tucanae. II. The Long-Period Cataclysmic Variable AKO 9. *Christian Knigge, David R. Zurek, Michael M. Shara, Knox S. Long, & Ronald L. Gilliland.* 599, 1320 (2003)

Alphanumeric: G1

A Dynamical Model for the Globular Cluster G1. *Holger Baumgardt, Junichiro Makino, Piet Hut, Steve McMillan, & Simon Portegies Zwart.* 589, L25 (2003)

GALAXY: HALO

Magnetic Reconnection Triggered by the Parker Instability in the Galaxy: Two-Dimensional Numerical Magnetohydrodynamic Simulations and Application to the Origin of X-Ray Gas in the Galactic Halo. *Syuniti Tanuma, Takaaki Yokoyama, Takahiro Kudoh, & Kazunari Shibata.* 582, 215 (2003)

The Large-Scale Bipolar Wind in the Galactic Center. *Joss Bland-Hawthorn & Martin Cohen.* 582, 246 (2003)

Origins of the Highly Ionized Gas along the Line of Sight toward HD 116852. *Andrew J. Fox, Blair D. Savage, Kenneth R. Sembach, Dirk Fabian, Philipp Richter, David M. Meyer, James Lauroesch, & J. Christopher Howk.* 582, 793 (2003)

Stellar Halo Parameters from 4588 Subdwarfs. *Andrew Gould.* 583, 765 (2003)

Evidence for Coupling between the Sagittarius Dwarf Galaxy and the Milky Way Warp. *Jeremy Bailin.* 583, L79 (2003)

A Survey of *Far Ultraviolet Spectroscopic Explorer* and *Hubble Space Telescope* Sight Lines through High-Velocity Cloud Complex C. *Joseph A. Collins, J. Michael Shull, & Mark L. Giroux.* 585, 336 (2003)

Galactic Halo Stars in Phase Space: A Hint of Satellite Accretion? *Chris B. Brook, Daisuke Kawata, Brad K. Gibson, & Chris Flynn.* 585, L125 (2003)

The Failure of Self-Interacting Dark Matter to Solve the Overabundance of Dark Satellites and the Soft Core Question. *Elena D'Onghia & Andreas Burkert.* 586, 12 (2003)

The Magellanic Stream, High-Velocity Clouds, and the Sculptor Group. *Mary E. Putman, Lister Staveley-Smith, Kenneth C. Freeman, Brad K. Gibson, & David G. Barnes.* 586, 170 (2003)

Selection of Metal-poor Giant Stars Using the Sloan Digital Sky Survey Photometric System. *Amina Helmi, Željko Ivezić, Francisco Prada, Laura Pentericci, Constance M. Rockosi, Donald P. Schneider, Eva K. Grebel, Daniel Harbeck, Robert H. Lupton, James E. Gunn, Gillian R. Knapp, Michael A. Strauss, & Jonathan Brinkmann.* 586, 195 (2003)

A Critical Examination of Halo White Dwarf Candidates. *P. Bergeron.* 586, 201 (2003)

Far Ultraviolet Spectroscopic Explorer Detection of Galactic O VI Emission in the Halo above the Perseus Arm. *Birgit Otte, W. Van Dyke Dixon, & Ravi Sankrit.* 586, L53 (2003)

Excavation of the First Stars. *Toshikazu Shigeyama, Takuji Tsujimoto, & Yuzuru Yoshii.* 586, L57 (2003)

Highly Ionized Gas in the Galactic Halo: A *FUSE* Survey of O VI Absorption toward 22 Halo Stars. *J. Zsargó, K. R. Sembach, J. C. Howk, & B. D. Savage.* 586, 1019 (2003)

A New Method of Estimating the Mass-to-Light Ratio of the Ursa Minor Dwarf Spheroidal Galaxy. *M. ángeles Gómez-Flechoso & D. Martínez-Delgado.* 586, L123 (2003)

Dark Matter in the Milky Way. I. The Isothermal Disk Approximation. *P. M. W. Kalberla.* 588, 805 (2003)

Surprisingly Little O VI Emission Arises in the Local Bubble. *R. L. Shelton.* 589, 261 (2003)

Are Compact High-Velocity Clouds Extragalactic Objects? *Philip R. Maloney & Mary E. Putman.* 589, 270 (2003)

A Search for Stellar Obscuration Events Due to Dark Clouds. *A. J. Drake & K. H. Cook.* 589, 281 (2003)

The *Far Ultraviolet Spectroscopic Explorer* Survey of O VI Absorption in and near the Galaxy. *B. P. Wakker, B. D. Savage, K. R. Sembach, P. Richter, M. Meade, E. B. Jenkins, J. M. Shull, T. B. Ake, W. P. Blair, W. V. Dixon, S. D. Friedman, J. C. Green, R. F. Green, J. W. Kruk, H. W. Moos, E. M. Murphy, W. R. Oegerle, D. J. Sahnow, G. Sonneborn, E. Wilkinson, & D. G. York.* 146, 1 (2003)

Distribution and Kinematics of O VI in the Galactic Halo. *B. D. Savage, K. R. Sembach, B. P. Wakker, P. Richter, M. Meade, E. B. Jenkins, J. M. Shull, H. W. Moos, & G. Sonneborn.* 146, 125 (2003)

Highly Ionized High-Velocity Gas in the Vicinity of the Galaxy. *K. R. Sembach, B. P. Wakker, B. D. Savage, P. Richter, M. Meade, J. M. Shull, E. B. Jenkins, G. Sonneborn, & H. W. Moos.* 146, 165 (2003)

Star Formation History of ω Centauri Imprinted in Elemental Abundance Patterns. *Takuji Tsujimoto & Toshikazy Shigeyama.* 590, 803 (2003)

Microlensing Optical Depth toward the Galactic Bulge from Microlensing Observations during 2000 with Difference Image Analysis. *T. Sumi, F. Abe, I. A. Bond, R. J. Dodd, J. B. Hearnshaw, M. Honda, M. Honma, Y. Kan-ya, P. M. Kilmartin, K. Masuda, Y. Matsubara, Y. Muraki, T. Nakamura, R. Nishi, S. Noda, K. Ohnishi, O. K. L. Petterson, N. J. Rattenbury, M. Reid, To. Saito, Y. Saito, H. Sato, M. Sekiguchi, J. Skuljan, D. J. Sullivan, M. Takeuti, P. J. Tristram, S. Wilkinson, T. Yanagisawa, & P. C. M. Yock.* 591, 204 (2003)

On the Mass-Ratio Distribution of Spectroscopic Binaries. *Dorit Goldberg, Tsevi Mazeh, & David W. Latham.* 591, 397 (2003)

High-Velocity Cloud Complex H: A Satellite of the Milky Way in a Retrograde Orbit? *Felix J. Lockman.* 591, L33 (2003)

The Extremely Metal-poor, Neutron Capture–rich Star CS 22892−052: A Comprehensive Abundance Analysis. *Christopher Sneden, John J. Cowan, James E. Lawler, Inese I. Ivans, Scott Burles, Timothy C. Beers, Francesca Primas, Vanessa Hill, James W. Truran, George M. Fuller, Bernd Pfeiffer, & Karl-Ludwig Kratz.* 591, 936 (2003)

Binary Blue Metal-Poor Stars: Evidence for Asymptotic Giant Branch Mass Transfer. *Christopher Sneden, George W. Preston, & John J. Cowan.* 592, 504 (2003)

Chemical Substructure in the Milky Way Halo: A New Population of Old Stars. *Inese I. Ivans, Christopher Sneden, C. Renée James, George W. Preston, Jon P. Fulbright, Peter A. Höflich, Bruce W. Carney, & J. Craig Wheeler.* 592, 906 (2003)

First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Foreground Emission. *C. L. Bennett, R. S. Hill, G. Hinshaw, M. R. Nolta, N. Odegard, L. Page, D. N. Spergel, J. L. Weiland, E. L. Wright, M. Halpern, N. Jarosik, A. Kogut, M. Limon, S. S. Meyer, G. S. Tucker, & E. Wollack.* 148, 97 (2003)

Sagittarius Tidal Debris 90 kiloparsecs from the Galactic Center. *Heidi Jo Newberg, Brian Yanny, Eva K. Grebel, Greg Hennessy, Zeljko Ivezic, David Martinez-Delgado, Michael Odenkirchen, Hans-Walter Rix, Jon Brinkmann, Don Q. Lamb, Donald P. Schneider, & Donald G. York.* 596, L191 (2003)

Hα Emission from High-Velocity Clouds and Their Distances. *M. E. Putman, J. Bland-Hawthorn, S. Veilleux, B. K. Gibson, K. C. Freeman, & P. R. Maloney.* 597, 948 (2003)

Accretion of Dust Grains as a Possible Origin of Metal-poor Stars with Low α/Fe Ratios. *Toshikazu Shigeyama & Takuji Tsujimoto.* 598, L47 (2003)

The Wendelstein Calar Alto Pixellensing Project (WeCAPP): First MACHO Candidates. *Arno Riffeser, Jürgen Fliri, Ralf Bender, Stella Seitz, & Claus A. Gössl.* 599, L17 (2003)

A Two Micron All Sky Survey All-Sky View of the Sagittarius Dwarf Galaxy. I. Morphology of the Sagittarius Core and Tidal Arms. *Steven R. Majewski, M. F. Skrutskie, Martin D. Weinberg, & James C. Ostheimer.* 599, 1082 (2003)

The Wisconsin Hα Mapper Northern Sky Survey. *L. M. Haffner, R. J. Reynolds, S. L. Tufte, G. J. Madsen, K. P. Jaehnig, & J. W. Percival.* 149, 405 (2003)

GALAXY: KINEMATICS AND DYNAMICS

To Circularize or Not to Circularize?—Orbital Evolution of Satellite Galaxies. *Yoshikazu Hashimoto, Yoko Funato, & Junichiro Makino.* 582, 196 (2003)

Nonlinear Effects in Models of the Galaxy. I. Midplane Stellar Orbits in the Presence of Three-Dimensional Spiral Arms. *Bárbara Pichardo, Marco Martos, Edmundo Moreno, & Julia Espresate.* 582, 230 (2003)

Type Ia Supernovae and High-Velocity White Dwarfs. *Brad M. S. Hansen.* 582, 915 (2003)

Evidence for Coupling between the Sagittarius Dwarf Galaxy and the Milky Way Warp. *Jeremy Bailin.* 583, L79 (2003)

The Universality of Turbulence in the Molecular Interstellar Medium and Its Exploitation as a Distance Estimator. *Christopher M. Brunt.* 584, 293 (2003)

Far Ultraviolet Spectroscopic Explorer Detection of Galactic O VI Emission in the Halo above the Perseus Arm. *Birgit Otte, W. Van Dyke Dixon, & Ravi Sankrit.* 586, L53 (2003)

The First Measurement of Spectral Lines in a Short-Period Star Bound to the Galaxy's Central Black Hole: A Paradox of Youth. *A. M. Ghez, G. Duchêne, K. Matthews, S. D. Hornstein, A. Tanner, J. Larkin, M. Morris, E. E. Becklin, S. Salim, T. Kremenek, D. Thompson, B. T. Soifer, G. Neugebauer, & I. McLean.* 586, L127 (2003)

Dark Matter in the Milky Way. I. The Isothermal Disk Approximation. *P. M. W. Kalberla.* 588, 805 (2003)

The Distance to the Supernova Remnant CTB 87 and the Radial Velocity of the Perseus Arm toward $l = 75°$, Derived from H I and CO Observations. *Roland Kothes, Wolfgang Reich, Tyler Foster, & Do-Young Byun.* 588, 852 (2003)

The Need for a Second Black Hole at the Galactic Center. *Brad M. S. Hansen & Miloš Milosavljević.* 593, L77 (2003)

Dynamical Friction on Star Clusters near the Galactic Center. *Sungsoo S. Kim & Mark Morris.* 597, 312 (2003)

The Oort Constants Measured from Proper Motions. *Rob P. Olling & Walter Dehnen.* 599, 274 (2003)

A Two Micron All Sky Survey All-Sky View of the Sagittarius Dwarf Galaxy. I. Morphology of the Sagittarius Core and Tidal Arms. *Steven R. Majewski, M. F. Skrutskie, Martin D. Weinberg, & James C. Ostheimer.* 599, 1082 (2003)

GALAXY: NUCLEUS

Galactic Bulges from *Hubble Space Telescope* Near-Infrared Camera Multi-Object Spectrometer Observations: The Lack of $r^{1/4}$ Bulges. *Marc Balcells, Alister W. Graham, Lilian Domínguez-Palmero, & Reynier F. Peletier.* 582, L79 (2003)

Gravitational Waves from Stars Orbiting the Sagittarius A* Black Hole. *Marc Freitag.* 583, L21 (2003)

The Origin of IRS 16: Dynamically Driven Inspiral of a Dense Star Cluster to the Galactic Center? *Simon F. Portegies Zwart, Stephen L. W. McMillan, & Ortwin Gerhard.* 593, 352 (2003)

The Need for a Second Black Hole at the Galactic Center. *Brad M. S. Hansen & Miloš Milosavljević.* 593, L77 (2003)

The Fate of Star Clusters near the Galactic Center. I. Analytic Considerations. *Stephen L. W. McMillan & Simon F. Portegies Zwart.* 596, 314 (2003)

GALAXY: OPEN CLUSTERS AND ASSOCIATIONS: GENERAL

Cataclysmic Variables: An Empirical Angular Momentum Loss Prescription From Open Cluster Data. *N. Andronov, M. Pinsonneault, & A. Sills.* 582, 358 (2003)

On the Rotational Evolution of Solar- and Late-Type Stars, Its Magnetic Orgins, and the Possibility of Stellar Gyrochronology. *Sydney A. Barnes.* 586, 464 (2003)

A Connection between the Morphology of the X-Ray Emission and Rotation for Solar-Type Stars in Open Clusters. *Sydney A. Barnes.* 586, L145 (2003)

A Method for Simultaneous Determination of A_V and R and Applications. *Jorge R. Ducati, Daiana Ribeiro, & Sandro B. Rembold.* 588, 344 (2003)

White Dwarf Sequences in Dense Star Clusters. *Jarrod R. Hurley & Michael M. Shara.* 589, 179 (2003)

Roche Lobe Overflow from Dwarf Stellar Systems. *Stephen D. Murray, Shawfeng Dong, & Douglas N. C. Lin.* 593, 301 (2003)

The White Dwarf Deficit in Open Clusters: Dynamical Processes. *M. Fellhauer, D. N. C. Lin, M. Bolte, S. J. Aarseth, & K. A. Williams.* 595, L53 (2003)

A Study of Cygni OB2: Pointing the Way toward Finding Our Galaxy's Super–Star Clusters. *M. M. Hanson.* 597, 957 (2003)

A Ring-Shaped Embedded Young Stellar (Proto)Cluster. *M. S. Nanda Kumar, D. K. Ojha, & C. J. Davis.* 598, 1107 (2003)

GALAXY: OPEN CLUSTERS AND ASSOCIATIONS: INDIVIDUAL

NGC Number: NGC 2024

Near-Infrared Adaptive Optics Imaging of the Embedded Cluster NGC 2024. *Tracy L. Beck, M. Simon, & L. M. Close.* 583, 358 (2003)

A Deep *Chandra* X-Ray Observation of the Embedded Young Cluster in NGC 2024. *Stephen Skinner, Marc Gagné, & Emily Belzer.* 598, 375 (2003)

A Cluster of Compact Radio Sources in NGC 2024 (Orion B). *Luis F. Rodríguez, Yolanda Gómez, & Bo Reipurth.* 598, 1100 (2003)

Distribution of Circumstellar Disk Masses in the Young Cluster NGC 2024. *J. A. Eisner & John M. Carpenter.* 598, 1341 (2003)

NGC Number: NGC 2244

10 MK Gas in M17 and the Rosette Nebula: X-Ray Flows in Galactic H II Regions. *Leisa K. Townsley, Eric D. Feigelson, Thierry Montmerle, Patrick S. Broos, You-Hua Chu, & Gordon P. Garmire.* 593, 874 (2003)

NGC Number: NGC 2264

Limits on Eclipses of the Pre–Main-Sequence Star KH 15D in the First Half of the 20th Century. *Joshua N. Winn, Peter M. Garnavich, K. Z. Stanek, & Dimitar D. Sasselov.* 593, L121 (2003)

NGC Number: NGC 2516

Chandra Observations of the Young Open Cluster NGC 2516. *F. Damiani, E. Flaccomio, G. Micela, S. Sciortino, F. R. Harnden, Jr., S. S. Murray, S. J. Wolk, & R. D. Jeffries.* 588, 1009 (2003)

NGC Number: NGC 6231

Optical Polarization Observations of NGC 6231: Evidence for a Past Supernova Fingerprint. *Carlos Feinstein, Ruben Martinez, M. Marcela Vergne, Gustavo Baume, & Ruben Vazquez.* 598, 349 (2003)

NGC Number: NGC 6618

10 MK Gas in M17 and the Rosette Nebula: X-Ray Flows in Galactic H II Regions. *Leisa K. Townsley, Eric D. Feigelson, Thierry Montmerle, Patrick S. Broos, You-Hua Chu, & Gordon P. Garmire.* 593, 874 (2003)

Name: Coma

Beryllium Abundances in F and G Dwarfs in the Coma Cluster and the Ursa Major Moving Group from Keck HIRES Observations. *Ann Merchant Boesgaard, Eric Armengaud, & Jeremy R. King.* 583, 955 (2003)

Name: Cygnus OB2

A Study of Cygni OB2: Pointing the Way toward Finding Our Galaxy's Super–Star Clusters. *M. M. Hanson.* 597, 957 (2003)

A Westerbork Synthesis Radio Telescope 1400 and 350 MHz Continuum Survey of the Cygnus OB2 Association, in Search of Hot Massive Stars. *Diah Y. A. Setia Gunawan, A. Ger de Bruyn, Karel A. van der Hucht, & Peredur M. Williams.* 149, 123 (2003)

Name: Hyades

The Impact of Pollution on Stellar Evolution Models. *Aaron Dotter & Brian Chaboyer.* 596, 496 (2003)

Stellar Pollution and [Fe/H] in the Hyades. *Aaron Dotter & Brian Chaboyer.* 596, L101 (2003)

The Distances to Open Clusters from Main-Sequence Fitting. I. New Models and a Comparison with the Properties of the Hyades Eclipsing Binary VB 22. *Marc H. Pinsonneault, Donald M. Terndrup, Robert B. Hanson, & John R. Stauffer.* 598, 588 (2003)

An Adaptive Optics Survey of M6.0–M7.5 Stars: Discovery of Three Very Low Mass Binary Systems Including Two Probably Hyades Members. *Nick Siegler, Laird M. Close, Eric E. Mamajek, & Melanie Freed.* 598, 1265 (2003)

Name: TW Hydrae

ROSAT X-Ray Spectral Properties of Nearby Young Associations: TW Hydrae, Tucana-Horologium, and the β Pictoris Moving Group. *Joel H. Kastner, Lara Crigger, Margaret Rich, & David A. Weintraub.* 585, 878 (2003)

Magellan Echelle Spectroscopy of TW Hydrae Brown Dwarfs. *Subhanjoy Mohanty, Ray Jayawardhana, & David Barrado y Navascues.* 593, L109 (2003)

New Members of the TW Hydrae Association, β Pictoris Moving Group, and Tucana/Horologium Association. *Inseok Song, B. Zuckerman, & M. S. Bessell.* 599, 342 (2003)

Name: ρ Ophiuchi Dark Cloud

Spatial Study with the Very Large Telescope of a New Resolved Edge-on Circumstellar Dust Disk Discovered at the Periphery of the ρ Ophiuchi Dark Cloud. *N. Grosso, J. Alves, K. Wood, R. Neuhäuser, T. Montmerle, & J. E. Bjorkman.* 586, 296 (2003)

Name: Orion

X-Ray Modeling of Very Young Early-Type Stars in the Orion Trapezium: Signatures of Magnetically Confined Plasmas and Evolutionary Implications. *N. S. Schulz, C. Canizares, D. Huenemoerder, & K. Tibbets.* 595, 365 (2003)

Name: Orion Nebula Cluster

Chandra X-Ray Observation of the Orion Nebula Cluster. I. Detection, Identification, and Determination of X-Ray Luminosities. *E. Flaccomio, F. Damiani, G. Micela, S. Sciortino, F. R. Harnden, Jr., S. S. Murray, & S. J. Wolk.* 582, 382 (2003)

Chandra X-Ray Observation of the Orion Nebula Cluster. II. Relationship between X-Ray Activity Indicators and Stellar Parameters. *E. Flaccomio, F. Damiani, G. Micela, S. Sciortino, F. R. Harnden, Jr., S. S. Murray, & S. J. Wolk.* 582, 398 (2003)

X-Rays in the Orion Nebula Cluster: Constraints on the Origins of Magnetic Activity in Pre–Main-Sequence Stars. *Eric D. Feigelson, James A. Gaffney III, Gordon Garmire, Lynne A. Hillenbrand, & Leisa Townsley.* 584, 911 (2003)

A Giant Outburst at Millimeter Wavelengths in the Orion Nebula. *Geoffrey C. Bower, Richard L. Plambeck, Alberto Bolatto, Nate McCrady, James R. Graham, Imke de Pater, Michael C. Liu, & Frederick K. Baganoff.* 598, 1140 (2003)

Name: σ Orionis

Spectroscopic Estimate of Surface Gravity for a Planetary Member in the σ Orionis Cluster. *E. L. Martín & M. R. Zapatero Osorio.* 593, L113 (2003)

Name: α Persei

Beryllium Abundances in F and G Dwarfs in the Pleiades and α Persei Clusters from Keck High-Resolution Echelle Spectrometer Observations. *Ann Merchant Boesgaard, Eric Armengaud, & Jeremy R. King.* 582, 410 (2003)

A *Hubble Space Telescope* Wide Field Planetary Camera 2 Survey for Brown Dwarf Binaries in the α Persei and the Pleiades Open Clusters. *Eduardo L. Martín, David Barrado y Navascués, Isabelle Baraffe, Hervé Bouy, & Scott Dahm.* 594, 525 (2003)

Name: Perseus OB1

On the Origin of the High-Ionization Intermediate-Velocity Gas toward HD 14434. *David C. Knauth, J. Christopher Howk, Kenneth R. Sembach, James T. Lauroesch, & David M. Meyer.* 592, 964 (2003)

Name: β Pictoris

New Members of the TW Hydrae Association, β Pictoris Moving Group, and Tucana/Horologium Association. *Inseok Song, B. Zuckerman, & M. S. Bessell.* 599, 342 (2003)

Name: β Pictoris Moving Group

ROSAT X-Ray Spectral Properties of Nearby Young Associations: TW Hydrae, Tucana-Horologium, and the β Pictoris Moving Group. *Joel H. Kastner, Lara Crigger, Margaret Rich, & David A. Weintraub.* 585, 878 (2003)

Name: Pleiades

Beryllium Abundances in F and G Dwarfs in the Pleiades and α Persei Clusters from Keck High-Resolution Echelle Spectrometer Observations. *Ann Merchant Boesgaard, Eric Armengaud, & Jeremy R. King.* 582, 410 (2003)

A *Hubble Space Telescope* Wide Field Planetary Camera 2 Survey for Brown Dwarf Binaries in the α Persei and the Pleiades Open Clusters. *Eduardo L. Martín, David Barrado y Navascués, Isabelle Baraffe, Hervé Bouy, & Scott Dahm.* 594, 525 (2003)

Interstellar Matter near the Pleiades. VI. Evidence for an Interstellar Three-Body Encounter. *Richard E. White.* 148, 487 (2003)

Name: Scorpius-Centaurus

The ϵ Chamaeleontis Young Stellar Group and the Characterization of Sparse Stellar Clusters. *Eric D. Feigelson, Warrick A. Lawson, & Gordon P. Garmire.* 599, 1207 (2003)

Name: Taurus-Auriga

Very Low Mass Stars amd Brown Dwarfs in Taurus-Auriga. *Russel J. White & Gibor Basri.* 582, 1109 (2003)

Name: Trumpler 14

Chandra Observations of Associates of η Carinae. I. Luminosities. *Nancy Remage Evans, Frederick D. Seward, Miriam I. Krauss, Takashi Isobe, Joy Nichols, Eric M. Schlegel, & Scott J. Wolk.* 589, 509 (2003)

Name: Trumpler 16

Chandra Observations of Associates of η Carinae. I. Luminosities. *Nancy Remage Evans, Frederick D. Seward, Miriam I. Krauss, Takashi Isobe, Joy Nichols, Eric M. Schlegel, & Scott J. Wolk.* 589, 509 (2003)

Name: Trapezium

X-Ray Modeling of Very Young Early-Type Stars in the Orion Trapezium: Signatures of Magnetically Confined Plasmas and Evolutionary Implications. *N. S. Schulz, C. Canizares, D. Huenemoerder, & K. Tibbets.* 595, 365 (2003)

Name: Tucana

ROSAT X-Ray Spectral Properties of Nearby Young Associations: TW Hydrae, Tucana-Horologium, and the β Pictoris Moving Group. *Joel H. Kastner, Lara Crigger, Margaret Rich, & David A. Weintraub.* 585, 878 (2003)

New Members of the TW Hydrae Association, β Pictoris Moving Group, and Tucana/Horologium Association. *Inseok Song, B. Zuckerman, & M. S. Bessell.* 599, 342 (2003)

Name: Ursa Major Group

Beryllium Abundances in F and G Dwarfs in the Coma Cluster and the Ursa Major Moving Group from Keck HIRES Observations. *Ann Merchant Boesgaard, Eric Armengaud, & Jeremy R. King.* 583, 955 (2003)

Alphanumeric: IC 348

An Unusual Eclipse of a Pre–Main-Sequence Star in IC 348. *William Herbst, Roger E. Cohen, & Eric C. Williams.* 596, L243 (2003)

GALAXY: SOLAR NEIGHBORHOOD

Flux-Tube Dynamics and a Model for the Origin of the Local Fluff. *Donald P. Cox & Louise Helenius.* 583, 205 (2003)

An Ultrahigh-Resolution Survey of the Interstellar ^{7}Li/^{6}Li Isotope Ratio in the Solar Neighborhood. *David C. Knauth, S. R. Federman, & David L. Lambert.* 586, 268 (2003)

Spectroscopic Identification of White Dwarfs in the New Luyten Two-Tenths Survey. *Stéphane Vennes & Adela Kawka.* 586, L95 (2003)

Target Selection for SETI. I. A Catalog of Nearby Habitable Stellar Systems. *Margaret C. Turnbull & Jill C. Tarter.* 145, 179 (2003)

Chemical Abundances of Old Metal-rich Stars in the Solar Neighborhood. *Y. Q. Chen, G. Zhao, P. E. Nissen, G. S. Bai, & H. M. Qiu.* 591, 925 (2003)

The First Substellar Subdwarf? Discovery of a Metal-poor L Dwarf with Halo Kinematics. *Adam J. Burgasser, J. Davy Kirkpatrick, Adam Burrows, James Liebert, I. Neill Reid, John E. Gizis, Mark R. McGovern, L. Prato, & Ian S. McLean.* 592, 1186 (2003)

Stellar-Mass Black Holes in the Solar Neighborhood. *James R. Chisholm, Scott Dodelson, & Edward W. Kolb.* 596, 437 (2003)

The Oort Constants Measured from Proper Motions. *Rob P. Olling & Walter Dehnen.* 599, 274 (2003)

Target Selection for SETI. II. Tycho-2 Dwarfs, Old Open Clusters, and the Nearest 100 Stars. *Margaret C. Turnbull & Jill C. Tarter.* 149, 423 (2003)

GALAXY: STELLAR CONTENT

Studying the Galactic Bulge through the Spectroscopy of Microlensed Sources. II. Observations. *Stephen R. Kane & Kailash C. Sahu.* 582, 743 (2003)

An Empirical Decomposition of Near-Infrared Emission into Galactic and Extragalactic Components. *Richard G. Arendt & Eli Dwek.* 585, 305 (2003)

Discovery of an Ultracool Subdwarf: LSR 1425+7102, the First Star with Spectral Type sdM8.0. *Sébastien Lépine, Michael M. Shara, & R. Michael Rich.* 585, L69 (2003)

The Galactic Disk Mass Function: Reconciliation of the *Hubble Space Telescope* and Nearby Determinations. *Gilles Chabrier.* 586, L133 (2003)

LSR 1610−0040: The First Early-Type L Subdwarf. *Sébastien Lépine, R. Michael Rich, & Michael M. Shara.* 591, L49 (2003)

A Study of Cygni OB2: Pointing the Way toward Finding Our Galaxy's Super–Star Clusters. *M. M. Hanson.* 597, 957 (2003)

Galactic-Field Initial Mass Functions of Massive Stars. *Pavel Kroupa & Carsten Weidner.* 598, 1076 (2003)

Classical Cepheid Pulsation Models. IX. New Input Physics. *Silvia Petroni, Giuseppe Bono, Marcella Marconi, & Robert F. Stellingwerf.* 599, 522 (2003)

GALAXY: STRUCTURE

Nonlinear Effects in Models of the Galaxy. I. Midplane Stellar Orbits in the Presence of Three-Dimensional Spiral Arms. *Bárbara Pichardo, Marco Martos, Edmundo Moreno, & Julia Espresate.* 582, 230 (2003)

Studying the Galactic Bulge through the Spectroscopy of Microlensed Sources. II. Observations. *Stephen R. Kane & Kailash C. Sahu.* 582, 743 (2003)

Resolving the Kinematic Distance Ambiguity toward Galactic H II Regions. *Michal A. Kolpak, James M. Jackson, T. M. Bania, D. P. Clemens, & John M. Dickey.* 582, 756 (2003)

Galactic Bulges from *Hubble Space Telescope* Near-Infrared Camera Multi-Object Spectrometer Observations: The Lack of $r^{1/4}$ Bulges. *Marc Balcells, Alister W. Graham, Lilian Domínguez-Palmero, & Reynier F. Peletier.* 582, L79 (2003)

The Universality of Turbulence in the Molecular Interstellar Medium and Its Exploitation as a Distance Estimator. *Christopher M. Brunt.* 584, 293 (2003)

Selection of Metal-poor Giant Stars Using the Sloan Digital Sky Survey Photometric System. *Amina Helmi, Željko Ivezić, Francisco Prada, Laura Pentericci, Constance M. Rockosi, Donald P. Schneider, Eva K. Grebel, Daniel Harbeck, Robert H. Lupton, James E. Gunn, Gillian R. Knapp, Michael A. Strauss, & Jonathan Brinkmann.* 586, 195 (2003)

Far Ultraviolet Spedtroscopic Explorer Detection of Galactic O VI Emission in the Halo above the Perseus Arm. *Birgit Otte, W. Van Dyke Dixon, & Ravi Sankrit.* 586, L53 (2003)

Highly Ionized Gas in the Galactic Halo: A *FUSE* Survey of O VI Absorption toward 22 Halo Stars. *J. Zsargó, K. R. Sembach, J. C. Howk, & B. D. Savage.* 586, 1019 (2003)

A New Method of Estimating the Mass-to-Light Ratio of the Ursa Minor Dwarf Spheroidal Galaxy. *M. ángeles Gómez-Flechoso & D. Martínez-Delgado.* 586, L123 (2003)

Corotation, Stellar Wandering, and Fine Structure of the Galactic Abundance Pattern. *J. R. D. Lépine, I. A. Acharova, & Yu. N. Mishurov.* 589, 210 (2003)

The Impact of Ionizing Stars on the Diffuse Interstellar Medium: A Swept-Up Shell and Ionized Halo around the W4 Chimney/Superbubble. *S. Terebey, M. Fich, R. Taylor, Y. Cao, & T. Hancock.* 590, 906 (2003)

High-Velocity Cloud Complex H: A Satellite of the Milky Way in a Retrograde Orbit? *Felix J. Lockman.* 591, L33 (2003)

On the Nature of the Ringlike Structure in the Outer Galactic Disk. *Amina Helmi, Julio F. Navarro, Andrés Meza, Matthias Steinmetz, & Vincent R. Eke.* 592, L25 (2003)

An Upper Limit on the Granularity of the Local Stellar Halo. *Andrew Gould.* 592, L63 (2003)

Loops, Drips, and Walls in the Galactic Chimney GSH 277+00+36. *N. M. McClure-Griffiths, John M. Dickey, B. M. Gaensler, & A. J. Green.* 594, 833 (2003)

Tracing the Galactic Anticenter Stellar Stream with 2MASS M Giants. *Helio J. Rocha-Pinto, Steven R. Majewski, M. F. Skrutskie, & Jeffrey D. Crane.* 594, L115 (2003)

Exploring Halo Substructure with Giant Stars: Spectroscopy of Stars in the Galactic Anticenter Stellar Structure. *Jeffrey D. Crane, Steven R. Majewski, Helio J. Rocha-Pinto, Peter M. Frinchaboy, Michael F. Skrutskie, & David R. Law.* 594, L119 (2003)

First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Galactic Signal Contamination from Sidelobe Pickup. *C. Barnes, R. S. Hill, G. Hinshaw, L. Page, C. L. Bennett, M. Halpern, N. Jarosik, A. Kogut, M. Limon, S. S. Meyer, G. S. Tucker, E. Wollack, & E. L. Wright.* 148, 51 (2003)

First-Year *Wilkinson Microwave Anisotrophy Probe* (*WMAP*) Observations: Foreground Emission. *C. L. Bennett, R. S. Hill, G. Hinshaw, M. R. Nolta, N. Odegard, L. Page, D. N. Spergel, J. L. Weiland, E. L. Wright, M. Halpern, N. Jarosik, A. Kogut, M. Limon, S. S. Meyer, G. S. Tucker, & E. Wollack.* 148, 97 (2003)

Sagittarius Tidal Debris 90 kiloparsecs from the Galactic Center. *Heidi Jo Newberg, Brian Yanny, Eva K. Grebel, Greg Hennessy, Zeljko Ivezic, David Martinez-Delgado, Michael Odenkirchen, Hans-Walter Rix, Jon Brinkmann, Don Q. Lamb, Donald P. Schneider, & Donald G. York.* 596, L191 (2003)

A Geometric Determination of the Distance to the Galactic Center. *F. Eisenhauer, R. Schödel, R. Genzel, T. Ott, M. Tecza, R. Abuter, A. Eckart, & T. Alexander.* 597, L121 (2003)

The Oort Constants Measured from Proper Motions. *Rob P. Olling & Walter Dehnen.* 599, 274 (2003)

A Two Micron All Sky Survey All-Sky View of the Sagittarius Dwarf Galaxy. I. Morphology of the Sagittarius Core and Tidal Arms. *Steven R. Majewski, M. F. Skrutskie, Martin D. Weinberg, & James C. Ostheimer.* 599, 1082 (2003)

GAMMA RAYS: BURSTS

How Sample Completeness Affects Gamma-Ray Burst Classification. *Jon Hakkila, Timothy W. Giblin, Richard J. Roiger, David J. Haglin, William S. Paciesas, & Charles A. Meegan.* 582, 320 (2003)

The Spectroscopic Variability of GRB 021004. *T. Matheson, P. M. Garnavich, C. Foltz, S. West, G. Williams, E. Falco, M. L. Calkins, F. J. Castander, E. Gawiser, S. Jha, D. Bersier, & K. Z. Stanek.* 582, L5 (2003)

Discovery of the Low-Redshift Optical Afterglow of GRB 011121 and Its Progenitor Supernova SN 2001ke. *P. M. Garnavich, K. Z. Stanek, L. Wyrzykowski, L. Infante, E. Bendek, D. Bersier, S. T. Holland, S. Jha, T. Matheson, R. P. Kirshner, K. Krisciunas, M. M. Phillips, & R. G. Carlberg.* 582, 924 (2003)

GRB 021004: Reverse Shock Emission. *Shiho Kobayashi & Bing Zhang.* 582, L75 (2003)

Gravitational Wave Frequencies and Energies in Hypernovae. *Maurice H. P. M. van Putten.* 583, 374 (2003)

Precursor Plerionic Activity and High-Energy Gamma-Ray Emission in the Supranova Model of Gamma-Ray Bursts. *Susumu Inoe, Dafne Guetta, & Franco Pacini.* 583, 379 (2003)

Angular Distribution of Gamma-Ray Bursts and Weak Lensing. *Liliya R. Williams & Natalie Frey.* 583, 594 (2003)

Ultrafast Self-Compton Cooling. *Kunihito Ioka.* 583, 819 (2003)

The High-Energy Gamma-Ray Fluence and Energy Spectrum of GRB 970417A from Observations with Milagrito. *R. Atkins, W. Benbow, D. Berley, M. L. Chen, D. G. Coyne, B. L. Dingus, D. E. Dorfan, R. W. Ellsworth, D. Evans, A. Falcone, L. Fleysher, R. Fleysher, G. Gisler, M. M. Gonzalez, J. A. Goodman, T. J. Haines, C. M. Hoffman, S. Hugenberger, L. A. Kelley, S. Klein, I. Leonor, J. F. McCullough, J. E. McEnery, R. S. Miller, A. I. Mincer, M. F. Morales, P. Nemethy, J. M. Ryan, F. W. Samuelson, B. Shen, A. Shoup, C. Sinnis, A. J. Smith, G. W. Sullivan, T. Tumer, K. Wang, M. O. Wascko, S. Westerhoff, D. A. Williams, T. Yang, & G. B. Yodh.* 583, 824 (2003)

Off-Axis Neutrino Scattering in Gamma-Ray Burst Central Engines. *Warner A. Miller, Nathan D. George, Arkady Kheyfets, & John M. McGhee.* 583, 833 (2003)

Observations of the X-Ray Afterglows of GRB 011211 and GRB 001025 by *XMM-Newton*. *Konstantin N. Borozdin & Sergey P. Trudolyubov.* 583, L57 (2003)

The Strongly Polarized Afterglow of GRB 020405. *D. Bersier, B. McLeod, P. M. Garnavich, M. J. Holman, T. Gray, J. Quinn, J. Kaluzny, P. M. Challis, R. G. Bower, D. J. Wilman, J. S. Heyl, S. T. Holland, V. Hradecky, S. Jha, & K. Z. Stanek.* 583, L63 (2003)

Gamma-Ray Burst Hubble Diagram to $z = 4.5$. *Bradley E. Schaefer.* 583, L67 (2003)

Explaining the Gamma-Ray Burst $E_{\rm peak}$ Distribution. *Bradley E. Schaefer.* 583, L71 (2003)

Collapsar Uncorking and Jet Eruption in Gamma-Ray Bursts. *E. Waxman & P. Mészáros.* 584, 390 (2003)

X-Ray Lines from Gamma-Ray Bursts. *Pawan Kumar & Ramesh Narayan.* 584, 895 (2003)

Comparison of Redshift-known Gamma-Ray Bursts with the Main Groups of Bright BATSE Events. *Igor G. Mitrofanov, Anton B. Sanin, Dmitrij S. Anfimov, Maxim L. Litvak, Michael S. Briggs, William S. Paciesas, Geoffrey N. Pendleton, Robert D. Preece, & Charles A. Meegan.* 584, 904 (2003)

GRB 010921: Strong Limits on an Underlying Supernova from the *Hubble Space Telescope*. *P. A. Price, S. R. Kulkarni, B. P. Schmidt, T. J. Galama, J. S. Bloom, E. Berger, D. A. Frail, S. G. Djorgovski, D. W. Fox, A. A. Henden, S. Klose, F. A. Harrison, D. E. Reichart, R. Sari, S. A. Yost, T. S. Axelrod, P. McCarthy, J. Holtzman, J. P. Halpern, R. Kimble, J. C. Wheeler, R. A. Chevalier, K. Hurley, G. R. Ricker, E. Costa, F. Frontera, & L. Piro.* 584, 931 (2003)

Theory and Astrophysical Consequences of a Magnetized Torus around a Rapidly Rotating Black Hole. *Maurice H. P. M. van Putten & Amir Levinson.* 584, 937 (2003)

The Unusual Optical Afterglow of the Gamma-Ray Burst GRB 021004: Color Changes and Short-Timescale Variability. *D. Bersier, K. Z. Stanek, J. N. Winn, T. Gray, M. J. Holman, T. Matheson, B. Mochejska, D. Steeghs, A. R. Walker, P. M. Garnavich, J. Quinn, S. Jha, K. H. Cook, W. W. Craig, P. J. Meintjes, & J. J. Calitz.* 584, L43 (2003)

Optical Spectropolarimetry of the GRB 020813 Afterglow. *Aaron J. Barth, Re'em Sari, Marshall H. Cohen, Robert W. Goodrich, Paul A. Price, Derek W. Fox, J. S. Bloom, Alicia M. Soderberg, & S. R. Kulkarni.* 584, L47 (2003)

The Sources of Gamma-Ray Bursts and Their Connections with QSOs and Active Galaxies. *G. R. Burbidge.* 585, 112 (2003)

Is the Afterglow of Gamma-Ray Burst GRB 021004 Unusual? *Shlomo Dado, Arnon Dar, & A. De Rújula.* 585, L15 (2003)

Neutron-fed Afterglows of Gamma-Ray Bursts. *Andrei M. Beloborodov.* 585, L19 (2003)

Heavy-Element Abundances and Dust Depletions in the Host Galaxies of Three Gamma-Ray Bursts. *Sandra Savaglio, S. Michael Fall, & Fabrizio Fiore.* 585, 638 (2003)

High-Energy Emission from the Prompt Gamma-Ray Burst. *Dafne Guetta & Jonathan Granot.* 585, 885 (2003)

On the X-Ray Lines in the Afterglows of Gamma-Ray Bursts. *Shlomo Dado, Arnon Dar, & A. De Rújula.* 585, 890 (2003)

Continued Radio Monitoring of the Gamma-Ray Burst 991208. *T. J. Galama, D. A. Frail, R. Sari, E. Berger, G. B. Taylor, & S. R. Kulkarni.* 585, 899 (2003)

Polarized Gravitational Waves from Gamma-Ray Bursts. *Shiho Kobayashi & Peter Mészáros.* 585, L89 (2003)

Keck Spectroscopy and *Hubble Space Telescope* Imaging of GRB 000926: Probing a Host Galaxy at $z = 2.038$. *S. Castro, T. J. Galama, F. A. Harrison, J. A. Holtzman, J. S. Bloom, S. G. Djorgovski, & S. R. Kulkarni.* 586, 128 (2003)

Relativistic Jets in Collapsars. *Weiqun Zhang, S. E. Woosley, & A. I. MacFadyen.* 586, 356 (2003)

Discovery of Early Optical Emission from GRB 021211. *D. W. Fox, P. A. Price, A. M. Soderberg, E. Berger, S. R. Kulkarni, R. Sari, D. A. Frail, F. A. Harrison, S. A. Yost, K. Matthews, B. A. Peterson, I. Tanaka, J. Christiansen, & G. H. Moriarty-Schieven.* 586, L5 (2003)

The Early Light Curve of the Optical Afterglow of GRB 021211. *Weidong Li, Alexei V. Filippenko, Ryan Chornock, & Saurabh Jha.* 586, L9 (2003)

Broadband Modeling of GRB 021004. *Jeremy S. Heyl & Rosalba Perna.* 586, L13 (2003)

Fast X-Ray Transients and Their Connection to Gamma-Ray Bursts. *Vadim A. Arefiev, William C. Priedhorsky, & Konstantin N. Borozdin.* 586, 1238 (2003)

Gamma-Ray Bursts from Delayed Collapse of Neutron Stars to Quark Matter Stars. *Z. Berezhiani, I. Bombaci, A. Drago, F. Frontera, & A. Lavagno.* 586, 1250 (2003)

Nucleosynthesis in Gamma-Ray Burst Accretion Disks. *Jason Pruet, S. E. Woosley, & R. D. Hoffman.* 586, 1254 (2003)

High-Resolution Grating Spectroscopy of GRB 020405 with the *Chandra* Low Energy Transmission Grating Spectrometer. *N. Mirabal, F. Paerels, & J. P. Halpern.* 587, 128 (2003)

Hubble Space Telescope and Ground-based Optical and Ultraviolet Observations of GRB 010222. *T. J. Galama, D. Reichart, T. M. Brown, R. A. Kimble, P. A. Price, E. Berger, D. A. Frail, S. R. Kulkarni, S. A. Yost, A. Gal-Yam, J. S. Bloom, F. A. Harrison, R. Sari, D. Fox, & S. G. Djorgovski.* 587, 135 (2003)

A Radio Flare from GRB 020405: Evidence for a Uniform Medium around a Massive Stellar Progenitor. *E. Berger, A. M. Soderberg, D. A. Frail, & S. R. Kulkarni.* 587, L5 (2003)

A Submillimeter and Radio Survey of Gamma-Ray Burst Host Galaxies: A Glimpse into the Future of Star Formation Studies. *E. Berger, L. L. Cowie, S. R. Kulkarni, D. A. Frail, H. Aussel, & A. J. Barger.* 588, 99 (2003)

GRB 021004: A Massive Progenitor Star Surrounded by Shells. *Bradley E. Schaefer, C. L. Gerardy, P. Höflich, A. Panaitescu, R. Quimby, J. Mader, G. J. Hill, P. Kumar, J. C. Wheeler, M. Eracleous, S. Sigurdsson, P. Mészáros, B. Zhang, L. Wang, F. V. Hessman, & V. Petrosian.* 588, 387 (2003)

Nuclear Composition of Gamma-Ray Burst Fireballs. *Andrei M. Beloborodov.* 588, 931 (2003)

Comparison of the Gamma-Ray Burst Sensitivity of Different Detectors. *David L. Band.* 588, 945 (2003)

Discovery of GRB 020405 and Its Late Red Bump. *P. A. Price, S. R. Kulkarni, E. Berger, D. W. Fox, J. S. Bloom, S. G. Djorgovski, D. A. Frail, T. J. Galama, F. A. Harrison, P. McCarthy, D. E. Reichart, R. Sari, S. A. Yost, H. Jerjen, K. Flint, A. Phillips, B. E. Warren, T. S. Axelrod, R. A. Chevalier, J. Holtzman, R. A. Kimble, B. P. Schmidt, J. C. Wheeler, F. Frontera, E. Costa, L. Piro, K. Hurley, T. Cline, C. Guidorzi, E. Montanari, E. Mazets, S. Golenetskii, I. Mitrofanov, D. Anfimov, A. Kozyrev, M. Litvak, A. Sanin, W. Boynton, C. Fellows, K. Harshman, C. Shinohara, A. Gal-Yam, E. Ofek, & Y. Lipkin.* 589, 838 (2003)

Nanolensing of Gamma-Ray Bursts. *Mark A. Walker & Geraint F. Lewis.* 589, 844 (2003)

Gravitational Radiation from Gamma-Ray Burst Progenitors. *Shiho Kobayashi & Peter Mészáros.* 589, 861 (2003)

Wind-Interaction Models for the Early Afterglows of Gamma-Ray Bursts: The Case of GRB 021004. *Zhi-Yun Li & Roger A. Chevalier.* 589, L69 (2003)

Variability of Submillijansky Radio Sources. *C. L. Carilli, R. J. Ivison, & D. A. Frail.* 590, 192 (2003)

A Standard Kinetic Energy Reservoir in Gamma-Ray Burst Afterglows. *E. Berger, S. R. Kulkarni, & D. A. Frail.* 590, 379 (2003)

The Broadband Afterglow of GRB 980703. *D. A. Frail, S. A. Yost, E. Berger, F. A. Harrison, R. Sari, S. R. Kulkarni, G. B. Taylor, J. S. Bloom, D. W. Fox, G. H. Moriarty-Schieven, & P. A. Price.* 590, 992 (2003)

Integral and *XMM-Newton* Observations of the Weak Gamma-Ray Burst GRB 030227. *S. Mereghetti, D. Götz, A. Tiengo, V. Beckmann, J. Borkowski, T.J.-L. Courvoisier, A. von Kienlin, V. Schoenfelder, J. P. Roques, L. Bouchet, P. Ubertini, A. Castro-Tirado, F. Lebrun, J. Paul, N. Lund, J. M. Mas-Hesse, W. Hermsen, P. R. den Hartog, & C. Winkler.* 590, L73 (2003)

Delayed Flashes from Counterjets of Gamma-Ray Bursts. *Ryo Yamazaki, Kunihito Ioka, & Takashi Nakamura.* 591, 283 (2003)

How Massive Single Stars End Their Life. *A. Heger, C. L. Fryer, S. E. Woosley, N. Langer, & D. H. Hartmann.* 591, 288 (2003)

The Redshift and the Host Galaxy of GRB 980613: A Gammay-Ray Burst from a Merger-induced Starburst? *S. G. Djorgovski, J. S. Bloom, & S. R. Kulkarni.* 591, L13 (2003)

Spectroscopic Discovery of the Supernova 2003dh Associated with GRB 030329. *K. Z. Stanek, T. Matheson, P. M. Garnavich, P. Martini, P. Berlind, N. Caldwell, P. Challis, W. R. Brown, R. Schild, K. Krisciunas, M. L. Calkins, J. C. Lee, N. Hathi, R. A. Jansen, R. Windhorst, L. Echevarria, D. J. Eisenstein, B. Pindor, E. W. Olszewski, P. Harding, S. T. Holland, & D. Bersier.* 591, L17 (2003)

GRB 030226 in a Density-Jump Medium. *Z. G. Dai & X. F. Wu.* 591, L21 (2003)

The Evolution of a Structured Relativistic Jet and Gamma-Ray Burst Afterglow Light Curves. *Pawan Kumar & Jonathan Granot.* 591, 1075 (2003)

Constraining the Structure of Gamma-Ray Burst Jets through the Afterglow Light Curves. *Jonathan Granot & Pawan Kumar.* 591, 1086 (2003)

Dirty Fireballs and Orphan Afterglows: A Tale of Two Transients. *James E. Rhoads.* 591, 1097 (2003)

Neutrinos from the Propagation of a Relativistic Jet through a Star. *Jason Pruet.* 591, 1104 (2003)

Probing Planck-Scale Physics with Extragalactic Sources? *Y. Jack Ng, W. A. Christiansen, & H. van Dam.* 591, L87 (2003)

Gamma-Ray Bursts as X-Ray Depth Gauges of the Universe. *P. Mészáros & M. J. Rees.* 591, L91 (2003)

External Shock Model for the Large-Scale, Relativistic X-Ray Jets from the Microquasar XTE J1550−564. *X. Y. Wang, Z. G. Dai, & T. Lu.* 592, 347 (2003)

On the Generation of Ultra–High-Energy Cosmic Rays in Gamma-Ray Bursts: A Reappraisal. *Mario Vietri, Daniel De Marco, & Dafne Guetta.* 592, 378 (2003)

The Effect of Angular Structure of Gamma-Ray Burst Outflows on the Afterglow Emission. *A. Panaitescu & P. Kumar.* 592, 390 (2003)

The Synoptic *Swift* Synergy—Catching Gamma-Ray Bursts Before They Fly. *Jeremy S. Heyl.* 592, 401 (2003)

Properties of Fast Submillimeter Time Structures during a Large Solar Flare. *Jean-Pierre Raulin, Pierre Kaufmann, Carlos G. Giménez de Castro, Alessandra A. Pacini, Vladimir S. Makhmutov, Hugo Levato, & Marta Rovira.* 592, 580 (2003)

Perspective on Afterglows: Numerically Computed Views, Light Curves, and the Analysis of Homogeneous and Structured Jets with Lateral Expansion. *Jay D. Salmonson.* 592, 1002 (2003)

A Comparative Study of the X-Ray Afterglow Properties of Optically Bright and Dark Gamma-Ray Bursts. *M. De Pasquale, L. Piro, R. Perna, E. Costa, M. Feroci, G. Gandolfi, J. in 't Zand, L. Nicastro, F. Frontera, L. A. Antonelli, F. Fiore, & G. Stratta.* 592, 1018 (2003)

The Very Faint *K*-Band Afterglow of GRB 020819 and the Dust Extinction Hypothesis of the Dark Bursts. *S. Klose, A. A. Henden, J. Greiner, D. H. Hartmann, N. Cardiel, A. J. Castro-Tirado, J. M. Castro Cerón, J. Gallego, J. Gorosabel, B. Stecklum, N. Tanvir, U. Thiele, F. J. Vrba, & A. Zeh.* 592, 1025 (2003)

Observational Evidence for a Correlation between Peak Luminosities and Beaming in Gamma-Ray Bursts. *Maurice H. P. M. van Putten & Tania Regimbau.* 593, L15 (2003)

On the Spectrum and Spectropolarimetry of Type Ic Hypernova SN 2003dh/GRB 030329. *K. S. Kawabata, J. Deng, L. Wang, P. Mazzali, K. Nomoto, K. Maeda, N. Tominaga, H. Umeda, M. Iye, G. Kosugi, Y. Ohyama, T. Sasaki, P. Höflich, J. C. Wheeler, D. J. Jeffery, K. Aoki, N. Kashikawa, T. Takata, N. Kawai, T. Sakamoto, Y. Urata, A. Yoshida, T. Tamagawa, K. Torii, W. Aoki, N. Kobayashi, Y. Komiyama, Y. Mizumoto, J. Noumaru, R. Ogasawara, K. Sekiguchi, Y. Shirasaki, T. Totani, J. Watanabe, & T. Yamada.* 593, L19 (2003)

A Two-Component Model for the Light Curves of Hypernovae. *Keiichi Maeda, Paolo A. Mazzali, Jingsong Deng, Ken'ichi Nomoto, Yuzuru Yoshii, Hiroyuki Tomita, & Yukiyasu Kobayashi.* 593, 931 (2003)

Cosmological X-Ray Flashes in the Off-Axis Jet Model. *Ryo Yamazaki, Kunihito Ioka, & Takashi Nakamura.* 593, 941 (2003)

Iron K Lines from Gamma-Ray Bursts. *T. R. Kallman, P. Mészáros, & M. J. Rees.* 593, 946 (2003)

What We Learn from the Afterglow of GRB 021211. *Shlomo Dado, Arnon Dar, & A. De Rújula.* 593, 961 (2003)

Radio Imaging of Gamma-Ray Burst Jets in Nearby Supernovae. *Jonathan Granot & Abraham Loeb.* 593, L81 (2003)

The Radio Afterglow from the Giant Flare of SGR 1900+14: The Same Mechanism as Afterglows from Classic Gamma-Ray Bursts? *K. S. Cheng & X. Y. Wang.* 593, L85 (2003)

Jets in Gamma-Ray Bursts: Tests and Predictions for the Structured Jet Model. *Rosalba Perna, Re'em Sari, & Dale Frail.* 594, 379 (2003)

The Connection between Spectral Evolution and Gamma-Ray Burst Lag. *Dan Kocevski & Edison Liang.* 594, 385 (2003)

Baryon Loading of Gamma-Ray Burst by Neutron Pickup. *Amir Levinson & David Eichler.* 594, L19 (2003)

Neutron-rich Hydromagnetic Outflows in Gamma-Ray Burst Sources. *Nektarios Vlahakis, Fang Peng, & Arieh Königl.* 594, L23 (2003)

Gamma-Ray Burst Energetics and the Gamma-Ray Burst Hubble Diagram: Promises and Limitations. *J. S. Bloom, D. A. Frail, & S. R. Kulkarni.* 594, 674 (2003)

Gamma-Ray Bursts from Neutron Star Kicks. *Y. F. Huang, Z. G. Dai, T. Lu, K. S. Cheng, & X. F. Wu.* 594, 919 (2003)

Stability of an Ultrarelativistic Blast Wave in an External Medium with a Steep Power-Law Density Profile. *Xiaohu Wang, Abraham Loeb, & Eli Waxman.* 594, 924 (2003)

An Off-Axis Jet Model for GRB 980425 and Low-Energy Gamma-Ray Bursts. *Ryo Yamazaki, Daisuke Yonetoku, & Takashi Nakamura.* 594, L79 (2003)

Linear Polarization in Gamma-Ray Bursts: The Case for an Ordered Magnetic Field. *Jonathan Granot & Arieh Königl.* 594, L83 (2003)

The Supernova Associated with GRB 030329. *Shlomo Dado, Arnon Dar, & A. De Rújula.* 594, L89 (2003)

Nucleosynthesis in Baryon-Rich Outflows Associated with Gamma-Ray Bursts. *Susumu Inoue, Nobuyuki Iwamoto, Manabu Orito, & Mariko Terasawa.* 595, 294 (2003)

Multiband Optical Follow-up Observations of GRB 020813 at the Kiso and Bisei Observatories. *Y. Urata, S. Nishiura, T. Miyata, H. Mito, T. Kawabata, Y. Nakada, T. Aoki, T. Soyano, K. Tarusawa, A. Yoshida, T. Tamagawa, & K. Makishima.* 595, L21 (2003)

Circular Polarization from Gamma-Ray Burst Afterglows. *Makoto Matsumiya & Kunihito Ioka.* 595, L25 (2003)

Delayed Soft X-Ray Emission Lines in the Afterglow of GRB 030227. *D. Watson, J. N. Reeves, J. Hjorth, P. Jakobsson, & K. Pedersen.* 595, L29 (2003)

Millimeter Observations of GRB 030329: Continued Evidence for a Two-Component Jet. *Kartik Sheth, Dale A. Frail, Stephen White, Mousumi Das, Frank Bertoldi, Fabian Walter, Shri R. Kulkarni, & Edo Berger.* 595, L33 (2003)

GRB 021004: A Possible Shell Nebula around a Wolf-Rayet Star Gamma-Ray Burst Progenitor. *N. Mirabal, J. P. Halpern, Ryan Chornock, Alexei V. Filippenko, D. M. Terndrup, E. Armstrong, J. Kemp, J. R. Thorstensen, M. Tavarez, & C. Espaillat.* 595, 935 (2003)

Gamma-Ray Burst Early Optical Afterglows: Implications for the Initial Lorentz Factor and the Central Engine. *Bing Zhang, Shiho Kobayashi, & Peter Mészáros.* 595, 950 (2003)

Search for Relativistic Curvature Effects in Gamma-Ray Burst Pulses. *Dan Kocevski, Felix Ryde, & Edison Liang.* 596, 389 (2003)

Explosive Nucleosynthesis Associated with Formation of Jet-induced Gamma-Ray Bursts in Massive Stars. *S. Nagataki, A. Mizuta, S. Yamada, H. Takabe, & K. Sato.* 596, 401 (2003)

The Most Probable Cause for the High Gamma-Ray Polarization in GRB 021206. *Jonathan Granot.* 596, L17 (2003)

Relativistic Magnetohydrodynamics with Application to Gamma-Ray Burst Outflows. I. Theory and Semianalytic Trans-Alfvénic Solutions. *Nektarios Vlahakis & Arieh Königl.* 596, 1080 (2003)

Relativistic Magnetohydrodynamics with Applications to Gamma-Ray Burst Outflows. II. Semianalytic Super-Alfvénic Solutions. *Nektarios Vlahakis & Arieh Königl.* 596, 1104 (2003)

Searches for Fast Radio Transients. *J. M. Cordes & M. A. McLaughlin.* 596, 1142 (2003)

Polarization of Gamma-Ray Bursts via Scattering off a Relativistic Sheath. *David Eichler & Amir Levinson.* 596, L147 (2003)

ROTSE-III Observations of the Early Afterglow from GRB 030329. *D. A. Smith, E. S. Rykoff, C. W. Akerlof, M. C. Ashley, D. Bizyaev, T. A. McKay, A. Mukadam, A. Phillips, R. Quimby, B. Schaefer, D. Sullivan, H. F. Swan, W. T. Vestrand, J. C. Wheeler, & J. Wren.* 596, L151 (2003)

Early Optical Afterglows from Wind-Type Gamma-Ray Bursts. *Shiho Kobayashi & Bing Zhang.* 597, 455 (2003)

A Study of the Afterglows of Four Gamma-Ray Bursts: Constraining the Explosion and Fireball Model. *S. A. Yost, F. A. Harrison, R. Sari, & D. A. Frail.* 597, 459 (2003)

Very High Column Density and Small Reddening toward GRB 020124 at $z = 3.20$. *J. Hjorth, P. Moller, J. Gorosabel, J. P. U. Fynbo, S. Toft, A. O. Jaunsen, A. A. Kaas, T. Pursimo, K. Torii, T. Kato, H. Yamaoka, A. Yoshida, B. Thomsen, M. I. Anderson, I. Burud, J. M. Castro Ceron, A. J. Castro-Tirado, A. S. Fruchter, L. Kaper, C. Kouveliotou, N. Masetti, E. Palazzi, H. Pederson, E. Pian, J. Rhoads, E. Rol, N. R. Tanvir, P. M. Vreeswijk, R. A. M. J. Wijers, & E. P. J. van den Heuvel.* 597, 699 (2003)

Polarization of Prompt Gamma-Ray Burst Emission: Evidence for Electromagnetically Dominated Outflow. *M. Lyutikov, V. I. Pariev, & R. D. Blandford.* 597, 998 (2003)

The X-Ray Afterglows of GRB 020813 and GRB 021004 with *Chandra* HETGS: Possible Evidence for a Supernova prior to GRB 020813. *Nathanial R. Butler, Herman L. Marshall, George R. Ricker, Roland K. Vanderspek, Peter G. Ford, Geoffrey B. Crew, Donald Q. Lamb, & J. Garrett Jernigan.* 597, 1010 (2003)

The Earliest Optical Observations of GRB 30329. *K. Torii, T. Kato, H. Yamaoka, T. Kohmura, Y. Okamoto, K. Ohnishi, K. Kadota, S. Yoshida, K. Kinugasa, M. Kohama, T. Oribe, & T. Kawabata.* 597, L101 (2003)

High-Precision Photometry of the Gamma-Ray Burst GRB 020813: The Smoothest Afterglow Yet. *L. T. Laursen & K. Z. Stanek.* 597, L107 (2003)

Modeling Fluctuations in the Gamma-Ray Burst Afterglow Light Curves. *E. Nakar & T. Piran.* 598, 400 (2003)

Explaining the High-Energy Spectral Component in GRB 941017. *Jonathan Granot & Dafne Guetta.* 598, L11 (2003)

A Failed Gamma-Ray Burst with Dirty Energetic Jets Spirited Away? New Implications for the Gamma-Ray Burst–Supernova Connection from SN 2002ap. *Tomonori Totani.* 598, 1151 (2003)

The Cosmic Dispersion Measure from Gamma-Ray Burst Afterglows: Probing the Reionization History and the Burst Environment. *Kunihito Ioka.* 598, L79 (2003)

Altered Luminosity Functions of Relativistically Beamed Jet Populations. *M. L. Lister.* 599, 105 (2003)

Pair Loading in Gamma-Ray Burst Fireballs and Prompt Emission from Pair-rich Reverse Shocks. *Zhuo Li, Z. G. Dai, T. Lu, & L. M. Song.* 599, 380 (2003)

HETE-2 Localization and Observation of the Bright, X-Ray–rich Gamma-Ray Burst GRB 021211. *G. B. Crew, D. Q. Lamb, G. R. Ricker, J.-L. Atteia, N. Kawai, R. Vanderspek, J. Villasenor, J. Doty, G. Prigozhin, J. G. Jernigan, C. Graziani, Y. Shirasaki, T. Sakamoto, M. Suzuki, N. Butler, K. Hurley, T. Tamagawa, A. Yoshida, M. Matsuoka, E. E. Fenimore, M. Galassi, C. Barraud, M. Boer, J.-P. Dezalay, J.-F. Olive, A. Levine, G. Monnelly, F. Martel, E. Morgan, T. Q. Donaghy, K. Torii, S. E. Woosley, T. Cline, J. Braga, R. Manchanda, G. Pizzichini, K. Takagishi, & M. Yamauchi.* 599, 387 (2003)

Photometry and Spectroscopy of GRB 03029 and Its Associated Supernova 2003dh: The First Two Months. *T. Matheson, P. M. Garnavich, K. Z. Stanek, D. Bersier, S. T. Holland, K. Krisciunas, N. Caldwell, P. Berlind, J. S. Bloom, M. Bolte, A. Z. Bonanos, M. J. I. Brown, W. R. Brown, M. L. Calkins, P. Challis, R. Chornock, L. Echevarria, D. J. Eisenstein, M. E. Everett, A. V. Filippenko, K. Flint, R. J. Foley, D. L. Freedman, Mario Hamuy, P. Harding, N. P. Hathi, M. Hicken, C. Hoopes, C. Impey, B. T. Jannuzi, R. A. Jansen, S. Jha, J. Kaluzny, S. Kannappan, R. P. Kirshner, D. W. Latham, J. C. Lee, D. C. Leonard, W. Li, K. L. Luhman, P. Martini, H. Mathis, J. Maza, S. T. Megeath, L. R. Miller, D. Minniti, E. W. Olszewski, M. Papenkova, M. M. Phillips, B. Pindor, D. D. Sasselov, R. Schild, H. Schweiker, T. Spahr, J. Thomas-Osip, I. Thompson, D. Weisz, R. Windhorst, & D. Zaritsky.* 599, 394 (2003)

A Radio Survey of Type Ib and Ic Supernovae: Searching for Engine-driven Supernovae. *E. Berger, S. R. Kulkarni, D. A. Frail, & A. M. Soderberg.* 599, 408 (2003)

Axisymmetric Magnetohydrodynamic Simulations of the Collapsar Model for Gamma-Ray Bursts. *Daniel Proga, Andrew I. MacFadyen, Philip J. Armitage, & Mitchell C. Begelman.* 599, L5 (2003)

Earliest Detection of the Optical Afterglow of GRB 030329 and Its Variability. *R. Sato, N. Kawai, M. Suzuki, Y. Yatsu, J. Kataoka, R. Takagi, K. Yanagisawa, & H. Yamaoka.* 599, L9 (2003)

The First Two Host Galaxies of X-Ray Flashes: XRF 011030 and XRF 020427. *J. S. Bloom, D. Fox, P. G. van Dokkum, S. R. Kulkarni, E. Berger, S. G. Djorgovski, & D. A. Frail.* 599, 957 (2003)

GRB 011121: A Collimated Outflow into Wind-blown Surroundings. *J. Greiner, S. Klose, M. Salvato, A. Zeh, R. Schwarz, D. H. Hartmann, N. Masetti, B. Stecklum, G. Lamer, N. Lodieu, R. D. Scholz, C. Sterken, J. Gorosabel, I. Burud, J. Rhoads, I. Mitrofanov, M. Litvak, A. Sanin, V. Grinkov, M. I. Andersen, J. M. Castro Cerón, A. J. Castro-Tirado, A. Fruchter, J. U. Fynbo, J. Hjorth, L. Kaper, C. Kouveliotou, E. Palazzi, E. Pian, E. Rol, N. R. Tanvir, P. M. Vreeswijk, R. A. M. J. Wijers, & E. van den Heuvel.* 599, 1223 (2003)

The Type Ic Hypernova SN 2003dh/GRB 030329. *Paolo A. Mazzali, Jinsong Deng, Nozomu Tominaga, Keiichi Maeda, Ken'ichi Nomoto, Thomas Matheson, Koji S. Kawabata, Krzysztof Z. Stanek, & Peter M. Garnavich.* 599, L95 (2003)

GAMMA RAYS: OBSERVATIONS

Detection of TeV Gamma Rays from the BL Lacertae Object 1ES 1959+650 with the Whipple 10 Meter Telescope. *J. Holder, I. H. Bond, P. J. Boyle, S. M. Bradbury, J. H. Buckley, D. A. Carter-Lewis, W. Cui, C. Dowdall, C. Duke, I. de la Calle Perez, A. Falcone, D. J. Fegan, S. J. Fegan, J. P. Finley, L. Fortson, J. A. Gaidos, K. Gibbs, S. Gammell, J. Hall, T. A. Hall, A. M. Hillas, D. Horan, M. Jordan, M. Kertzman, D. Kieda, J. Kildea, J. Knapp, K. Kosack, H. Krawczynski, F. Krennrich, S. LeBohec, E. T. Linton, J. Lloyd-Evans, P. Moriarty, D. Müller, T. N. Nagai, R. Ong, M. Page, R. Pallassini, D. Petry, B. Power-Mooney, J. Quinn, P. Rebillot, P. T. Reynolds, H. J. Rose, M. Schroedter, G. H. Sembroski, S. P. Swordy, V. V. Vassiliev, S. P. Wakely, G. Walker, & T. C. Weekes.* 583, L9 (2003)

Possible New γ-Ray Pulsar Detections by the *AGILE* and *GLAST* Missions: An Outer Gap Model Look at the Parkes Pulsar Catalog. *Diego F. Torres & Sebastián E. Nuza.* 583, L25 (2003)

The High-Energy Gamma-Ray Fluence and Energy Spectrum of GRB 970417A from Observations with Milagrito. *R. Atkins, W. Benbow, D. Berley, M. L. Chen, D. G. Coyne, B. L. Dingus, D. E. Dorfan, R. W. Ellsworth, D. Evans, A. Falcone, L. Fleysher, R. Fleysher, G. Gisler, M. M. Gonzalez, J. A. Goodman, T. J. Haines, C. M. Hoffman, S. Hugenberger, L. A. Kelley, S. Klein, I. Leonor, J. F. McCullough, J. E. McEnery, R. S. Miller, A. I. Mincer, M. F. Morales, P. Nemethy, J. M. Ryan, F. W. Samuelson, B. Shen, A. Shoup, C. Sinnis, A. J. Smith, G. W. Sullivan, T. Tumer, K. Wang, M. O. Wascko, S. Westerhoff, D. A. Williams, T. Yang, & G. B. Yodh.* 583, 824 (2003)

Search for TeV Emissions from Pulsars in Binary Systems. *T. A. Hall, I. H. Bond, S. M. Bradbury, J. H. Buckley, M. J. Carson, D. A. Carter-Lewis, M. Catanese, S. Dunlea, M. D'Vali, D. J. Fegan, S. J. Fegan, J. P. Finley, J. A. Gaidos, G. H. Gillanders, A. M. Hillas, D. Horan, M. Kertzman, D. Kieda, J. Kildea, J. Knapp, F. Krennrich, M. J. Lang, S. LeBohec, R. Lessard, J. Lloyd-Evans, B. McKernan, P. Moriarty, D. Muller, R. Ong, J. Quinn, P. T. Reynolds, H. J. Rose, G. H. Sembroski, S. P. Swordy, V. V. Vassiliev, & T. C. Weekes.* 583, 853 (2003)

BATSE Soft Gamma-Ray Observations of GRO J0422+32. *J. C. Ling & Wm. A. Wheaton.* 584, 399 (2003)

On the Magnetic Fields and Particle Acceleration in Cassiopeia A. *Jacco Vink & J. Martin Laming.* 584, 758 (2003)

Signatures of Hadronic Cosmic Rays in Starbursts? High-Energy Photons and Neutrinos from NGC 253. *Gustavo E. Romero & Diego F. Torres.* 586, L33 (2003)

A Search for Correlations of TeV Gamma Rays with Ultra–High-Energy Cosmic Rays. *C. W. Akerlof, S. Biller, P. Boyle, J. Buckley, D. A. Carter-Lewis, M. Catanese, M. F. Cawley, V. Connaughton, D. J. Fegan, J. Finley, J. Gaidos, A. M. Hillas, F. Krennrich, R. C. Lamb, R. Lessard, J. McEnery, G. Mohanty, N. A. Porter, J. Quinn, A. Rodgers, H. J. Rose, F. Samuelson, M. S. Schubnell, G. Sembroski, R. Srinivasan, T. C. Weekes, & J. Zweerink.* 586, 1232 (2003)

EGRET Upper Limits on the High-Energy Gamma-Ray Emission of Galaxy Clusters. *O. Reimer, M. Pohl, P. Sreekumar, & J. R. Mattox.* 588, 155 (2003)

Discovery of a New Radio Galaxy within the Error Box of the Unidentified Gamma-Ray Source 3EG J1735−1500. *J. A. Combi, G. E. Romero, J. M. Paredes, D. F. Torres, & M. Ribó.* 588, 731 (2003)

Neutrinos from Accreting Neutron Stars. *Luis A. Anchordoqui, Diego F. Torres, Thomas P. McCauley, Gustavo E. Romero, & Felix A. Aharonian.* 589, 481 (2003)

Search for a Point-Source Counterpart of the Unidentified Gamma-Ray Source TeV J2032+4130 in Cygnus. *R. Mukherjee, J. P. Halpern, E. V. Gotthelf, M. Eracleous, & N. Mirabal.* 589, 487 (2003)

The *Reuven Ramaty High Energy Solar Spectroscopic Imager* Observation of the 1809 keV Line from Galactic ^{26}Al. *D. M. Smith.* 589, L55 (2003)

Dense Gas Clouds and the Unidentified EGRET Sources. *Mark Walker, Masaki Mori, & Michiko Ohishi.* 589, 810 (2003)

Testing of Inverse Compton Models for Active Galactic Nuclei with Gamma-Ray and Radio Observations. *A. Lähteenmäki & E. Valtaoja.* 590, 95 (2003)

The Gamma-Ray Blazar Content of the Northern Sky. *David Sowards-Emmerd, Roger W. Romani, & Peter F. Michelson.* 590, 109 (2003)

Electrodynamics of an Outer Gap Accelerator: Formation of a Soft Power-Law Spectrum between 100 MeV and 3 GeV. *Kouichi Hirotani, Alice K. Harding, & Shinpei Shibata.* 591, 334 (2003)

Search for TeV Gamma Rays from SN 1987A in 2001. *R. Enomoto, L. T. Ksenofontov, H. Katagiri, K. Tsuchiya, A. Asahara, G. V. Bicknell, R. W. Clay, P. G. Edwards, S. Gunji, S. Hara, T. Hara, H. Hattori, Sei. Hayashi, Shin. Hayashi, C. Itoh, S. Kabuki, F. Kajino, A. Kawachi, T. Kifune, H. Kubo, J. Kushida, Y. Matsubara, Y. Mizumoto, M. Mori, H. Moro, H. Muraishi, Y. Muraki, T. Naito, T. Nakase, D. Nishida, K. Nishijima, M. Ohishi, K. Okumura, J. R. Patterson, R. J. Protheroe, K. Sakurazawa, D. L. Swaby, T. Tanimori, F. Tokanai, H. Tsunoo, T. Uchida, A. Watanabe, S. Watanabe, S. Yanagita, T. Yoshida, & T. Yoshikoshi.* 591, L25 (2003)

On the Cross-Correlation between the Arrival Direction of Ultra–High-Energy Cosmic Rays, BL Lacertae Objects, and EGRET Detections: A New Way to Identify EGRET Sources? *Diego F. Torres, Stephen Reucroft, Olaf Reimer, & Luis A. Anchordoqui.* 595, L13 (2003)

Observation of TeV Gamma Rays from the Crab Nebula with Milagro Using a New Background Rejection Technique. *R. Atkins, W. Benbow, D. Berley, E. Blaufuss, J. Bussons, D. G. Coyne, R. S. Delay, T. DeYoung, B. L. Dingus, D. E. Dorfan, R. W. Ellsworth, A. Falcone, L. Fleysher, R. Fleysher, G. Gisler, M. M. Gonzalez, J. A. Goodman, T. J. Haines, E. Hays, C. M. Hoffman, L. A. Kelley, R. W. Laird, J. McCullough, J. E. McEnery, R. S. Miller, A. I. Mincer, M. F. Morales, P. Nemethy, D. Noyes, J. M. Ryan, F. W. Samuelson, M. Schneider, B. Shen, A. Shoup, G. Sinnis, A. J. Smith, G. W. Sullivan, O. T. Tumer, K. Wang, M. Wascko, D. A. Williams, S. Westerhoff, M. E. Wilson, X. Xu, & G. B. Yodh.* 595, 803 (2003)

First Gamma-Ray Images of a Solar Flare. *G. J. Hurford, R. A. Schwartz, S. Krucker, R. P. Lin, D. M. Smith, & N. Vilmer.* 595, L77 (2003)

High-Resolution Spectroscopy of Gamma-Ray Lines from the X-Class Solar Flare of 2002 July 23. *D. M. Smith, G. H. Share, R. J. Murphy, R. A. Schwartz, A. Y. Shih, & R. P. Lin.* 595, L81 (2003)

Observations of Giant Outbursts from Cygnus X-1. *S. Golenetskii, R. Aptekar, D. Frederiks, E. Mazets, V. Palshin, K. Hurley, T. Cline, & B. Stern.* 596, 1113 (2003)

Chandra/Very Large Array Follow-up of TeV J2032+4131, the Only Unidentified TeV Gamma-Ray Source. *Yousaf M. Butt, Paula Benaglia, Jorge A. Combi, Michael Corcoran, Thomas M. Dame, Jeremy Drake, Marina Kaufman Bernadó, Peter Milne, Francesco Miniati, Martin Pohl, Olaf Reimer, Gustavo E. Romero, & Michael Rupen.* 597, 494 (2003)

Variability of EGRET Gamma-Ray Sources. *P. L. Nolan, W. F. Tompkins, I. A. Grenier, & P. F. Michelson.* 597, 615 (2003)

Modeling the TeV Gamma-Ray Spectra of Two Low-Redshift Active Galactic Nuclei: Markarian 501 and Markarian 421. *A. Konopelko, A. Mastichiadis, J. Kirk, O. C. de Jager, & F. W. Stecker.* 597, 851 (2003)

The Gamma-Ray Blazar PKS 0208−512 from MeV to GeV Energies. *J. Gregory Stacy, W. Thomas Vestrand, & P. Sreekumar.* 598, 216 (2003)

Multi-TeV Gamma-Ray Flares from Markarian 421 in 2000 and 2001 Observed with the Tibet Air Shower Array. *M. Amenomori, S. Ayabe, S. W. Cui, Danzengluobu, L. K. Ding, X. H. Ding, C. F. Feng, Z. Y. Feng, X. Y. Gao, Q. X. Geng, H. W. Guo, H. H. He, M. He, K. Hibino, N. Hotta, Haibing Hu, H. B. Hu, J. Huang, Q. Huang, H. Y. Jia, F. Kajino, K. Kasahara, Y. Katayose, K. Kawata, Labaciren, G. M. Le, J. Y. Li, H. Lu, S. L. Lu, X. R. Meng, K. Mizutani, J. Mu, H. Nanjo, M. Nishizawa, M. Ohnishi, I. Ohta, T. Ouchi, S. Ozawa, J. R. Ren, T. Saito, M. Sakata, T. Sasaki, M. Shibata, A. Shiomi, T. Shirai, H. Sugimoto, K Taira, M. Takita, Y. H. Tan, N. Tateyama, S. Torii, H. Tsuchiya, S. Udo, T. Utsugi, B. S. Wang, H. Wang, X. Wang, Y. G. Wang, L. Xue, Y. Yamamoto, X. C. Yang, Z. H. Ye, G. C. Yu, A. F. Yuan, T. Yuda, H. M. Zhang, J. L. Zhang, N. J. Zhang, X. Y. Zhang, Y. Zhang, Zhaxisangzhu, & X. X. Zhou.* 598, 242 (2003)

Gamma-Ray Spectra and Variability of the Crab Nebula Emission Observed by BATSE. *J. C. Ling & Wm. A. Wheaton.* 598, 334 (2003)

Search for High-Energy Gamma Rays from an X-Ray–Selected Blazar Sample. *I. de la Calle Pérez, I. H. Bond, P. J. Boyle, S. M. Bradbury, J. H. Buckley, D. A. Carter-Lewis, O. Celik, W. Cui, C. Dowdall, C. Duke, A. Falcone, D. J. Fegan, S. J. Fegan, J. P. Finley, L. Fortson, J. A. Gaidos, K. Gibbs, S. Gammell, J. Hall, T. A. Hall, A. M. Hillas, J. Holder, D. Horan, M. Jordan, M. Kertzman, D. Kieda, J. Kildea, J. Knapp, K. Kosack, H. Krawczynski, F. Krennrich, S. LeBohec, E. T. Linton, J. Lloyd-Evans, P. Moriarty, D. Müller, T. N. Nagai, R. A. Ong, M. Page, R. Pallassini, D. Petry, B. Power-Mooney, J. Quinn, P. Rebillot, P. T. Reynolds, H. J. Rose, M. Schroedter, G. H. Sembroski, S. P. Swordy, V. V. Vassiliev, S. P. Wakely, G. Walker, & T. C. Weekes.* 599, 909 (2003)

GAMMA RAYS: THEORY

Gravitational Wave Frequencies and Energies in Hypernovae. *Maurice H. P. M. van Putten.* 583, 374 (2003)

Possible New γ-Ray Pulsar Detections by the *AGILE* and *GLAST* Missions: An Outer Gap Model Look at the Parkes Pulsar Catalog. *Diego F. Torres & Sebastián E. Nuza.* 583, L25 (2003)

Ultrafast Self-Compton Cooling. *Kunihito Ioka.* 583, 819 (2003)

Collapsar Uncorking and Jet Eruption in Gamma-Ray Bursts. *E. Waxman & P. Mészáros.* 584, 390 (2003)

X-Ray Lines from Gamma-Ray Bursts. *Pawan Kumar & Ramesh Narayan.* 584, 895 (2003)

Galactic Gamma-Ray Halo of the Nearby Starbust Galaxy NGC 253. *C. Itoh, R. Enomoto, S. Yanagita, T. Yoshida, & T. G. Tsuru.* 584, L65 (2003)

Gamma Rays from Intergalactic Shocks. *Uri Keshet, Eli Waxman, Abraham Loeb, Volker Springel, & Lars Hernquist.* 585, 128 (2003)

Neutral Beams from Blazar Jets. *Armen M. Atoyan & Charles D. Dermer.* 586, 79 (2003)
Signatures of Hadronic Cosmic Rays in Starbursts? High-Energy Photons and Neutrinos from NGC 253. *Gustavo E. Romero & Diego F. Torres.* 586, L33 (2003)
Extended Acceleration in Slot Gaps and Pulsar High-Energy Emission. *Alex G. Muslimov & Alice K. Harding.* 588, 430 (2003)
Nuclear Composition of Gamma-Ray Burst Fireballs. *Andrei M. Beloborodov.* 588, 931 (2003)
Neutrinos from Accreting Neutron Stars. *Luis A. Anchordoqui, Diego F. Torres, Thomas P. McCauley, Gustavo E. Romero, & Felix A. Aharonian.* 589, 481 (2003)
Delayed Flashes from Counterjets of Gamma-Ray Bursts. *Ryo Yamazaki, Kunihito Ioka, & Takashi Nakamura.* 591, 283 (2003)
Electrodynamics of an Outer Gap Accelerator: Formation of a Soft Power-Law Spectrum between 100 MeV and 3 GeV. *Kouichi Hirotani, Alice K. Harding, & Shinpei Shibata.* 591, 334 (2003)
The Evolution of a Structured Relativistic Jet and Gamma-Ray Burst Afterglow Light Curves. *Pawan Kumar & Jonathan Granot.* 591, 1075 (2003)
Constraining the Structure of Gamma-Ray Burst Jets through the Afterglow Light Curves. *Jonathan Granot & Pawan Kumar.* 591, 1086 (2003)
Radiative Acceleration and Transient, Radiation-induced Electric Fields. *L. Zampieri, R. Turolla, L. Foschini, & A. Treves.* 592, 368 (2003)
The Electron Spectrum in 3C 279 and the Observed Emission Spectrum. *Masaaki Kusunose, Fumio Takahara, & Tomohiro Kato.* 592, L5 (2003)
Perspective on Afterglows: Numerically Computed Views, Light Curves, and the Analysis of Homogeneous and Structured Jets with Lateral Expansion. *Jay D. Salmonson.* 592, 1002 (2003)
Cosmological X-Ray Flashes in the Off-Axis Jet Model. *Ryo Yamazaki, Kunihito Ioka, & Takashi Nakamura.* 593, 941 (2003)
The Connection between Spectral Evolution and Gamma-Ray Burst Lag. *Dan Kocevski & Edison Liang.* 594, 385 (2003)
Gamma-Ray Lines from Asymmetric Supernovae. *Aimee L. Hungerford, Chris L. Fryer, & Michael S. Warren.* 594, 390 (2003)
Baryon Loading of Gamma-Ray Burst by Neutron Pickup. *Amir Levinson & David Eichler.* 594, L19 (2003)
An Off-Axis Jet Model for GRB 980425 and Low-Energy Gamma-Ray Bursts. *Ryo Yamazaki, Daisuke Yonetoku, & Takashi Nakamura.* 594, L79 (2003)
Circular Polarization from Gamma-Ray Burst Afterglows. *Makoto Matsumiya & Kunihito Ioka.* 595, L25 (2003)
Constraints on Cold Dark Matter in the Gamma-Ray Halo of NGC 253. *R. Enomoto, T. Yoshida, S. Yanagita, & C. Itoh.* 596, 216 (2003)
Search for Relativistic Curvature Effects in Gamma-Ray Burst Pulses. *Dan Kocevski, Felix Ryde, & Edison Liang.* 596, 389 (2003)
Coordinated Multiwavelength Observations of BL Lacertae in 2000. *M. Böttcher, A. P. Marscher, M. Ravasio, M. Villata, C. M. Raiteri, H. D. Aller, M. F. Aller, H. Teräsranta, O. Mang, G. Tagliaferri, F. Ahoronian, H. Krawczynski, O. M. Kurtanidze, M. G. Nikolashvili, M. A. Ibrahimov, I. E. Papadakis, K. Tsinganos, K. Sadakane, N. Okada, L. O. Takalo, A. Sillanpää, G. Tosti, S. Ciprini, A. Frasca, E. Marilli, R. Robb, J. C. Noble, S. G. Jorstad, V. A. Hagen-Thorn, V. M. Larionov, R. Nesci, M. Maesano, R. D. Schwartz, J. Basler, P. W. Gorham, H. Iwamatsu, T. Kato, C. Pullen, E. Benítez, J. A. de Diego, M. Moilanen, A. Oksanen, D. Rodriguez, A. C. Sadun, M. Kelly, M. T. Carini, H. R. Miller, S. Catalano, D. Dultzin-Hacyan, J. H. Fan, G. Ghisellini, R. Ishioka, H. Karttunen, P. Keinänen, N. A. Kudryavtseva, M. Lainela, L. Lanteri, E. G. Larionova, K. Matsumoto, J. R. Mattox, I. McHardy, F. Montagni, G. Nucciarelli, L. Ostorero, J. Papamastorakis, M. Pasanen, G. Sobrito, & M. Uemura.* 596, 847 (2003)
A Kinsip between the EGRET Supernova Remnants and Sagittarius A East. *Marco Fatuzzo & Fulvio Melia.* 596, 1035 (2003)
Polarization of Gamma-Ray Bursts via Scattering off a Relativistic Sheath. *David Eichler & Amir Levinson.* 596, L147 (2003)
On Nonprimordial Deuterium Production by Accelerated Particles. *Tijana Prodanović & Brian D. Fields.* 597, 48 (2003)
High-Energy Gamma Rays From FR I Jets. *L. Stawarz, M. Sikora, & M. Ostrowski.* 597, 186 (2003)
Two-Pole Caustic Model for High-Energy Light Curves of Pulsars. *J. Dyks & B. Rudak.* 598, 1201 (2003)

GRAVITATION

Charged Black Holes: Wave Equations for Gravitational and Electromagnetic Perturbations. *Zoltán Perjés & Mátyás Vasúth.* 582, 342 (2003)
Pseudo-Newtonian Potentials to Describe the Temporal Effects on Relativistic Accretion Disks around Rotating Black Holes and Neutron Stars. *Banibrata Mukhopadhyay & Ranjeev Misra.* 582, 347 (2003)
Relativistic Dyson Rings and Their Black Hole Limit. *M. Ansorg, A. Kleinwächter, & R. Meinel.* 582, L87 (2003)
Effects of Differential Rotation on the Maximum Mass of Neutron Stars. *Nicholas D. Lyford, Thomas W. Baumgarte, & Stuart L. Shapiro.* 583, 410 (2003)
Off-Axis Neutrino Scattering in Gamma-Ray Burst Central Engines. *Warner A. Miller, Nathan D. George, Arkady Kheyfets, & John M. McGhee.* 583, 833 (2003)
General Relativistic Electromagnetism and Particle Acceleration in Pulsar Polar Cap. *Nobuyuki Sakai & Shinpei Shibata.* 584, 427 (2003)
Non-Oscillatory Central Difference and Artificial Viscosity Schemes for Relativistic Hydrodynamics. *Peter Anninos & P. Chris Fragile.* 144, 243 (2003)
Diffuse X-Rays from a Distributed Component of Dark Surrounding Sagittarius A*. *Martin Pessah & Fulvio Melia.* 585, L29 (2003)
The Phase Coherence of Light from Extragalactic Sources: Direct Evidence against First-Order Planck-Scale Fluctuations in Time and Space. *Richard Lieu & Lloyd W. Hillman.* 585, L77 (2003)
Black Hole Mass and Spin Coevolution by Mergers. *Scott A. Hughes & Roger D. Blandford.* 585, L101 (2003)
The Critical Rotation of Strange Stars and Rapidly Rotating Pulsars. *Xiaoping Zheng, Shuhua Yang, & Jiarong Li.* 585, L135 (2003)
Stability of Accretion Disk around Rotating Black Holes: A Pseudo–General-Relativistic Fluid Dynamical Study. *Banibrata Mukhopadhyay.* 586, 1268 (2003)
The Lack of Observational Evidence for the Quantum Structure of Spacetime at Planck Scales. *Roberto Ragazzoni, Massimo Turatto, & Wolfgang Gaessler.* 587, L1 (2003)
Cosmological Acceleration through Transition to Constant Scalar Curvature. *Leonard Parker, William Komp, & Daniel A. T. Vanzella.* 588, 663 (2003)
Propagation Speed of Gravity and the Relativistic Time Delay. *Clifford M. Will.* 590, 683 (2003)
Probing Planck-Scale Physics with Extragalactic Sources? *Y. Jack Ng, W. A. Christiansen, & H. van Dam.* 591, L87 (2003)
One-armed Spiral Instability in Differentially Rotating Stars. *Motoyuki Saijo, Thomas W. Baumgarte, & Stuart L. Shapiro.* 595, 352 (2003)
Hollow Cone Accretion Columns and Light-Bending Effects. *D. A. Leahy.* 596, 1131 (2003)
The Decihertz Laser Interferometer Can Determine the Position of the Coalescing Binary Neutron Stars within an Arcminute a Week before the Final Merging Event to the Black Hole. *Ryuichi Takahashi & Takashi Nakamura.* 596, L231 (2003)
The Measurement of the Light Deflection from Jupiter: Experimental Results. *E. B. Fomalont & S. M. Kopeikin.* 598, 704 (2003)

GRAVITATIONAL LENSES

High-Precision Limb-Darkening Measurement of a K3 Giant Using Microlensing. *Dale L. Fields, M. D. Albrow, J. An, J. P. Beaulieu, J. A. R. Caldwell, D. L. DePoy, M. Dominik, B. S. Gaudi, A. Gould, J. Greenhill, K. Hill, U. G. Jorgensen, S. Kane, R. Martin, J. Menzies, R. W. Pogge, K. R. Pollard, P. D. Sackett, K. C. Sahu, P. Vermaak, R. Watson, A. Williams, J. F. Glicenstein, & P. H. Hauschildt.* 596, 1305 (2003)

GRAVITATIONAL LENSING

Intrinsic Degeneracy of Gravitational Lens Time Delays: The Case for a Simple Quadruple System in Λ Cold Dark Matter Cosmology. *HongSheng Zhao & Bo Qin.* 582, 2 (2003)
Lensing and the Centers of Distant Early-Type Galaxies. *Charles R. Keeton.* 582, 17 (2003)
Event Rates and Timescale Distributions from Realistic Microlensing Models of M31. *Edward A. Baltz, Geza Gyuk, & Arlin Crotts.* 582, 30 (2003)
Molecular Gas and Dust at $z = 2.6$ in SMM J14011+0252: A Strongly Lensed Ultraluminous Galaxy, Not a Huge Massive Disk. *D. Downes & P. M. Solomon.* 582, 37 (2003)
Studying the Galactic Bulge through the Spectroscopy of Microlensed Sources. II. Observations. *Stephen R. Kane & Kailash C. Sahu.* 582, 743 (2003)
The Topology of a Weak Lensing Field in the Neighborhood of MS 1054−03. *Jun'ichi Sato, Keiichi Umetsu, Toshifumi Futamase, & Toru Yamada.* 582, L67 (2003)
Gravitational Lens Time Delays in Cold Dark Matter. *C. S. Kochanek.* 583, 49 (2003)

The Multiband Magnification Bias for Gravitational Lenses. *J. Stuart B. Wyithe, Joshua N. Winn, & David Rusin.* 583, 58 (2003)

The Redshift of the Lensed Object in the Einstein Ring B0218+357. *Judith G. Cohen, Charles R. Lawrence, & Roger D. Blandford.* 583, 67 (2003)

How Sensitive Are Weak Lensing Statistics to Dark Energy Content? *Dipak Munshi & Yun Wang.* 583, 566 (2003)

The Mean Number of Extra Microimage Pairs for Macrolensed Quasars. *Jonathan Granot, Paul L. Schechter, & Joachim Wambsganss.* 583, 575 (2003)

Gravitational Lensing Magnification and Time Delay Statistics for Distant Supernovae. *Masamune Oguri, Yasushi Suto, & Edwin L. Turner.* 583, 584 (2003)

Angular Distribution of Gamma-Ray Bursts and Weak Lensing. *Liliya R. Williams & Natalie Frey.* 583, 594 (2003)

The Structure and Dynamics of Luminous and Dark Matter in the Early-Type Lens Galaxy of 0047−281 at $z = 0.485$. *Léon V. E. Koopmans & Tommaso Treu.* 583, 606 (2003)

The Three-Point Correlation Function for Spin-2 Fields. *Masahiro Takada & Bhuvnesh Jain.* 583, L49 (2003)

The Gravitational Lens B1608+656. I. *V*-, *I*-, and *H*-Band *Hubble Space Telescope* Imaging. *G. Surpi & R. D. Blandford.* 584, 100 (2003)

Exotic Lensing Corrections to the Microlensing Optical Depth. *J.-F. Glicenstein.* 584, 278 (2003)

Schechter versus Schechter: Subarcsecond Gravitational Lensing and Inner Halo Profiles. *Chung-Pei Ma.* 584, L1 (2003)

Higher Order Moments of the Cosmic Shear and Other Spin-2 Fields. *Matias Zaldarriaga & Román Scoccimarro.* 584, 559 (2003)

Microlensing of Relativistic Knots in the Quasar HE 1104−1805 AB. *Paul L. Schechter, A. Udalski, M. Szymański, M. Kubiak, G. Pietrzyński, I. Soszyński, P. Woźniak, K. Zebruń, O. Szewczyk, & Ł. Wyrzykowski.* 584, 657 (2003)

Analytic Cross Sections for Substructure Lensing. *Charles R. Keeton.* 584, 664 (2003)

On the Incidence of Strong Gravitational Lensing by Clusters in the Las Campanas Distant Cluster Survey. *Dennis Zaritsky & Anthony H. Gonzalez.* 584, 691 (2003)

Near-Field Microlensing and Its Effects on Stellar Transit Observations by *Kepler*. *Kailash C. Sahu & Ronald L. Gilliland.* 584, 1042 (2003)

Corrective Lenses for High-Redshift Supernovae. *Neal Dalal, Daniel E. Holz, Xuelei Chen, & Joshua A. Frieman.* 585, L11 (2003)

A Brown Dwarf Microlens Candidate from the Second Phase of the Optical Gravitational Lensing Experiment. *Martin C. Smith, Shude Mao, & Przemysław Woźniak.* 585, L65 (2003)

Angular Radii of Stars via Microlensing. *B. Scott Gaudi, David S. Graff, & Cheongho Han.* 586, 451 (2003)

Probing Structures of Distant Extrasolar Planets with Microlensing. *B. Scott Gaudi, Heon-Young Chang, & Cheongho Han.* 586, 527 (2003)

Determining Tangential Peculiar Velocities of Clusters of Galaxies Using Gravitational Lensing. *Sandor M. Molnar & Mark Birkinshaw.* 586, 731 (2003)

Cluster-Cluster Microlensing as a Probe of Intracluster Stars, MACHOs, and Remnants of the First-Generation Stars. *Tomonori Totani.* 586, 735 (2003)

Around-the-Clock Observations of the Q9057+561A,B Gravitationally Lensed Quasar. II. Results for the Second Observing Season. *Wesley N. Colley, Rudolph E. Schild, Cristina Abajas, David Alcalde, Zeki Aslan, Ilfan Bikmaev, Vahram Chavushyan, Luis Chinarro, Jean-Philippe Cournoyer, Richard Crowe, Vladimir Dudinov, Anna Kathinka Dalland Evans, Young-Beom Jeon, Luis J. Goicoechea, Orhan Golbasi, Irek Khamitov, Kjetil Kjernsmo, Hyun Ju Lee, Jonghwan Lee, Ki Won Lee, Myung Gyoon Lee, Omar Lopez-Cruz, Evenvio Mediavilla, Anthony F. J. Moffat, Raul Mujica, Aurora Ullan, José Muñoz, Alexander Oscoz, Myeong-Gu Park, Norman Purves, Oyvind Saanum, Nail Sakhibullin, Miquel Serra-Ricart, Igor Sinelnikov, Rolf Stabell, Alan Stockton, Jan Teuber, Roy Thompson, Hwa-Sung Woo, & Alexander Zheleznyak.* 587, 71 (2003)

Investigation of the Possible Third Image and Mass Models of the Gravitational Lens PMN J1632−0033. *Joshua N. Winn, David Rusin, & Christopher S. Kochanek.* 587, 80 (2003)

The Evolution of a Mass-selected Sample of Early-Type Field Galaxies. *D. Rusin, C. S. Kochanek, E. E. Falco, C. R. Keeton, B. A. McLeod, C. D. Impey, J. Lehár, J. A. Muñoz, C. Y. Peng, & H.-W. Rix.* 587, 143 (2003)

Strong Gravitational Lensing and Galactic Bulges. *Da-Ming Chen.* 587, L55 (2003)

Disk-Bulge-Halo Models for the Andromeda Galaxy. *Lawrence M. Widrow, Kathryn M. Perrett, & Sherry H. Suyu.* 588, 311 (2003)

Rapid Brightness Fluctuations in Q0957+561A,B: Microlensing or Seeing? *Wesley N. Colley, Irwin I. Shapiro, Jennifer Pegg, Edwin L. Turner, Tomislav Kundić, Karen Loomis, N. C. Hastings, & Russet McMillan.* 588, 711 (2003)

The Density Profile of Cluster-Scale Dark Matter Halos. *Håkon Dahle, Steen Hannestad, & Jesper Sommer-Larsen.* 588, L73 (2003)

Correlation between Galaxies and Quasi-stellar Objects in the Sloan Digital Sky Survey: A Signal from Gravitational Lensing Magnification? *Enrique Gaztañaga.* 589, 82 (2003)

Chandra Observations of QSO 2237+0305. *X. Dai, G. Chartas, E. Agol, M. W. Bautz, & G. P. Garmire.* 589, 100 (2003)

Bringing Closure to Microlensing Mass Measurement. *Neal Dalal & Benjamin F. Lane.* 589, 199 (2003)

External Shear in Quadruply Imaged Lens Systems. *Gilbert P. Holder & Paul L. Schechter.* 589, 688 (2003)

Nanolensing of Gamma-Ray Bursts. *Mark A. Walker & Geraint F. Lewis.* 589, 844 (2003)

Gravitational Lensing by Burkert Halos. *Yousin Park & Henry C. Ferguson.* 589, L65 (2003)

The Quintuple Quasar: Radio and Optical Observations. *Joshua N. Winn, Christopher S. Kochanek, Charles R. Keeton, & James E. J. Lovell.* 590, 26 (2003)

The Quintuple Quasar: Mass Models and Interpretation. *Charles R. Keeton & Joshua N. Winn.* 590, 39 (2003)

The Optical Gravitational Lensing Experiment: Is Interstellar Extinction toward the Galactic Center Anomalous? *A. Udalski.* 590, 284 (2003)

X-Ray Pulses from Accretion Columns: Contributions to the Energy Dependence of the Pulse Shape. *U. Kraus, C. Zahn, C. Weth, & H. Ruder.* 590, 424 (2003)

The Far-Infrared Background Correlation with Cosmic Microwave Background Lensing. *Yong-Seon Song, Asantha Cooray, Lloyd Knox, & Matias Zaldarriaga.* 590, 664 (2003)

Semilinear Gravitational Lens Inversion. *S. J. Warren & S. Dye.* 590, 673 (2003)

The Molecular Disk in the Cloverleaf Quasar. *S. Venturini & P. M. Solomon.* 590, 740 (2003)

Measuring σ_8 with Cluster Lensing: Biases from Unrelaxed Clusters. *Graham P. Smith, Alastair C. Edge, Vincent R. Eke, Robert C. Nichol, Ian Smail, & Jean-Paul Kneib.* 590, L79 (2003)

Microlensing Optical Depth toward the Galactic Bulge from Microlensing Observations during 2000 with Difference Image Analysis. *T. Sumi, F. Abe, I. A. Bond, R. J. Dodd, J. B. Hearnshaw, M. Honda, M. Honma, Y. Kan-ya, P. M. Kilmartin, K. Masuda, Y. Matsubara, Y. Muraki, T. Nakamura, R. Nishi, S. Noda, K. Ohnishi, O. K. L. Petterson, N. J. Rattenbury, M. Reid, To. Saito, Y. Saito, H. Sato, M. Sekiguchi, J. Skuljan, D. J. Sullivan, M. Takeuti, P. J. Tristram, S. Wilkinson, T. Yanagisawa, & P. C. M. Yock.* 591, 204 (2003)

Resolving the Microlens Mass Degeneracy for Earth-Mass Planets. *Andrew Gould, B. Scott Gaudi, & Cheongho Han.* 591, L53 (2003)

Weak Gravitational Lensing by a Sample of X-Ray–luminous Clusters of Galaxies. III. Serendipitous Weak Lensing Detections of Dark and Luminous Mass Concentrations. *Haakon Dahle, Kristian Pedersen, Per B. Lilje, Steve J. Maddox, & Nick Kaiser.* 591, 662 (2003)

Direct Mapping of Massive Compact Objects in Extragalactic Dark Halos. *Kaiki Taro Inoue & Masashi Chiba.* 591, L83 (2003)

Prospects for the Determination of H_0 through Observation of Multiply Imaged Supernovae in Galaxy Cluster Fields. *Adam S. Bolton & Scott Burles.* 592, 17 (2003)

Lensing Optical Depths for Substructure and Isolated Dark Matter Halos. *Jacqueline Chen, Andrey V. Kravtsov, & Charles R. Keeton.* 592, 24 (2003)

Stellar Contribution to the Galactic Bulge Microlensing Optical Depth. *Cheongho Han & Andrew Gould.* 592, 172 (2003)

Detection of Dark Matter Skewness in the VIRMOS-DESCART Survey: Implications for Ω_0. *Ue-Li Pen, Tongjie Zhang, Ludovic van Waerbeke, Yannick Mellier, Pengjie Zhang, & John Dubinski.* 592, 664 (2003)

Simulating Weak Lensing by Large-Scale Structure. *Chris Vale & Martin White.* 592, 699 (2003)

Lens or Binary? *Chandra* Observations of the Wide-Separation Broad Absorption Line Quasar Pair UM 425. *Thomas L. Aldcroft & Paul J. Green.* 592, 710 (2003)

The Incidence of Strong-Lensing Clusters in the Red-Sequence Cluster Survey. *Michael D. Gladders, Henk Hoekstra, H. K. C. Yee, Patrick B. Hall, & L. Felipe Barrientos.* 593, 48 (2003)

Measuring the Deviation from the Linear and Deterministic Bias through Cosmic Gravitational Lensing Effects. *Zuhui Fan.* 594, 33 (2003)

A Rapid Microlensing Event in the Q0957+561A, B Gravitational Lens System. *Wesley N. Colley & Rudolph E. Schild.* 594, 97 (2003)

Time-Delay Measurement of the Lensed Quasar HE 1104−1805. *Eran O. Ofek & Dan Maoz.* 594, 101 (2003)

A New Method to Map Flares in Quasars. *Atsunori Yonehara, Shin Mineshige, Yoh Takei, George Chartas, & Edwin L. Turner.* 594, 107 (2003)

Microlensing of Large Sources. *Eric Agol.* 594, 449 (2003)

Extended Source Diffraction Effects near Gravitational Lens Fold Caustics. *S. A. Zabel & J. B. Peterson.* 594, 456 (2003)

Measuring Stellar Limb Darkening by Gravitational Microlensing. *David Heyrovský.* 594, 464 (2003)

The Redshift Distribution of Flat-Spectrum Radio Sources. *J. A. Muñoz, E. E. Falco, C. S. Kochanek, J. Lehár, & E. Mediavilla.* 594, 684 (2003)

Self-similar Models for the Mass Profiles of Early-Type Lens Galaxies. *D. Rusin, C. S. Kochanek, & C. R. Keeton.* 595, 29 (2003)

XMM-Newton Reveals the Quasar Outflow in PG 1115+080. *G. Chartas, W. N. Brandt, & S. C. Gallagher.* 595, 85 (2003)

Astrometric Microlensing by Finite-Size Lenses. *Rohta Takahashi.* 595, 418 (2003)

Gravitational Lensing by a Compound Population of Halos: Standard Models. *Li-Xin Li & Jeremiah P. Ostriker.* 595, 603 (2003)

Extrinsic Radio Variability of JVAS/CLASS Gravitational Lenses. *L. V. E. Koopmans, A. Biggs, R. D. Blandford, I. W. A. Browne, N. J. Jackson, S. Mao, P. N. Wilkinson, A. G. de Bruyn, & J. Wambsganss.* 595, 712 (2003)

Using Optical and Near-Infrared Photometry to Test MACHO Lens Candidates. *Ted von Hippel, Ata Sarajedini, & Maria Teresa Ruiz.* 595, 794 (2003)

Wave Effects in the Gravitational Lensing of Gravitational Waves from Chirping Binaries. *Ryuichi Takahashi & Takashi Nakamura.* 595, 1039 (2003)

Strong Gravitational Lensing and the Structure of Quasar Outflows. *Doron Chelouche.* 596, L43 (2003)

Massive Star Formation in a Gravitationally Lensed H II Galaxy at $z = 3.357$. *R. A. E. Fosbury, M. Villar-Martín, A. Humphrey, M. Lombardi, P. Rosati, D. Stern, R. N. Hook, B. P. Holden, S. A. Stanford, G. K. Squires, M. Rauch, & W. L. W. Sargent.* 596, 797 (2003)

Probing the Spatial Distribution of Extrasolar Planets with Gravitational Microlensing. *Cheongho Han & Young Woon Kang.* 596, 1320 (2003)

Cosmic Shear Statistics in the Suprime-Cam 2.1 Square Degree Field: Constraints on Ω_m and Σ_8. *Takashi Hamana, Satoshi Miyazaki, Kazuhiro Shimasaku, Hisanori Furusawa, Mamoru Doi, Masaru Hamabe, Katsumi Imi, Masahiko Kimura, Yutaka Komiyama, Fumiaki Nakata, Norio Okada, Sadanori Okamura, Masami Ouchi, Maki Sekiguchi, Masafumi Yagi, & Naoki Yasuda.* 597, 98 (2003)

Weak Lensing Discovery and Tomography of a Cluster at $z = 0.68$. *D. Wittman, V. E. Margoniner, J. A. Tyson, J. G. Cohen, A. C. Becker, & I. P. Dell'Antonio.* 597, 218 (2003)

Lensing Effects of Misaligned Disks in Dark Matter Halos. *Ryan Quadri, Ole Möller, & Priyamvada Natarajan.* 597, 659 (2003)

Mass and Dust in the Disk of a Spiral Lens Galaxy. *Joshua N. Winn, Patrick B. Hall, & Paul L. Schechter.* 597, 672 (2003)

Signs of Planetary Microlensing Signals. *Cheongho Han & Kyongae Chang.* 597, 1070 (2003)

A Probable Dwarf Nova Outburst in the Core of the Globular Cluster M22. *Jay Anderson, Adrienne M. Cool, & Ivan R. King.* 597, L137 (2003)

Identifying Lenses with Small-Scale Structure. I. Cusp Lenses. *Charles R. Keeton, B. Scott Gaudi, & A. O. Petters.* 598, 138 (2003)

A Wide-Field *Hubble Space Telescope* Study of the Cluster Cl 0024+1654 at $z = 0.4$. II. The Cluster Mass Distribution. *Jean-Paul Kneib, Patrick Hudelot, Richard S. Ellis, Tommaso Treu, Graham Smith, Phil Marshall, Oliver Czoske, Ian Smail, & Priyamvada Natarajan.* 598, 804 (2003)

Theory of Pixel Lensing toward M31. II. The Velocity Anisotropy and Flattening of the MACHO Distribution. *E. Kerins, J. An, N. W. Evans, P. Baillon, B. J. Carr, Y. Giraud-Héraud, A. Gould, P. Hewett, J. Kaplan, S. Paulin-Henriksson, S. J. Smartt, Y. Tsarpras, & D. Valls-Gabaud.* 598, 993 (2003)

Cosmic Gravitational Shear from the *Hubble Space Telescope* Medium Deep Survey. *Stefano Casertano, Kavan U. Ratnatunga, & Richard E. Griffiths.* 598, L71 (2003)

Arc Statistics in Triaxial Dark Matter Halos: Testing the Collisionless Cold Dark Matter Paradigm. *Masamune Oguri, Jounghun Lee, & Yasasushi Suto.* 599, 7 (2003)

The Hubble Constant from the Gravitational Lens B1608+656. *L. V. E. Koopmans, T. Treu, C. D. Fassnacht, R. D. Blandford, & G. Surpi.* 599, 70 (2003)

The Wendelstein Calar Alto Pixellensing Project (WeCAPP): First MACHO Candidates. *Arno Riffeser, Jürgen Fliri, Ralf Bender, Stella Seitz, & Claus A. Gössl.* 599, L17 (2003)

Expected Constraints on the Generalized Chaplygin Equation of State from Future Supernova Experiments and Gravitational Lensing Statistics. *P. T. Silva & O. Bertolami.* 599, 829 (2003)

Limits on the Evolution of Galaxies from the Statistics of Gravitational Lenses. *Kyu-Hyun Chae & Shude Mao.* 599, L61 (2003)

A Unique Small-Scale Gravitational Arc in A1201. *Alastair C. Edge, Graham P. Smith, David J. Sand, Tommaso Treu, Harald Ebeling, Steven W. Allen, & Pieter G. van Dokkum.* 599, L69 (2003)

GRAVITATIONAL WAVES

Gravitational Wave Frequencies and Energies in Hypernovae. *Maurice H. P. M. van Putten.* 583, 374 (2003)

Gravitational Waves from Stars Orbiting the Sagittarius A* Black Hole. *Marc Freitag.* 583, L21 (2003)

Gravitational Waves Probe the Coalescence Rate of Massive Black Hole Binaries. *A. H. Jaffe & D. C. Backer.* 583, 616 (2003)

Theory and Astrophysical Consequences of a Magnetized Torus around a Rapidly Rotating Black Hole. *Maurice H. P. M. van Putten & Amir Levinson.* 584, 937 (2003)

The Probability Distribution of Binary Pulsar Coalescence Rates. I. Double Neutron Star Systems in the Galactic Field. *C. Kim, V. Kalogera, & D. R. Lorimer.* 584, 985 (2003)

Polarized Gravitational Waves from Gamma-Ray Bursts. *Shiho Kobayashi & Peter Mészáros.* 585, L89 (2003)

Detectability of Gravitational Waves from SN 1987A. *Giovanni Santostasi, Warren Johnson, & Juhan Frank.* 586, 1191 (2003)

The Nonlinear Evolution of Massive Stellar Core Collapses that "Fizzle." *James N. Imamura, Brian K. Pickett, & Richard H. Durisen.* 587, 341 (2003)

Constraints on the Binary Evolution from Chirp Mass Measurements. *Tomasz Bulik & Krzysztof Belczy'nski.* 589, L37 (2003)

Gravitational Radiation from Gamma-Ray Burst Progenitors. *Shiho Kobayashi & Peter Mészáros.* 589, 861 (2003)

Orbital In-Spiral into a Massive Black Hole in a Galactic Center. *Tal Alexander & Clovis Hopman.* 590, L29 (2003)

Low-Frequency Gravitational Waves from Massive Black Hole Binaries: Predictions for *LISA* and Pulsar Timing Arrays. *J. Stuart B. Wyithe & Abraham Loeb.* 590, 691 (2003)

Saturation of the r-Mode Instability. *Phil Arras, Eanna E. Flanagan, Sharon M. Morsink, A. Katrin Schenk, Saul A. Teukolsky, & Ira Wasserman.* 591, 1129 (2003)

Prospects for the Detection of Electromagnetic Counterparts to Gravitational Wave Events. *Julien Sylvestre.* 591, 1152 (2003)

Linear Stability Analysis of Differentially Rotating Polytropes: New Results for the $M = 2$ F-Mode Dynamical Instability. *Shigeyuki Karino & Yoshiharu Eriguchi.* 592, 1119 (2003)

Prediction of the Sidereal Time Distribution of Gravitational Wave Events for Different Detectors. *G. Paturel & Yu. Baryshev.* 592, L99 (2003)

Phase Coherent Timing of RX J0806.3+1527 with *ROSAT* and *Chandra*. *Tod E. Strohmayer.* 593, L39 (2003)

The Origin of X-shaped Radio Galaxies: Clues from the Z-symmetric Secondary Lobes. *Gopal-Krishna, Peter L. Biermann, & Paul J. Wiita.* 594, L103 (2003)

Self-Consistency of Relativistic Observables with General Relativity in the White Dwarf–Neutron Star Binary PSR J1141−6545. *M. Bailes, S. M. Ord, H. S. Knight, & A. W. Hotan.* 595, L49 (2003)

Wave Effects in the Gravitational Lensing of Gravitational Waves from Chirping Binaries. *Ryuichi Takahashi & Takashi Nakamura.* 595, 1039 (2003)

Gravitational Radiation from Pulsating White Dwarfs. *M. Benacquista, D. M. Sedrakian, M. V. Hairapetyan, K. M. Shahabasyan, & A. A. Sadoyan.* 596, L223 (2003)

The Decihertz Laser Interferometer Can Determine the Position of the Coalescing Binary Neutron Stars within an Arcminute a Week before the Final Merging Event to the Black Hole. *Ryuichi Takahashi & Takashi Nakamura.* 596, L231 (2003)

On the Eccentricity Distribution of Coalescing Black Hole Binaries Driven by the Kozai Mechanism in Globular Clusters. *Linqing Wen.* 598, 419 (2003)

Stochastic Gravitational Wave Background: Upper Limits in the 10^{-6} to 10^{-3} Hz Band. *J. W. Armstrong, L. Iess, P. Tortora, & B. Bertotti.* 599, 806 (2003)

Magnetic Braking and Viscous Damping of Differential Rotation in Cylindrical Stars. *James N. Cook, Stuart L. Shapiro, & Branson C. Stephens.* 599, 1272 (2003)

HYDRODYNAMICS

Accretion of Low Angular Momentum Material onto Black Holes: Two-dimensional Hydrodynamical Inviscid Case. *Daniel Proga & Mitchell C. Begelman.* 582, 69 (2003)

Turbulence in Accretion Disks: Vorticity Generation and Angular Momentum Transport via the Global Baroclinic Instability. *H. H. Klahr & P. Bodenheimer.* 582, 869 (2003)

Hydrodynamic Models of Line-driven Accretion Disk Winds. III. Local Ionization Equillibrium. *Nicolas Antonio Pereyra & Timothy R. Kallman.* 582, 984 (2003)

GRB 021004: Reverse Shock Emission. *Shiho Kobayashi & Bing Zhang.* 582, L75 (2003)

The Effect of External Winds on Relativistic Jets. *Philip E. Hardee & Philip A. Hughes.* 583, 116 (2003)

A Fast Algorithm for Solving the Poisson Equation on a Nested Grid. *Tomoaki Matsumoto & Tomoyuki Hanawa.* 583, 296 (2003)

Two-dimensional Axisymmetric Collapse of Thermally Unstable Primordial Clouds. *Chang Hyun Baek, Hyesung Kang, & Dongsu Ryu.* 584, 675 (2003)

Stability of Standing Accretion Shocks, with an Eye toward Core-Collapse Supernovae. *John M. Blondin, Anthony Mezzacappa, & Christine DeMarino.* 584, 971 (2003)

Origin and Interpretation of Kilohertz Quasi-periodic Oscillations from Strange Stars in an X-Ray Binary Systems: Theoretical Hydrodynamical Description. *Banibrata Mukhopadhyay, Subharthi Ray, Jishnu Dey, & Mira Dey.* 584, L83 (2003)

Non-Oscillatory Central Difference and Artificial Viscosity Schemes for Relativistic Hydrodynamics. *Peter Anninos & P. Chris Fragile.* 144, 243 (2003)

Ram Pressure Stripping in Planetary Nebulae. *Eva Villaver, Guillermo García-Segura, & Arturo Manchado.* 585, L49 (2003)

The Formation of Massive Stars from Turbulent Cores. *Christopher F. McKee & Jonathan C. Tan.* 585, 850 (2003)

Three-dimensional Simulations of Relativistic Precessing Jets Probing the Structure of Superluminal Sources. *Miguel-Ángel Aloy, José-María Martí, José-Luis Gómez, Iván Agudo, Ewald Müller, & José-María Ibáñez.* 585, L109 (2003)

Relativistic Jets in Collapsars. *Weiqun Zhang, S. E. Woosley, & A. I. MacFadyen.* 586, 356 (2003)

Interchange Method in Compressible Magnetized Couette Flow: Magnetorotational and Magnetoconvective Instabilities. *Dimitris M. Christodoulou, John Contopoulos, & Demosthenes Kazanas.* 586, 372 (2003)

Orbital Migration and Mass Accretion of Protoplanets in Three-dimensional Global Computations with Nested Grids. *Gennaro D'Angelo, Willy Kley, & Thomas Henning.* 586, 540 (2003)

Stability of Accretion Disk around Rotating Black Holes: A Pseudo–General-Relativistic Fluid Dynamical Study. *Banibrata Mukhopadhyay.* 586, 1268 (2003)

The Nonlinear Evolution of Massive Stellar Core Collapses that "Fizzle." *James N. Imamura, Brian K. Pickett, & Richard H. Durisen.* 587, 341 (2003)

Saturation of the Corotation Resonance in a Gaseous Disk. *G. I. Ogilvie & S. H. Lubow.* 587, 398 (2003)

Transition Region and Coronal Explorer and Soft X-Ray Telescope Active Region Loop Observations: Comparisons with Static Solutions of the Hydrodynamic Equations. *Amy R. Winebarger, Harry P. Warren, & John T. Mariska.* 587, 439 (2003)

On the Coupling between Helium Settling and Rotation-induced Mixing in Stellar Radiative Zones. I. Analytical Approach. *Sylvie Vauclair & Sylvie Théado.* 587, 777 (2003)

On the Coupling between Helium Settling and Rotation-induced Mixing in Stellar Radiative Zones. II. Numerical Approach. *Sylvie Théado & Sylvie Vauclair.* 587, 784 (2003)

Inner Boundary Conditions for Advection-dominated Accretion onto Black Holes. *Peter A. Becker & Truong Le.* 588, 408 (2003)

Runaway Migration and the Formation of Hot Jupiters. *F. S. Masset & J. C. B. Papaloizou.* 588, 494 (2003)

Gravity Wave–driven Flows in the Solar Tachocline. II. Stationary Flows. *Eun-jin Kim & K. B. MacGregor.* 588, 645 (2003)

Three-dimensional Simulations of the Chemical and Dynamical Evolution of the Galactic Bulge. *Naohito Nakasato & Ken'ichi Nomoto.* 588, 842 (2003)

On the Small-Scale Stability of Thermonuclear Flames in Type Ia Supernovae. *F. K. Roepke, J. C. Niemeyer, & W. Hillenbrandt.* 588, 952 (2003)

Role of Shocked Accretion Flows in Regulating the Quasi-Periodic Oscillation of Galactic Black Hole Candidates. *Tapas K. Das.* 588, L89 (2003)

On the Early Evolution of Forming Jovian Planets. I. Initial Conditions, Systematics, and Qualitative Comparisons to Theory. *Andrew F. Nelson & Willy Benz.* 589, 556 (2003)

On the Early Evolution of Forming Jovian Planets. II. Analysis of Accretion and Gravitational Torques. *Andrew F. Nelson & Willy Benz.* 589, 578 (2003)

Time-dependent Ionization in Dynamic Solar and Stellar Atmospheres. I. Methods. *W. Rammacher & P. Ulmschneider.* 589, 988 (2003)

Galaxy Formation in Triaxial Halos: Black Hole–Bulge–Dark Halo Correlation. *Amr A. El-Zant, Isaac Shlosman, Mitchell C. Begelman, & Juhan Frank.* 590, 641 (2003)

Supernova Enrichment of Dwarf Spheroidal Galaxies. *P. Chris Fragile, Stephen D. Murray, Peter Anninos, & Douglas N. C. Lin.* 590, 778 (2003)

Trapped Protostellar Winds and Their Breakout. *Francis P. Wilkin & Steven W. Stahler.* 590, 917 (2003)

The Thermal Regulation of Gravitational Instabilities in Protoplanetary Disks. *Brian K. Pickett, Annie C. Mejía, Richard H. Durisen, Patrick M. Cassen, Donald K. Berry, & Robert P. Link.* 590, 1060 (2003)

The Numerical Simulation of Radiative Shocks. II. Thermal Instabilities in Two-dimensional Models. *Ralph S. Sutherland, Geoffrey V. Bicknell, & Michael A. Dopita.* 591, 238 (2003)

A Search for Lyα Emission from the Astrosphere of 40 Eridani A. *Brian E. Wood, Jeffrey L. Linsky, Hans-Reinhard Mueller, & Gary P. Zank.* 591, 1210 (2003)

Cosmos: A Radiation-Chemo-Hydrodynamics Code for Astrophysical Problems. *Peter Anninos, P. Chris Fragile, & Stephen D. Murray.* 147, 177 (2003)

The Numerical Simulation of Radiative Shocks. I. The Elimination of Numerical Shock Instabilities Using a Local Oscillation Filter. *Ralph S. Sutherland, David K. Bisset, & Geoffrey V. Bicknell.* 147, 187 (2003)

Beyond Flux-limited Diffusion: Parallel Algorithms for Multidimensional Radiation Hydrodynamics. *John C. Hayes & Michael L. Norman.* 147, 197 (2003)

The Formation of Stellar Clusters in Turbulent Molecular Clouds: Effects of the Equation of State. *Yuexing Li, Ralf S. Klessen, & Mordecai-Mark Mac Low.* 592, 975 (2003)

Spiral Arms in Accretion Discs Encounters. *S. Pfalzner.* 592, 986 (2003)

Global Anisotrophy versus Small-Scale Fluctuations in Neutrino Flux in Core-Collapse Supernova Explosions. *Hideki Madokoro, Tetsuya Shimizu, & Yuko Mochizuki.* 592, 1035 (2003)

Multitransonic Black Hole Accretion Disks with Isothermal Standing Shocks. *Tapas K. Das, Jayant K. Pendharkar, & Sanjit Mitra.* 592, 1078 (2003)

Roche Lobe Overflow from Dwarf Stellar Systems. *Stephen D. Murray, Shawfeng Dong, & Douglas N. C. Lin.* 593, 301 (2003)

Thermal X-Ray Emission from Shocked Ejecta in Type Ia Supernova Remnants. Prospects for Explosion Mechanism Identification. *Carles Badenes, Eduardo Bravo, Kazimierz J. Borkowski, & Inmaculada Domínguez.* 593, 358 (2003)

Evolving Active Region Loops Observed with the *Transition Region and Coronal Explorer*. II. Time-Dependent Hydrodynamic Simulations. *Harry P. Warren, Amy R. Winebarger, & John T. Mariska.* 593, 1174 (2003)

KH 15D: A Star Eclipsed by a Large-Scale Dusty Vortex? *P. Barge & M. Viton.* 593, L117 (2003)

Acoustic Heating Models for the Basal Flux Star τ Ceti Including Time-dependent Ionization: Results for Ca II and Mg II Emission. *W. Rammacher & M. Cuntz.* 594, L51 (2003)

The High-Excitation Planetary Nebula NGC 246: Optical and Near-Ultraviolet Observations and Two-Dimensional Numerical Models. *Andrew Szentgyorgyi, John Raymond, José Franco, Eva Villaver, & Luis López-Martín.* 594, 874 (2003)

Massive Stars and the Energy Balance of the Interstellar Medium. I. The Impact of an Isolated 60 $M_\odot$ Star. *Tim Freyer, Gerhard Hensler, & Harold W. Yorke.* 594, 888 (2003)

Luminous Hot Accretion Flows: Thermal Equilibrium Curve and Thermal Stability. *Feng Yuan.* 594, L99 (2003)

One-armed Spiral Instability in Differentially Rotating Stars. *Motoyuki Saijo, Thomas W. Baumgarte, & Stuart L. Shapiro.* 595, 352 (2003)

Fragmentation of a Molecular Cloud Core versus Fragmentation of the Massive Protoplanetary Disk in the Main Accretion Phase. *Tomoaki Matsumoto & Tomoyuki Hanawa.* 595, 913 (2003)

The Response of Model and Astrophysical Thermonuclear Flames to Curvature and Stretch. *L. J. Dursi, M. Zingale, A. C. Calder, B. Fryxell, F. X. Timmes, N. Vladimirova, R. Rosner, A. Caceres, D. Q. Lamb, K. Olson, P. M. Ricker, K. Riley, A. Siegel, & J. W. Truran.* 595, 955 (2003)

Collapse of Rotating Supermassive Neutron Stars to Black Holes: Fully General Relativistic Simulations. *Masaru Shibata.* 595, 992 (2003)

Stellar Hydrodynamics in Radiative Regions. *Patrick A. Young, Karen A. Knierman, Jane R. Rigby, & David Arnett.* 595, 1114 (2003)

Formation of the First Supermassive Black Holes. *Volker Bromm & Abraham Loeb.* 596, 34 (2003)

Branch, Spur, and Feather Formation in Spiral Galaxies. *S. Chakrabarti, G. Laughlin, & F. H. Shu.* 596, 220 (2003)

Explosive Nucleosynthesis Associated with Formation of Jet-induced Gamma-Ray Bursts in Massive Stars. *S. Nagataki, A. Mizuta, S. Yamada, H. Takabe, & K. Sato.* 596, 401 (2003)

Black Hole Accretion Disks On The Edge. *Kristen Menou.* 596, 414 (2003)

Vortices in the Co-orbital Region of an Embedded Protoplanet. *Hui Li, Josef Koller, & Douglas N. C. Lin.* 596, L91 (2003)

Shadowing of the Nascent Jet in NGC 4261 by a Line-Emitting Supersonic Accretion Disk. *Siming Liu, Michael J. Fromerth, & Fulvio Melia.* 596, 879 (2003)

Thermal Instability in Clusters of Galaxies with Conduction. *Woong-Tae Kim & Ramesh Narayan.* 596, 889 (2003)

The First Supernova Explosions in the Universe. *Volker Bromm, Naoki Yoshida, & Lars Hernquist.* 596, L135 (2003)

Turbulent Mixing in Clusters of Galaxies. *Woong-Tae Kim & Ramesh Narayan.* 596, L139 (2003)

On the Determination of Ejecta Structure and Explosion Asymmetry from the X-Ray Knots of Cassiopeia A. *J. Martin Laming & Una Hwang.* 597, 347 (2003)

Early Optical Afterglows from Wind-Type Gamma-Ray Bursts. *Shiho Kobayashi & Bing Zhang.* 597, 455 (2003)

A Model for the Formation of High-Density Clumps in Proto–Planetary Nebulae. *Patrick A. Young, J. L. Highberger, David Arnett, & L. M. Ziurys.* 597, L53 (2003)

Modeling Helical Structures in Relativistic Jets. *Philip E. Hardee.* 597, 798 (2003)

Conservation Laws in Smooth Particle Hydrodynamics: The DEVA Code. *A. Serna, R. Domínguez-Tenreiro, & A. Sáiz.* 597, 878 (2003)

The Scales of Granulation, Mesogranulation, and Supergranulation. *Mark Peter Rast.* 597, 1200 (2003)

Chandra Observations of the NGC 1550 Galaxy Group: Implication for the Temperature and Entropy Profiles of 1 keV Galaxy Groups. *M. Sun, W. Forman, A. Vikhlinin, A. Hornstrup, C. Jones, & S. S. Murray.* 598, 250 (2003)

Cosmological Mestel Disks and the Rossby Vortex Instability: The Origin of Supermassive Black Holes. *Stirling A. Colgate, Renyue Cen, Hui Li, Nathan Currier, & Michael S. Warren.* 598, L7 (2003)

Metallicity Evolution of Damped Lyα Systems in ΛCDM Cosmology. *Renyue Cen, Jeremiah P. Ostriker, Jason X. Prochaska, & Arthur M. Wolfe.* 598, 741 (2003)

Bipolar Supernova Explosions: Nucleosynthesis and Implications for Abundances in Extremely Metal-Poor Stars. *Keiichi Maeda & Ken'ichi Nomoto.* 598, 1163 (2003)

Atmospheric Loss of Exoplanets Resulting from Stellar X-Ray and Extreme-Ultraviolet Heating. *H. Lammer, F. Selsis, I. Ribas, E. F. Guinan, S. J. Bauer, & W. W. Weiss.* 598, L121 (2003)

Classical Cepheid Pulsation Models. IX. New Input Physics. *Silvia Petroni, Giuseppe Bono, Marcella Marconi, & Robert F. Stellingwerf.* 599, 522 (2003)

Thermohydrodynamics of Circumstellar Disks with High-Mass Planets. *Gennaro D'Angelo, Thomas Henning, & Willy Kley.* 599, 548 (2003)

Rapid Formation of Outer Giant Planets by Disk Instability. *Alan P. Boss.* 599, 577 (2003)

Rotation of a Pulsed Jet, or Plume in a Rotation Flow: A Source of Helicity for an α-ω Astrophysical Dynamo. *Howard F. Beckley, Stirling A. Colgate, Van D. Romero, & Ragnar Ferrel.* 599, 702 (2003)

INFRARED: GALAXIES

COLA. II. Radio and Spectroscopic Diagnostics of Nuclear Activity in Galaxies. *E. A. Corbett, L. Kewley, P. N. Appleton, V. Charmandaris, M. A. Dopita, C. A. Heisler, R. P. Norris, A. Zezas, & A. Marston.* 583, 670 (2003)

The Infrared Spectral Energy Distribution of the Seyfert 2 Prototype NGC 5252. *M. Almudena Prieto & J. A. Acosta-Pulido.* 583, 689 (2003)

The Hawaii+Anglo-Australian Observatory *K*-Band Galaxy Redshift Survey. I. The Local *K*-Band Luminosity Function. *J.-S. Huang, K. Glazebrook, L. L. Cowie, & C. Tinney.* 584, 203 (2003)

The Collimated Wind in NGC 253. *H. Sugai, R. I. Davies, & M. J. Ward.* 584, L9 (2003)

The Infrared Counterparts of the Optically Unidentified Chandra Deep Field–South 1 Ms Sources. *Haojing Yan, Rogier A. Windhorst, Huub J. A. Röttgering, Seth H. Cohen, Stephen C. Odewahn, Scott C. Chapman, & William C. Keel.* 585, 67 (2003)

Massive Elliptical Galaxies at High Redshift: NICMOS Imaging of $z \approx 1$ Radio Galaxies. *Andrew W. Zirm, Mark Dickinson, & Arjun Dey.* 585, 90 (2003)

An Empirical Decomposition of Near-Infrared Emission into Galactic and Extragalactic Components. *Richard G. Arendt & Eli Dwek.* 585, 305 (2003)

Predictions for Cosmological Infrared Surveys from Space with the Multiband Imaging Photometer for *SIRTF*. *H. Dole, G. Lagache, & J.-L. Puget.* 585, 617 (2003)

Predictions for the Counts of Faint, High-Redshift Galaxies in the Mid-Infrared. *Zoltán Haiman, David N. Spergel, & Edwin L. Turner.* 585, 630 (2003)

Dust in Hot Gas: Far-Infrared Emission from Three Local Elliptical Galaxies. *Pasquale Temi, William G. Mathews, Fabrizio Brighenti, & Jesse D. Bregman.* 585, L121 (2003)

Azimuthal and Kinematic Segregation of Neutral and Molecular Gas in Arp 118: The Yin-Yang Galaxy NGC 1144. *P. N. Appleton, V. Charmandaris, Yu Gao, Tom Jarrett, & M. A. Bransford.* 586, 112 (2003)

The Las Campanas Infrared Survey. IV. The Photometric Redshift Survey and the Rest-Frame *R*-Band Galaxy Luminosity Function at $0.5 \leq z \leq 1.5$. *Hsiao-Wen Chen, Ronald O. Marzke, Patrick J. McCarthy, P. Martini, R. G. Carlberg, S. E. Persson, A. Bunker, C. R. Bridge, & R. G. Abraham.* 586, 745 (2003)

Estimating Star Formation Rates from Infrared and Radio Luminosities: The Origin of the Radio-Infrared Correlation. *Eric F. Bell.* 586, 794 (2003)

The Evolution of the Global Stellar Mass Density at $0 < z < 3$. *Mark Dickinson, Casey Papovich, Henry C. Ferguson, & Tamás Budavári.* 587, 25 (2003)

Models for Evolution of Dusty and E/S0 Galaxies Seen in Multiband Surveys. *C. K. Xu, C. J. Lonsdale, D. L. Shupe, A. Franceschini, C. Martin, & D. Schiminovich.* 587, 90 (2003)

Resolved Mid-Infrared Emission in the Narrow-Line Region of NGC 4151. *James T. Radomski, Robert K. Piña, Christopher Packham, Charles M. Telesco, James M. De Buizer, R. Scott Fisher, & A. Robinson.* 587, 117 (2003)

Luminosity and Stellar Mass Functions of Local Star-forming Galaxies. *Pablo G. Pérez-González, Jesús Gallegeo, Jaime Zamorano, Almudena Alonso-Herrero, Armando Gil de Paz, & Alfonso Aragón-Salamanca.* 587, L27 (2003)

The Luminosity Function of *IRAS* Point Source Catalog Redshift Survey Galaxies. *Tsutomu T. Takeuchi, Kohji Yoshikawa, & Takako T. Ishii.* 587, L89 (2003)

A Model for *SIRTF* Galaxy Counts. *Jeremy Mould.* 587, L93 (2003)

Detection of Strong Clustering of Red *K*-selected Galaxies at $2 < z_{\rm phot} < 4$ in the Hubble Deep Field–South. *E. Daddi, H. J. A. Röttgering, I. Labbé, G. Rudnick, M. Franx, A. F. M. Moorwood, H. W. Rix, P. P. van der Werf, & P. G. van Dokkum.* 588, 50 (2003)

3.1 Micron H_2O Ice Absorption in LINER-Type Ultraluminous Infrared Galaxies with Cool Far-Infrared Colors: The Centrally Concentrated Nature of Their Deeply Buried Energy Sources. *Masatoshi Imanishi & Philip R. Maloney.* 588, 165 (2003)

The Bivariate Luminosity-Color Distribution of *IRAS* Galaxies and Implications for the High-Redshift Universe. *S. C. Chapman, G. Helou, G. F. Lewis, & D. A. Dale.* 588, 186 (2003)

Infrared Emission of Normal Galaxies from 2.5 to 12 Microns: *Infrared Space Observatory* Spectra, Near-Infrared Continuum, and Mid-Infrared Emission Features. *Nanyao Lu, George Helou, Michael W. Werner, Harriet L. Dinerstein, Daniel A. Dale, Nancy A. Silbermann, Sangeeta Malhotra, Charles A. Beichman, & Thomas H. Jarrett.* 588, 199 (2003)

The Far-Infrared Spectral Energy Distributions of X-Ray–selected Active Galaxies. *Joanna K. Kuraszkiewicz, Belinda J. Wilkes, Eric J. Hooper, Kim K. McLeod, Kenneth Wood, Jon Bjorkman, Kisha M. Delain, David H. Hughes, Martin S. Elvis, Chris D. Impey, Carol J. Lonsdale, Matt A. Malkan, Jonathan C. McDowell, & Barbara Whitney.* 590, 128 (2003)

Simultaneous Optical and Near-Infrared Spectropolorimetry of Type 2 Seyfert Galaxies. *Makoto Watanabe, Tetsuya Nagata, Shuji Sato, Hidehiko Nakaya, & J. H. Hough.* 591, 714 (2003)

Near-Infrared Properties of Galaxy Clusters: Luminosity as a Binding Mass Predictor and the State of Cluster Baryons. *Yen-Ting Lin, Joseph J. Mohr, & S. A. Stanford.* 591, 749 (2003)

Large Disklike Galaxies at High Redshift. *Ivo Labbé, Gregory Rudnick, Marijn Franx, Emanuele Daddi, Pieter G. van Dokkum, Natascha M. Förster Schreiber, Konrad Kuijken, Alan Moorwood, Hans-Walter Rix, Huub Röttgering, Ignacio Trujillo, Arjen van der Wel, Paul van der Werf, & Lottie van Starkenburg.* 591, L95 (2003)

Barred Galaxies at $z > 0.7$: NICMOS Hubble Deep Field–North Observations. *Kartik Sheth, Michael W. Regan, Nicholas Z. Scoville, & Linda E. Strubbe.* 592, L13 (2003)

VLBI Imaging of Luminous Infrared Galaxies: Active Galactic Nucleus Cores in Markarian 231, UGC 5101, and NGC 7469. *Carol J. Lonsdale, Colin J. Lonsdale, Harding E. Smith, & Philip J. Diamond.* 592, 804 (2003)

Deep Near-Infrared Mapping of Young and Old Stars in Blue Compact Dwarf Galaxies. *Luz M. Cairós, Nicola Caon, Polychronis Papaderos, Kai Noeske, Jose M. Vílchez, Begoña García Lorenzo, & Casiana Muñoz-Tuñón.* 593, 312 (2003)

Nascent Starbursts in Synchrotron-deficient Galaxies with Hot Dust. *H. Roussel, G. Helou, R. Beck, J. J. Condon, A. Bosma, K. Matthews, & T. H. Jarrett.* 593, 733 (2003)

The [C II] 158 Micron Line Deficit in Ultraluminous Infrared Galaxies Revisited. *M. L. Luhman, S. Satyapal, J. Fischer, M. G. Wolfire, E. Sturm, C. C. Dudley, D. Lutz, & R. Genzel.* 594, 758 (2003)

Revealing the Active Galactic Nucleus in the Superantennae through *L*-Band Spectroscopy. *G. Risaliti, R. Maiolino, A. Marconi, L. Bassani, S. Berta, V. Braito, R. Della Ceca, A. Franceschini, & M. Salvati.* 595, L17 (2003)

Physical Conditions and Star Formation Activity in the Intragroup Medium of Stephan's Quintet. *C. K. Xu, N. Lu, J. J. Condon, M. Dopita, & R. J. Tuffs.* 595, 665 (2003)

Kinematic Masses of Super–Star Clusters in M82 from High-Resolution Near-Infrared Spectroscopy. *Nate McCrady, Andrea M. Gilbert, & James R. Graham.* 596, 240 (2003)

The Spectrum of Integrated Millimeter Flux of the Magellanic Clouds and 30 Doradus from TopHat and DIRBE Data. *J. E. Aguirre, J. J. Bezaire, E. S. Cheng, D. A. Cottingham, S. S. Cordone, T. M. Crawford, D. J. Fixsen, L. Knox, S. S. Meyer, H. U. Norgaard-Nielsen, R. F. Silverberg, P. Timbie, & G. W. Wilson.* 596, 273 (2003)

How Many Active Galaxies and QSOs Will Future Space Missions Detect? *Paola Andreani, Luigi Spinoglio, & Matthew A. Malkan.* 597, 759 (2003)

Adaptive Optics Imaging and Spectroscopy of Cygnus A. I. Evidence for a Minor Merger. *Gabriela Canalizo, Claire Max, David Whysong, Robert Antonucci, & Scott E. Dahm.* 597, 823 (2003)

Molecular Hydrogen Excitation in Ultraluminous Infrared Galaxies. *R. I. Davies, A. Sternberg, M. Lehnert, & L. E. Tacconi-Garman.* 597, 907 (2003)

Infrared Spectroscopy of 15 Radio Galaxies at $2 < z < 2.6$. *Fumihide Iwamuro, Kentaro Motohara, Toshinori Maihara, Masahiko Kimura, Shigeru Eto, Takanori Shima, Daisaku Mochida, Shinpei Wada, Satoko Imai, & Kentaro Aoki.* 598, 178 (2003)

The Clustering Dipole of the Local Universe from the Two Micron All Sky Survey. *Ariyeh H. Maller, Daniel H. McIntosh, Neal Katz, & Martin D. Weinberg.* 598, L1 (2003)

The Nature of Starburst Activity in M82. *N. M. Förster Schreiber, R. Genzel, D. Lutz, & A. Sternberg.* 599, 193 (2003)

Hot Dust in Radio-loud Active Galactic Nuclei. *Wolfram Freudling, Ralf Siebenmorgen, & Martin Haas.* 599, L13 (2003)

Observing H_2 Emission in Forming Galaxies. *Kazuyuki Omukai & Tetsu Kitayama.* 599, 738 (2003)

Compact Nuclear Starbursts in Seyfert 2 Galaxies from the CfA and 12 Micron Samples. *Masatoshi Imanishi.* 599, 918 (2003)

Infrared Observations of Galaxies in the Local Universe. II. 391 Calibrated Images with Photometric and Structural Measurements. *Albert D. Grauer, Marcia J. Rieke, & Alice C. Quillen.* 149, 327 (2003)

INFRARED: GENERAL

The Far-Infrared Background Correlation with Cosmic Microwave Background Lensing. *Yong-Seon Song, Asantha Cooray, Lloyd Knox, & Matias Zaldarriaga.* 590, 664 (2003)

The Very Faint *K*-Band Afterglow of GRB 020819 and the Dust Extinction Hypothesis of the Dark Bursts. *S. Klose, A. A. Henden, J. Greiner, D. H. Hartmann, N. Cardiel, A. J. Castro-Tirado, J. M. Castro Ceron, J. Gallego, J. Gorosabel, B. Stecklum, N. Tanvir, U. Thiele, F. J. Vrba, & A. Zeh.* 592, 1025 (2003)

A Uniform Database of 2.4–45.4 Micron Spectra from the *Infrared Space Observatory* Short Wavelength Spectrometer. *G. C. Sloan, Kathleen E. Kraemer, Stephan D. Price, & Russell F. Shipman.* 147, 379 (2003)

INFRARED: ISM

Mid-Infrared Imaging Polarimetry of NGC 7027. *C. A. Jurgenson, R. E. Stencel, D. S. Theil, D. I. Klebe, & T. Ueta.* 582, L35 (2003)

Carbon Monoxide Entrapment in Interstellar Ice Analogs. *M. P. Collings, J. W. Dever, H. J. Fraser, M. R. S. McCoustra, & D. A. Williams.* 583, 1058 (2003)

K3-50A: An Ultracompact H II Region Ionized by a Massive Stellar Cluster. *Yoshiko K. Okamoto, Hirokazu Kataza, Takuya Yamashita, Takashi Miyata, Shigeyuki Sako, Shinya Takubo, Mitsuhiko Honda, & Takashi Onaka.* 584, 368 (2003)

Structure of the Mid-Infrared–emitting Disk around WL 16. *Michael E. Ressler & Mary Barsony.* 584, 832 (2003)

An Empirical Decomposition of Near-Infrared Emission into Galactic and Extragalactic Components. *Richard G. Arendt & Eli Dwek.* 585, 305 (2003)

Mid-Infrared Imaging of the Protostellar Binary L1448N IRS 3(A,B). *David R. Ciardi, Charles M. Telesco, Jonathan P. Williams, R. Scott Fisher, Chris Packham, Robert Piña, & James Radomski.* 585, 392 (2003)

Detection of Far-Infrared Features in Star-forming Regions. *Takashi Onaka & Yoko Okada.* 585, 872 (2003)

Dust in Hot Gas: Far-Infrared Emission from Three Local Elliptical Galaxies. *Pasquale Temi, William G. Mathews, Fabrizio Brighenti, & Jesse D. Bregman.* 585, L121 (2003)

The Effects of Ion Irradiation on the Evolution of the Carrier of the 3.4 Micron Interstellar Absoprtion Band. *V. Mennella, G. A. Baratta, A. Esposito, G. Ferini, & Y. J. Pendleton.* 587, 727 (2003)

Infrared Emission of Normal Galaxies from 2.5 to 12 Microns: *Infrared Space Observatory* Spectra, Near-Infrared Continuum, and Mid-Infrared Emission Features. *Nanyao Lu, George Helou, Michael W. Werner, Harriet L. Dinerstein, Daniel A. Dale, Nancy A. Silbermann, Sangeeta Malhotra, Charles A. Beichman, & Thomas H. Jarrett.* 588, 199 (2003)

Magnetic Structure of a Dark Bok Globule. *Jacques P. Vallée, Jane S. Greaves, & Jason D. Fiege.* 588, 910 (2003)

Five Star-forming Cores in the Galactic Ring Survey: A Mid-Infrared Study. *Kathleen E. Kraemer, James M. Jackson, Marc Kassis, Lynne K. Deutsch, Joseph L. Hora, Robert Simon, William F. Hoffmann, G. G. Fazio, Aditya Dayal, T. M. Bania, Dan P. Clemens, & Mark H. Heyer.* 588, 918 (2003)

Spatially Resolved 3 Micron Spectroscopy of IRAS 22272+5435: Formation and Evolution of Aliphatic Hydrocarbon Dust in Proto–Planetary Nebulae. *Miwa Goto, W. Gaessler, Yutaka Hayano, Masanori Iye, Yukiko Kamata, Tomio Kanzawa, Naoto Kobayashi, Yosuke Minowa, D. J. Saint-Jacques, Hideki Takami, Naruhisa Takato, & Hiroshi Terada.* 589, 419 (2003)

The Impact of Ionizing Stars on the Diffuse Interstellar Medium: A Swept-Up Shell and Ionized Halo around the W4 Chimney/Superbubble. *S. Terebey, M. Fich, R. Taylor, Y. Cao, & T. Hancock.* 590, 906 (2003)

Photoelectric Heating and [C II] Cooling in Translucent Clouds: Results for Cloud Models Based on Simulations of Compressible Magnetohydrodynamic Turbulence. *M. Juvela, P. Padoan, & R. Jimenez.* 591, 258 (2003)

A Test Case for the Organic Refractory Model of Interstellar Dust. *S. S. Shenoy, D. C. B. Whittet, J. E. Chiar, A. J. Adamson, W. G. Roberge, & G. E. Hassel.* 591, 962 (2003)

Laboratory Infrared Spectroscopy of Cationic Polycyclic Aromatic Hydrocarbon Molecules. *Jos Oomens, A. G. G. M. Tielens, Boris G. Sartakov, Gert von Helden, & Gerard Meijer.* 591, 968 (2003)

Infrared Space Observatory Long-Wavelength Spectrometer Spectroscopy of Star-forming Regions in M33. *S. J. U. Higdon, J. L. Higdon, J. M. van der Hulst, & G. J. Stacey.* 592, 161 (2003)

Hubble Space Telescope Paα and 1.9 Micron Imaging of Sagittarius A West. *N. Z. Scoville, S. R. Stolovy, M. Rieke, M. Christopher, & F. Yusef-Zadeh.* 594, 294 (2003)

Locally Aromatic Polycyclic Hydrocarbons as Potential Carriers of Infrared Emission Features. *Simon Petrie, Robert Stranger, & Walter W. Duley.* 594, 869 (2003)

Kinematics of Ultracompact H II Regions Revealed: High Spatial and Spectral Resolution Mapping of the 12.8 Micron [Ne II] Line in Monoceros R2. *D. T. Jaffe, Q. Zhu, J. H. Lacy, & M. Richter.* 596, 1053 (2003)

A Near-Infrared Study of the Star-Forming Region S269. *Zhibo Jiang, Yongquiang Yao, Ji Yang, Daisuke Baba, Daisuke Kato, Mikio Kurita, Chie Nagashima, Tetsuya Nagata, Takahiro Nagayama, Yasushi Nakajima, Miki Ishii, Motohide Tamura, & Koji Sugitani.* 596, 1064 (2003)

Carbon Isotope Ratio in $^{12}CO/^{13}CO$ toward Local Molecular Clouds with Near-Infrared High-Resolution Spectroscopy of Vibrational Transition Bands. *Miwa Goto, Tomonori Usuda, Naruhisa Takato, Masa Hayashi, Seiichi Sakamoto, W. Gaessler, Yutaka Hayano, Masanori Iye, Yukiko Kamata, Tomio Kanzawa, Naoto Kobayashi, Yosuke Minowa, Ko Nedachi, Shin Oya, T.-S. Pyo, D. Saint-Jacques, Hiroshi Suto, Hideki Takami, Hiroshi Terada, & George F. Mitchell.* 598, 1038 (2003)

A Search for Mid-Infrared Emission from Hot Molecular Core Candidates. *J. M. De Buizer, J. T. Radomski, C. M. Telesco, & R. K. Piña.* 598, 1127 (2003)

Spatial Separation of the 3.29 Micron Emission Feature and Associated 2 Micron Continuum in NGC 7023. *Jin H. An & K. Sellgren.* 599, 311 (2003)

INFRARED: ISM: LINES AND BANDS

A Catalog of Bright Filamentary Structures in the Interstellar Medium. *Tom Jackson, Michael Werner, & T. N. Gautier III.* 149, 365 (2003)

INFRARED: SOLAR SYSTEM

High-Resolution 3 Micron Spectroscopy of Molecules in the Mesosphere and Troposphere of Titan. *T. R. Geballe, S. J. Kim, K. S. Noll, & C. A. Griffith.* 583, L39 (2003)

Saturated Hydrocarbons in Comet 153P/Ikeya-Zhang: Ethane, Methane, and Monodeuterio-Methane. *Hideyo Kawakita, Jun-ichi Watanabe, Daisuke Kinoshita, Masateru Ishiguro, & Ryosuke Nakamura.* 590, 573 (2003)

Recent Origin of the Solar System Dust Bands. *David Nesvorný, William F. Bottke, Harold F. Levision, & Luke Dones.* 591, 486 (2003)

Irregular Particles in Comet C/1995 O1 Hale-Bopp Inferred from Its Mid-Infrared Spectrum. *F. Moreno, O. Muñoz, R. Vilaplana, & A. Molina.* 595, 522 (2003)

Propane on Titan. *H. G. Roe, T. K. Greathouse, M. J. Richter, & J. H. Lacy.* 597, L65 (2003)

INFRARED: STARS

FeH Absorption in the Near-Infared Spectra of Late M and L Dwarfs. *Michael Cushing, John T. Rayner, Sumner P. Davis, & William D. Vacca.* 582, 1066 (2003)

Calculations of the Far-Wing Line Profiles of Sodium and Potassium in the Atmospheres of Substellar-Mass Objects. *Adam Burrows & Maxim Volobuyev.* 583, 985 (2003)

The Inner Rings of β Pictoris. *Z. Wahhaj, D. W. Koerner, M. E. Ressler, M. W. Werner, D. E. Backman, & A. I. Sargent.* 584, L27 (2003)

On the Origin of Long Secondary Periods in Semiregular Variables. *E. A. Olivier & P. R. Wood.* 584, 1035 (2003)

An Empirical Decomposition of Near-Infrared Emission into Galactic and Extragalactic Components. *Richard G. Arendt & Eli Dwek.* 585, 305 (2003)

A Survey for Circumstellar Disks around Young Substellar Objects. *Michael C. Liu, Joan Najita, & Alan T. Tokunaga.* 585, 372 (2003)

Mid-Infrared Imaging of the Protostellar Binary L1448N IRS 3(A,B). *David R. Ciardi, Charles M. Telesco, Jonathan P. Williams, R. Scott Fisher, Chris Packham, Robert Piña, & James Radomski.* 585, 392 (2003)

Hubble Space Telescope/NICMOS Near-Infrared Imaging of the Proto–Planetary Nebula OH 231.8+4.2. *C. A. Meakin, J. H. Bieging, W. B. Latter, J. L. Hora, & A. G. G. M. Tielens.* 585, 482 (2003)

Spatial Study with the Very Large Telescope of a New Resolved Edge-on Circumstellar Dust Disk Discovered at the Periphery of the ρ Ophiuchi Dark Cloud. *N. Grosso, J. Alves, K. Wood, R. Neuhäuser, T. Montmerle, & J. E. Bjorkman.* 586, 296 (2003)

Mid-Infrared Imaging of the First-Ascent Giant HD 233517. *R. Scott Fisher, C. M. Telesco, Robert K. Piña, & Roger F. Knacke.* 586, L91 (2003)

Detections of Rovibrational H_2 Emission from the Disks of T Tauri Stars. *Jeffrey S. Bary, David A. Weintraub, & Joel H. Kastner.* 586, 1136 (2003)

2-DUST: A Dust Radiative Transfer Code for an Axisymmetric System. *Toshiya Ueta & Margaret Meixner.* 586, 1338 (2003)

Cool Companions to White Dwarfs from the Two Micron All-Sky Survey Second Incremental Data Release. *Stefanie Wachter, D. W. Hoard, Kathryn H. Hansen, Rebecca E. Wilcox, Hilda M. Taylor, & Steven L. Finkelstein.* 586, 1356 (2003)

The First Measurement of Spectral Lines in a Short-Period Star Bound to the Galaxy's Central Black Hole: A Paradox of Youth. *A. M. Ghez, G. Duchêne, K. Matthews, S. D. Hornstein, A. Tanner, J. Larkin, M. Morris, E. E. Becklin, S. Salim, T. Kremenek, D. Thompson, B. T. Soifer, G. Neugebauer, & I. McLean.* 586, L127 (2003)

Near-Infrared Interferometric Measurements of Herbig Ae/Be Stars. *J. A. Eisner, B. F. Lane, R. L. Akeson, L. A. Hillenbrand, & A. I. Sargent.* 588, 360 (2003)

Interferometry on Mira in the Mid-Infrared: Cyclic Variability of the Continuum Diameter and the Effect of Spectral Lines on Apparent Size. *J. Weiner, D. D. S. Hale, & C. H. Townes.* 588, 1064 (2003)

Asymptotic Giant Branch and Supergiant Stellar Diameters in the Mid-Infrared. *J. Weiner, D. D. S. Hale, & C. H. Townes.* 589, 976 (2003)

The Infrared Counterpart to the Anomalous X-Ray Pulsar 1RXS J170849−400910. *G. L. Israel, S. Covino, R. Perna, R. Mignani, L. Stella, S. Campana, G. Marconi, G. Bono, S. Mereghetti, C. Motch, I. Negueruela, T. Oosterbroek, & L. Angelini.* 589, L93 (2003)

New Low-Mass Members of the Taurus Star-forming Region. *K. L. Luhman, Cesar Briceno, John R. Stauffer, Lee Hartmann, D. Barrado y Navascues, & Nelson Caldwell.* 590, 348 (2003)

Modeling the Infrared Emission from the HR 4796A Disk. *Aigen Li & J. I. Lunine.* 590, 368 (2003)

Near-Infrared Spectra of Type Ia Supernovae. *G. H. Marion, P. Höflich, W. D. Vacca, & J. C. Wheeler.* 591, 316 (2003)

A Search for Close Binaries in the ρ Ophiuchi Star-forming Region. *M. Barsony, C. Koresko, & K. Matthews.* 591, 1064 (2003)

Envelope Emission in Young Stellar Systems: A Subarcsecond Survey of Circumstellar Structure. *Leslie W. Looney, Lee G. Mundy, & W. J. Welch.* 592, 255 (2003)

The First Substellar Subdwarf? Discovery of a Metal-poor L Dwarf with Halo Kinematics. *Adam J. Burgasser, J. Davy Kirkpatrick, Adam Burrows, James Liebert, I. Neill Reid, John E. Gizis, Mark R. McGovern, L. Prato, & Ian S. McLean.* 592, 1186 (2003)

Gravity Indicators in the Near-Infrared Spectra of Brown Dwarfs. *N. I. Gorlova, M. R. Meyer, G. H. Rieke, & J. Liebert.* 593, 1074 (2003)

A Census of the Young Cluster IC 348. *K. L. Luhman, John R. Stauffer, A. A. Muench, G. H. Rieke, E. A. Lada, J. Bouvier, & C. J. Lada.* 593, 1093 (2003)

Supernova Reverse Shocks: SiC Growth and Isotopic Composition. *Ethan A.-N. Deneault, Donald D. Clayton, & Alexander Heger.* 594, 312 (2003)

Guilt by Association: The 13 Micron Dust Emission Feature and Its Correlation to Other Gas and Dust Features. *G. C. Sloan, Kathleen E. Kraemer, J. H. Goebel, & Stephan D. Price.* 594, 482 (2003)

Deep Keck Adaptive Optics Searches for Extrasolar Planets in the Dust of ϵ Eridani and Vega. *Bruce A. Macintosh, E. E. Becklin, Denise Kaisler, Quinn Konopacky, & B. Zuckerman.* 594, 538 (2003)

New Laboratory Spectra of Isolated β-SiC Nanoparticles: Comparison with Spectra Taken by the *Infrared Space Observatory*. *D. Clément, H. Mutschke, R. Klein, & Th. Henning.* 594, 642 (2003)

Line Intensities and Molecular Opacities of the FeH $F\,^4\Delta_i$–$X\,^4\Delta_i$ Transition. *M. Dulick, C. W. Bauschlicher, Jr., Adam Burrows, C. M. Sharp, R. S. Ram, & Peter Bernath.* 594, 651 (2003)

Modeling the Infrared Emission from the HD 141569A Disk. *Aigen Li & J. I. Lunine.* 594, 987 (2003)

Optical and Near-Infrared Photometry of the Type Ia Supernova 2000E in NGC 6951. *G. Valentini, E. Di Carlo, F. Massi, M. Dolci, A. A. Arkharov, V. M. Larionov, A. Pastorello, A. Di Paola, S. Benetti, E. Cappellaro, M. Turatto, F. Pedichini, F. D'Alessio, A. Caratti o Garatti, G. Li Causi, R. Speziali, I. J. Danziger, & A. Tornambé.* 595, 779 (2003)

The NIRSPEC Brown Dwarf Spectroscopic Survey. I. Low-Resolution Near-Infrared Spectra. *Ian S. McLean, Mark R. McGovern, Adam J. Burgasser, J. Davy Kirkpatrick, L. Prato, & Sungsoo S. Kim.* 596, 561 (2003)

Beyond the T Dwarfs: Theoretical Spectra, Colors, and Detectability of the Coolest Brown Dwarfs. *Adam Burrows, David Sudarsky, & Jonathan I. Lunine.* 596, 587 (2003)

Near-Infrared, Adaptive Optics Observations of the T Tauri Multiple-Star System. *Elise Furlan, William J. Forrest, Dan M. Watson, Keven I. Uchida, Bernhard R. Brandl, Luke D. Keller, & Terry L. Herter.* 596, L87 (2003)

Near-Infrared Spectrophotometry and the CO Emission in V2274 Cygni (Nova Cygni 2001 No. 1). *Richard J. Rudy, William L. Dimpfl, David K. Lynch, S. Mazuk, Catherine C. Venturini, John C. Wilson, R. C. Puetter, & R. Brad Perry.* 596, 1229 (2003)

Using Narrowband Photometry to Detect Young Brown Dwarfs in IC 348. *A. K. Mainzer & Ian S. McLean.* 597, 555 (2003)

Infrared Observations During the Secondary Eclipse of HD 209458b. II. Strong Limits on the Infrared Spectrum near 2.2 Microns. *L. Jeremy Richardson, Drake Deming, & Sara Seager.* 597, 581 (2003)

A Study of Cygni OB2: Pointing the Way toward Finding Our Galaxy's Super–Star Clusters. *M. M. Hanson.* 597, 957 (2003)

Unveiling the Inner Disk Structure of T Tauri Stars. *James Muzerolle, Nuria Calvet, Lee Hartmann, & Paola D'Alessio.* 597, L149 (2003)

The Age Dependence of the Vega Phenomenon: Theory. *C. Dominik & G. Decin.* 598, 626 (2003)

Age Dependence of the Vega Phenomenon: Observations. *G. Decin, C. Dominik, L. B. F. M. Waters, & C. Waelkens.* 598, 636 (2003)

Remarkable Changes in the Near-Infrared Spectrum of the Nova-like Variable V4332 Sagittarii. *Dipankar P. K. Banerjee, Watson P. Varricatt, Nagarhalli M. Ashok, & Olli Launila.* 598, L31 (2003)

Modeling the Infrared Emission from the ϵ Eridani Disk. *Aigen Li, J. I. Lunine, & G. J. Bendo.* 598, L51 (2003)

The Dust Ring of Luminous Blue Variable Candidate HD 168625: Infrared Observations and Model Calculations. *Timothy B. O'Hara, Margaret Meixner, Angela K. Speck, Toshiya Ueta, & Matthew Bobrowsky.* 598, 1255 (2003)

On Titanium Carbide Nanoparticles as the Origin of the 21 Micron Emission Feature in Post–Asymptotic Giant Branch Stars. *Aigen Li.* 599, L45 (2003)

High-Precision Stellar Radial Velocities in the Galactic Center. *Donald F. Figer, Diane Gilmore, Sungsoo S. Kim, Mark Morris, E. E. Becklin, Ian S. McLean, Andrea M. Gilbert, James R. Graham, James E. Larkin, N. A. Levenson, & Harry I. Teplitz.* 599, 1139 (2003)

The Compact H II Region S88B: Excitation and Extinction. *Jennifer A. Goetz, Robert Gutermuth, Judith L. Pipher, William J. Forrest, & Eric M. Howard.* 599, 1173 (2003)

GRO J0422+32: The Lowest Mass Black Hole? *Dawn M. Gelino & Thomas E. Harrison.* 599, 1254 (2003)

The Mass Ratio Distribution in Main-Sequence Spectroscopic Binaries Measured by Infrared Spectroscopy. *T. Mazeh, M. Simon, L. Prato, B. Markus, & S. Zucker.* 599, 1344 (2003)

High-Resolution Infrared Spectroscopy of the Brown Dwarf ϵ Indi Ba. *Verne V. Smith, Takashi Tsuji, Kenneth H. Hinkle, Katia Cunha, Robert D. Blum, Jeff A. Valenti, Stephen T. Ridgway, Richard R. Joyce, & Peter Bernath.* 599, L107 (2003)

INSTABILITIES

Magnetic Reconnection Triggered by the Parker Instability in the Galaxy: Two-Dimensional Numerical Magnetohydrodynamic Simulations and Application to the Origin of X-Ray Gas in the Galactic Halo. *Syuniti Tanuma, Takaaki Yokoyama, Takahiro Kudoh, & Kazunari Shibata.* 582, 215 (2003)

Turbulence in Accretion Disks: Vorticity Generation and Angular Momentum Transport via the Global Baroclinic Instability. *H. H. Klahr & P. Bodenheimer.* 582, 869 (2003)

Clamshell and Tipping Instabilities in a Two-dimensional Magnetohydrodynamic Tachocline. *Paul S. Cally, Mausumi Dikpati, & Peter A. Gilman.* 582, 1190 (2003)

The Effect of External Winds on Relativistic Jets. *Philip E. Hardee & Philip A. Hughes.* 583, 116 (2003)

The Interaction of Supernova Remnants with Interstellar Clouds: Experiments on the Nova Laser. *Richard I. Klein, Kimberly S. Budil, Theordore S. Perry, & David R. Bach.* 583, 245 (2003)

High-Resolution Spectroscopy of the Yellow Hypergiant ρ Cassiopeiae from 1993 through the Outburst of 2000–2001. *A. Lobel, A. K. Dupree, R. P. Stefanik, G. Torres, G. Israelian, N. Morrison, C. de Jager, H. Nieuwenhuijzen, I. Ilyin, & F. Musaev.* 583, 923 (2003)

Two-dimensional Axisymmetric Collapse of Thermally Unstable Primordial Clouds. *Chang Hyun Baek, Hyesung Kang, & Dongsu Ryu.* 584, 675 (2003)

The Magnetorotational Instability in Core-Collapse Supernova Explosions. *Shizuka Akiyama, J. Craig Wheeler, David L. Meier, & Itamar Lichtenstadt.* 584, 954 (2003)

CH Cygni. I. Observational Evidence for a Disk-Jet Connection. *J. L. Sokoloski & S. J. Kenyon.* 584, 1021 (2003)

CH Cygni. II. Optical Flickering from an Unstable Disk. *J. L. Sokoloski & S. J. Kenyon.* 584, 1027 (2003)

Nonaxisymmetric Instabilities of a Toroidal Magnetic Field in a Rotating Sphere. *Keke Zhang, Xinhao Liao, & Gerald Schubert.* 585, 1124 (2003)

Interchange Method in Compressible Magnetized Couette Flow: Magnetorotational and Magnetoconvective Instabilities. *Dimitris M. Christodoulou, John Contopoulos, & Demosthenes Kazanas.* 586, 372 (2003)

r-Modes of Neutron Stars with Superfluid Cores. *Umin Lee & Shijun Yoshida.* 586, 403 (2003)

A Local One-Zone Model of Magnetohydrodynamic Turbulence in Dwarf Nova Disks. *Takayoshi Sano & James M. Stone.* 586, 1297 (2003)

The Nonlinear Evolution of Massive Stellar Core Collapses that "Fizzle." *James N. Imamura, Brian K. Pickett, & Richard H. Durisen.* 587, 341 (2003)

Cold Fronts in Cold Dark Matter Clusters. *Daisuke Nagai & Andrey V. Kravtsov.* 587, 514 (2003)

Effect of Internal Flows on Sunyaev-Zeldovich Measurements of Cluster Peculiar Velocities. *Daisuke Nagai, Andrey V. Kravtsov, & Arthur Kosowsky.* 587, 524 (2003)

On the Small-Scale Stability of Thermonuclear Flames in Type Ia Supernovae. *F. K. Roepke, J. C. Niemeyer, & W. Hillenbrandt.* 588, 952 (2003)

The Effect of Cosmic-Ray Diffusion on the Parker Instability. *Dongsu Ryu, Jongsoo Kim, Seung Soo Hong, & T. W. Jones.* 589, 338 (2003)

A Numerical Method for General Relativistic Magnetohydrodynamics. *Jean-Pierre De Villiers & John F. Hawley.* 589, 458 (2003)

Gap Formation by Planets in Turbulent Protostellar Disks. *Wayne F. Winters, Steven A. Balbus, & John F. Hawley.* 589, 543 (2003)

The Thermal Regulation of Gravitational Instabilities in Protoplanetary Disks. *Brian K. Pickett, Annie C. Mejía, Richard H. Durisen, Patrick M. Cassen, Donald K. Berry, & Robert P. Link.* 590, 1060 (2003)

The Numerical Simulation of Radiative Shocks. II. Thermal Instabilities in Two-dimensional Models. *Ralph S. Sutherland, Geoffrey V. Bicknell, & Michael A. Dopita.* 591, 238 (2003)

Probing the Edge of the Solar System: Formation of an Unstable Jet-Sheet. *Merav Opher, Paulett C. Liewer, Tamas I. Gombosi, Ward Manchester, Darren L. DeZeeuw, Igor Sokolov, & Gabor Toth.* 591, L61 (2003)

Warping of Accretion Disks with Magnetically Driven Outflows: A Possible Origin for Jet Precession. *Dong Lai.* 591, L119 (2003)

Cosmos: A Radiation-Chemo-Hydrodynamics Code for Astrophysical Problems. *Peter Anninos, P. Chris Fragile, & Stephen D. Murray.* 147, 177 (2003)

Global General Relativistic Magnetohydrodynamic Simulations of Accretion Tori. *Jean-Pierre De Villiers & John F. Hawley.* 592, 1060 (2003)

Nonaxisymmetric g-Mode and p-Mode Instability in a Hydrodynamic Thin Accretion Disk. *Li-Xin Li, Jeremy Goodman, & Ramesh Narayan.* 593, 980 (2003)

Local Three-dimensional Simulations of Magnetorotational Instability in Radiation-dominated Accretion Disks. *N. J. Turner, J. M. Stone, J. H. Krolik, & T. Sano.* 593, 992 (2003)

A Theoretical γ Doradus Instability Strip. *Phillip B. Warner, Anthony B. Kaye, & Joyce A. Guzik.* 593, 1049 (2003)

Massive Stars and the Energy Balance of the Interstellar Medium. I. The Impact of an Isolated 60 $M_\odot$ Star. *Tim Freyer, Gerhard Hensler, & Harold W. Yorke.* 594, 888 (2003)

One-armed Spiral Instability in Differentially Rotating Stars. *Motoyuki Saijo, Thomas W. Baumgarte, & Stuart L. Shapiro.* 595, 352 (2003)

Particle Acceleration in Relativistic Jets due to Weibel Instability. *K.-I. Nishikawa, P. Hardee, G. Richardson, R. Preece, H. Sol, & G. J. Fishman.* 595, 555 (2003)

Long-lived Double-barred Galaxies: Critical Mass and Length Scales. *Amr A. El-Zant & Isaac Shlosman.* 595, L41 (2003)

Branch, Spur, and Feather Formation in Spiral Galaxies. *S. Chakrabarti, G. Laughlin, & F. H. Shu.* 596, 220 (2003)

Black Hole Accretion Disks On The Edge. *Kristen Menou.* 596, 414 (2003)

Local Radiative Hydrodynamic and Magnetohydrodynamic Instabilities in Optically Thick Media. *Omer Blaes & Aristotle Socrates.* 596, 509 (2003)

Stability Analysis of Tachocline Latitudinal Differential Rotation and Coexisting Toroidal Band Using a Shallow-Water Model. *Mausumi Dikpati, Peter A. Gilman, & Matthias Rempel.* 596, 680 (2003)

Interpenetrating Plasma Shells: Near-Equipartition Magnetic Field Generation and Nonthermal Particle Acceleration. *L. O. Silva, R. A. Fonseca, J. W. Tonge, J. M. Dawson, W. B. Mori, & M. V. Medvedev.* 596, L121 (2003)

Thermal Instability in Clusters of Galaxies with Conduction. *Woong-Tae Kim & Ramesh Narayan.* 596, 889 (2003)

Turbulent Mixing in Clusters of Galaxies. *Woong-Tae Kim & Ramesh Narayan.* 596, L139 (2003)

The Fate of Nonradiative Magnetized Accretion Flows: Magnetically Frustrated Convection. *Ue-Li Pen, Christopher D. Matzner, & Shingkwong Wong.* 596, L207 (2003)

Preferential Heating of Particles by H-Cyclotron Waves Generated by a Global Magnetohydrodynamic Mode in Solar Coronal Holes. *T. X. Zhang.* 597, L69 (2003)

Onset of Shear Instability in Rotating Red Giants. *J. MacDonald & D. J. Mullan.* 598, 560 (2003)

Cosmological Mestel Disks and the Rossby Vortex Instability: The Origin of Supermassive Black Holes. *Stirling A. Colgate, Renyue Cen, Hui Li, Nathan Currier, & Michael S. Warren.* 598, L7 (2003)

Conditions of Dynamical Stability for the HD 160691 Planetary System. *Eric Bois, Ludmila Kiseleva-Eggleton, Nicolas Rambaux, & Elke Pilat-Lohinger.* 598, 1312 (2003)

Atmospheric Loss of Exoplanets Resulting from Stellar X-Ray and Extreme-Ultraviolet Heating. *H. Lammer, F. Selsis, I. Ribas, E. F. Guinan, S. J. Bauer, & W. W. Weiss.* 598, L121 (2003)

Spontaneous Generation of the Magnetic Field and Suppression of the Heat Conduction in Cold Fronts. *Nobuhiro Okabe & Makoto Hattori.* 599, 964 (2003)

Magnetorotationally Driven Galactic Turbulence and the Formation of Giant Molecular Clouds. *Woong-Tae Kim, Eve C. Ostriker, & James M. Stone.* 599, 1157 (2003)

Magnetically Driven Accretion Flows in the Kerr Metric. I. Models and Overall Structure. *Jean-Pierre De Villiers, John F. Hawley, & Julian H. Krolik.* 599, 1238 (2003)

INSTRUMENTATION: ADAPTIVE OPTICS

Suppression of Speckle Noise by Speckle Pinning in Adaptive Optics. *E. E. Bloemhof.* 582, L59 (2003)

Adaptive Optics Observations of Vega: Eight Detected Sources and Upper Limits to Planetary-Mass Companions. *Stanimir A. Metchev, Lynne A Hillenbrand, & Russel J. White.* 582, 1102 (2003)

Extrasolar Planet Finding via Optimal Apodized-Pupil and Shaped-Pupil Coronagraphs. *N. Jeremy Kasdin, Robert J. Vanderbei, David N. Spergel, & Michael G. Littman.* 582, 1147 (2003)

Discovery of a Tight Brown Dwarf Companion to the Low-Mass Star LHS 2397a. *Melanie Freed, Laird M. Close, & Nick Siegler.* 584, 453 (2003)

ι Cassiopeiae: Orbit, Masses, and Photometry from Adaptive Optics Imaging in the *I* and *H* Bands. *Jack Drummond, Scott Milster, Patrick Ryan, & Lewis C. Roberts, Jr.* 585, 1007 (2003)

Detection of Nine M8.0-L0.5 Binaries: The Very Low-Mass Binary Population and Its Implications for Brown Dwarf and Very Low Mass Star Formation. *Laird M. Close, Nick Siegler, Melanie Freed, & Beth Biller.* 587, 407 (2003)

Notch Filter Masks: Practical Image Masks for Planet-finding Coronagraphs. *Marc J. Kuchner & David N. Spergel.* 594, 617 (2003)

The Structure of High Strehl Ratio Point-Spread Functions. *Marshall D. Perrin, Anand Sivaramakrishnan, Russell B. Makidon, Ben R. Oppenheimer, & James R. Graham.* 596, 702 (2003)

Near-Infrared, Adaptive Optics Observations of the T Tauri Multiple-Star System. *Elise Furlan, William J. Forrest, Dan M. Watson, Keven I. Uchida, Bernhard R. Brandl, Luke D. Keller, & Terry L. Herter.* 596, L87 (2003)

Adaptive Optics Imaging and Spectroscopy of Cygnus A. I. Evidence for a Minor Merger. *Gabriela Canalizo, Claire Max, David Whysong, Robert Antonucci, & Scott E. Dahm.* 597, 823 (2003)

Mid-Infrared Imaging of the Post–Asymptotic Giant Branch Star AC Herculis with the Multiple Mirror Telescope Adaptive Optics System. *Laird M. Close, Beth Biller, William F. Hoffman, Phil M. Hinz, John H. Bieging, Francois Wildi, Michael Lloyd-Hart, Guido Brusa, Don Fisher, Doug Miller, & Roger Angel.* 598, L35 (2003)

An Adaptive Optics Survey of M6.0–M7.5 Stars: Discovery of Three Very Low Mass Binary Systems Including Two Probably Hyades Members. *Nick Siegler, Laird M. Close, Eric E. Mamajek, & Melanie Freed.* 598, 1265 (2003)

High-Resolution Images of Orbital Motion in the Trapezium Cluster: First Scientific Results from the Multiple Mirror Telescope Deformable Secondary Mirror Adaptive Optics System. *Laird M. Close, Francois Wildi, Michael Lloyd-Hart, Guido Brusa, Don Fisher, Doug Miller, Armando Riccardi, Piero Salinari, Donald McCarthy, Roger Angel, Rich Allen, H. M. Martin, Richard G. Sosa, Manny Montoya, Matt Rademacher, Mario Rascon, Dylan Curley, Nick Siegler, & Wolfgang J. Duschl.* 599, 537 (2003)

INSTRUMENTATION: DETECTORS

Design, Implementation, and Testing of the *Microwave Anisotropy Probe* Radiometers. *N. Jarosik, C. L. Bennett, M. Halpern, G. Hinshaw, A. Kogut, M. Limon, S. S. Meyer, L. Page, M. Pospieszalski, D. N. Spergel, G. S. Tucker, D. T. Wilkinson, E. Wollack, E. L. Wright, & Z. Zhang.* 145, 413 (2003)

Refining *Chandra*/ACIS Subpixel Event Repositioning Using a Backside-illuminated CCD Model. *Jingqiang Li, Joel H. Kastner, Gregory Y. Prigozhin, & Norbert S. Schulz.* 590, 586 (2003)

A Fluorescent Aerogel for Capture and Identification of Interplanetary and Interstellar Dust. *Gerardo Domínguez, Andrew J. Westphal, Mark L. F. Phillips, & Steven M. Jones.* 592, 631 (2003)

Mitigation of Radar Interference in *L*-Band Radio Astronomy. *S. W. Ellingson & G. A. Hampson.* 147, 167 (2003)

First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Preliminary Maps and Basic Results. *C. L. Bennett, M. Halpern, G. Hinshaw, N. Jarosik, A. Kogut, M. Limon, S. S. Meyer, L. Page, D. N. Spergel, G. S. Tucker, E. Wollack, E. L. Wright, C. Barnes, M. R. Greason, R. S. Hill, E. Komatsu, M. R. Nolta, N. Odegard, H. V. Peiris, L. Verde, & J. L. Weiland.* 148, 1 (2003)

First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: On-Orbit Radiometer Characterization. *N. Jarosik, C. Barnes, C. L. Bennett, M. Halpern, G. Hinshaw, A. Kogut, M. Limon, S. S. Meyer, L. Page, D. N. Spergel, G. S. Tucker, J. L. Weiland, E. Wollack, & E. L. Wright.* 148, 29 (2003)

First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Data Processing Methods and Systematic Errors Limits. *G. Hinshaw, C. Barnes, C. L. Bennett, M. R. Greason, M. Halpern, R. S. Hill, N. Jarosik, A. Kogut, M. Limon, S. S. Meyer, N. Odegard, L. Page, D. N. Spergel, G. S. Tucker, J. L. Weiland, E. Wollack, & E. L. Wright.* 148, 63 (2003)

Observation of TeV Gamma Rays from the Crab Nebula with Milagro Using a New Background Rejection Technique. *R. Atkins, W. Benbow, D. Berley, E. Blaufuss, J. Bussons, D. G. Coyne, R. S. Delay, T. DeYoung, B. L. Dingus, D. E. Dorfan, R. W. Ellsworth, A. Falcone, L. Fleysher, R. Fleysher, G. Gisler, M. M. Gonzalez, J. A. Goodman, T. J. Haines, E. Hays, C. M. Hoffman, L. A. Kelley, R. W. Laird, J. McCullough, J. E. McEnery, R. S. Miller, A. I. Mincer, M. F. Morales, P. Nemethy, D. Noyes, J. M. Ryan, F. W. Samuelson, M. Schneider, B. Shen, A. Shoup, G. Sinnis, A. J. Smith, G. W. Sullivan, O. T. Tumer, K. Wang, M. Wascko, D. A. Williams, S. Westerhoff, M. E. Wilson, X. Xu, & G. B. Yodh.* 595, 803 (2003)

INSTRUMENTATION: HIGH ANGULAR RESOLUTION

Ground-based Near-Infrared Imaging of the HD 141569 Circumstellar Disk. *A. Boccaletti, J.-C. Augereau, F. Marchis, & J. Hahn.* 585, 494 (2003)

The Observation of Sunspot Light-Bridge Structure and Dynamics. *T. E. Berger & S. V. Berdyugina.* 589, L117 (2003)

Two-Mirror Apodization for High-Contrast Imaging. *Wesley A. Traub & Robert J. Vanderbei.* 599, 695 (2003)

INSTRUMENTATION: INTERFEROMETERS

Adaptive Optics Observations of Vega: Eight Detected Sources and Upper Limits to Planetary-Mass Companions. *Stanimir A. Metchev, Lynne A. Hillenbrand, & Russel J. White.* 582, 1102 (2003)

Observations of DG Tauri with the Keck Interferometer. *M. Colavita, R. Akeson, P. Wizinowich, M. Shao, S. Acton, J. Beletic, J. Bell, J. Berlin, A. Boden, A. Booth, R. Boutell, F. Chaffee, D. Chan, J. Chock, R. Cohen, S. Crawford, M. Creech-Eakman, G. Eychaner, C. Felizardo, J. Gathright, G. Hardy, H. Henderson, J. Herstein, M. Hess, E. Hovland, M. Hrynevych, R. Johnson, J. Kelley, R. Kendrick, C. Koresko, P. Kurpis, D. Le Mignant, H. Lewis, E. Ligon, W. Lupton, D. McBride, B. Mennesson, R. Millan-Gabet, J. Monnier, J. Moore, C. Nance, C. Neyman, A. Niessner, D. Palmer, L. Reder, A. Rudeen, T. Saloga, A. Sargent, E. Serabyn, R. Smythe, P. Stomski, K. Summers, M. Swain, P. Swanson, R. Thompson, K. Tsubota, A. Tumminello, G. van Belle, G. Vasisht, J. Vause, J. Walker, K. Wallace, & U. Wehmeier.* 592, L83 (2003)

High-Resolution Broadband Spectroscopy Using an Externally Dispersed Interferometer. *David J. Erskine, Jerry Edelstein, W. Michael Feuerstein, & Barry Welsh.* 592, L103 (2003)

Interferometer Observations of Subparsec-Scale Infrared Emission in the Nucleus of NGC 4151. *Mark Swain, G. Vasisht, R. Akeson, J. Monnier, R. Millan-Gabet, E. Serabyn, M. Creech-Eakman, G. van Belle, J. Beletic, C. Beichman, A. Boden, A. Booth, M. Colavita, J. Gathright, M. Hrynevych, C. Koresko, D. Le Mignant, R. Ligon, B. Mennesson, C. Neyman, A. Sargent, M. Shao, R. Thompson, S. Unwin, & P. Wizinowich.* 596, L163 (2003)

INSTRUMENTATION: MISCELLANEOUS

How Sample Completeness Affects Gamma-Ray Burst Classification. *Jon Hakkila, Timothy W. Giblin, Richard J. Roiger, David J. Haglin, William S. Paciesas, & Charles A. Meegan.* 582, 320 (2003)

Spiderweb Masks for High-Contrast Imaging. *Robert J. Vanderbei, David N. Spergel, & N. Jeremy Kasdin.* 590, 593 (2003)

First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Beam Profiles and Window Functions. *L. Page, C. Barnes, G. Hinshaw, D. N. Spergel, J. L. Weiland, E. Wollack, C. L. Bennett, M. Halpern, N. Jarosik, A. Kogut, M. Limon, S. S. Meyer, G. S. Tucker, & E. L. Wright.* 148, 39 (2003)

First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Galactic Signal Contamination from Sidelobe Pickup. *C. Barnes, R. S. Hill, G. Hinshaw, L. Page, C. L. Bennett, M. Halpern, N. Jarosik, A. Kogut, M. Limon, S. S. Meyer, G. S. Tucker, E. Wollack, & E. L. Wright.* 148, 51 (2003)

BOOMERANG: A Balloon-Borne Millimeter-Wave Telescope and Total Power Receiver for Mapping Anisotropy in the Cosmic Microwave Background. *B. P. Crill, P. A. R. Ade, D. R. Artusa, R. S. Bhatia, J. J. Bock, A. Boscaleri, P. Cardoni, S. E. Church, K. Coble, P. deBernardis, G. deTroia, P. Farese, K. M. Ganga, M. Giacometti, C. V. Haynes, E. Hivon, V. V. Hristov, A. Iacoangeli, W. C. Jones, A. E. Lange, L. Martinis, S. Masi, P. V. Mason, P. D. Mauskopf, L. Miglio, T. Montroy, C. B. Netterfield, C. G. Paine, E. Pascale, F. Paiccntini, G. Polenta, F. Pongetti, G. Romeo, J. E. Ruhl, F. Scaramuzzi, D. Sforna, & A. D. Turner.* 148, 527 (2003)

The Rotation of the Deep Solar Layers. *S. Couvidat, R. A. García, S. Turck-Chièze, T. Corbard, C. J. Henney, & S. Jiménez-Reyes.* 597, L77 (2003)

Photon Orbital Angular Momentum in Astrophysics. *Martin Harwit.* 597, 1266 (2003)

Circularly Symmetric Apodization via Star-Shaped Masks. *Robert J. Vanderbei, David N. Spergel, & N. Jeremy Kasdin.* 599, 686 (2003)

Solar Seismic Models and the Neutrino Predictions. *S. Couvidat, S. Turck-Chièze, & A. G. Kosovichev.* 599, 1434 (2003)

ACBAR: The Arcminute Cosmology Bolometer Array Receiver. *M. C. Runyan, P. A. R. Ade, R. S. Bhatia, J. J. Bock, M. D. Daub, J. H. Goldstein, C. V. Haynes, W. L. Holzapfel, C. L. Kuo, A. E. Lange, J. Leong, M. Lueker, M. Newcomb, J. B. Peterson, C. Reichardt, J. Ruhl, G. Sirbi, E. Torbet, C. Tucker, A. D. Turner, & D. Woolsey.* 149, 265 (2003)

INSTRUMENTATION: POLARIMETERS

Mid-Infrared Imaging Polarimetry of NGC 7027. *C. A. Jurgenson, R. E. Stencel, D. S. Theil, D. I. Klebe, & T. Ueta.* 582, L35 (2003)

An Instrument for Investigating the Large Angular Scale Polarization of the Cosmic Microwave Background. *Brian G. Keating, Christopher W. O'Dell, Joshua O. Gundersen, Lucio Piccirillo, Nate C. Stebor, & Peter T. Timbie.* 144, 1 (2003)

First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Temperature-Polarization Correlation. *A. Kogut, D. N. Spergel, C. Barnes, C. L. Bennett, M. Halpern, G. Hinshaw, N. Jarosik, M. Limon, S. S. Meyer, L. Page, G. S. Tucker, E. Wollack, & E. L. Wright.* 148, 161 (2003)

INSTRUMENTATION: SPECTROGRAPHS

The Solar Chromosphere/Corona Interface. I. Far-Ultraviolet to Extreme-Ultraviolet Observations and Modeling of Unresolved Coronal Funnels. *Dennis S. Martínez-Galarce, Arthur B. C. Walker II, Troy W. Barbee II, & Richard B. Hoover.* 585, 1095 (2003)

SPINR—a Wide-Field Ultraviolet Spectral Imaging System. *T. A. Cook, V. J. Gsell, J. Golub, & S. Chakrabarti.* 585, 1177 (2003)

High-Resolution Broadband Spectroscopy Using an Externally Dispersed Interferometer. *David J. Erskine, Jerry Edelstein, W. Michael Feuerstein, & Barry Welsh.* 592, L103 (2003)

Realizing Integral Field Spectroscopy in the Far-Infrared. *Leslie W. Looney, Walfried Raab, Albrecht Poglitsch, & Norbert Geis.* 597, 628 (2003)

INTERGALACTIC MEDIUM

Linear Gas Dynamics in the Expanding Universe. *Nickolay Y. Gnedin, Emily J. Baker, Thomas J. Bethell, Meredith M. Drosback, A. Gayler Harford, Amalia K. Hicks, Adam G. Jensen, Brian A. Keeney, Christopher M. Kelso, Mark C. Neyrinck, Scott E. Pollack, & Timothy P. van Vliet.* 583, 525 (2003)

Toward a Measurement of the Cosmological Geometry at $z \sim 2$: Predicting Lyα Forest Correlation in Three Dimensions and the Potential of Future Data Sets. *Patrick McDonald.* 585, 34 (2003)

Chandra Observations of the Cooling Flow Cluster Abell 2052. *Elizabeth L. Blanton, Craig L. Sarazin, & Brian R. McNamara.* 585, 227 (2003)

Three Epochs of Star Formation in the High-Redshift Universe. *Jonathan Mackey, Volker Bromm, & Lars Hernquist.* 586, 1 (2003)

Chandra Observations of A2029: The Dark Matter Profile Down to below $0.01r_{\rm vir}$ in an Unusually Relaxed Cluster. *Aaron D. Lewis, David A. Buote, & John T. Stocke.* 586, 135 (2003)

Chandra Temperature Map of A754 and Constraints on Thermal Conduction. *M. Markevitch, P. Mazzotta, A. Vikhlinin, D. Burke, Y. Butt, L. David, H. Donnelly, W. R. Forman, D. Harris, D.-W. Kim, S. Virani, & J. Vrtilek.* 586, L19 (2003)

Chandra Detection of Local O II Heα Absorption along the Sight Line toward 3C 273. *Taotao Fang, Kenneth R. Sembach, & Claude R. Canizares.* 586, L49 (2003)

Measuring Feedback Using the Intergalactic Medium State and Evolution Inferred from the Soft X-Ray Background. *Pengjie Zhang & Ue-Li Pen.* 588, 704 (2003)

Observed Non–Steady State Cooling and the Moderate Cluster Cooling Flow Model. *Noam Soker & Laurence P. David.* 589, 770 (2003)

Inferring the Linear Power Spectrum from the Lyα Forest. *Matias Zaldarriaga, Román Scoccimarro, & Lam Hui.* 590, 1 (2003)

Autocorrelation Function of the Soft X-Ray Background Produced by Warm-Hot Gas in Dark Halos. *Xiang-Ping Wu & Yan-Jie Xue.* 590, 8 (2003)

Technique for Detecting Warm-Hot Intergalactic Gas in Quasar Ultraviolet Spectra. *Luc Binette, Mario Rodríguez-Martínez, Sinhue Haro-Corzo, & Isidro Ballinas.* 590, 58 (2003)

High Resolution X-Ray Spectroscopic Constraints on Cooling-Flow Models for Clusters of Galaxies. *J. R. Peterson, S. M. Kahn, F. B. S. Paerels, J. S. Kaastra, T. Tamura, J. A. M. Bleeker, C. Ferrigno, & J. G. Jernigan.* 590, 207 (2003)

Iron Abundance in the Intracluster Medium at High Redshift. *P. Tozzi, P. Rosati, S. Ettori, S. Borgani, V. Mainieri, & C. Norman.* 593, 705 (2003)

Role of Clusters of Galaxies in the Evolution of the Metal Budget in the Universe. *A. Finoguenov, A. Burkert, & H. Böhringer.* 594, 136 (2003)

XMM-Newton and *Chandra* Observations of the Galaxy Group NGC 5044. I. Evidence for Limited Multiphase Hot Gas. *David A. Buote, Aaron D. Lewis, Fabrizio Brighenti, & William G. Mathews.* 594, 741 (2003)

The Nature and Origin of the Nonvoid Lyα Cloud Population. *Curtis V. Manning.* 595, 19 (2003)

Probing beyond the Epoch of Hydrogen Reionization with 21 Centimeter Radiation. *Benedetta Ciardi & Piero Madau.* 596, 1 (2003)

The Thermal Memory of Reionization History. *Lam Hui & Zoltán Haiman.* 596, 9 (2003)

Metallicity of the Intergalactic Medium Using Pixel Statistics. II. The Distribution of Metals as Traced by C IV. *Joop Schaye, Anthony Aguirre, Tae-Sun Kim, Tom Theuns, Michael Rauch, & Wallace L. W. Sargent.* 596, 768 (2003)

Hydrogen Clouds before Reionization: A Lognormal Model Approach. *Hongguang Bi, Li-Zhi Fang, Longlong Feng, & Yipeng Jing.* 598, 1 (2003)

The Mass, Baryonic Fraction, and X-Ray Temperature of the Luminous, High-Redshift Cluster of Galaxies MS 0451.6−0305. *Megan Donahue, Jessica A. Gaskin, Sandeep K. Patel, Marshall Joy, Doug Clowe, & John P. Hughes.* 598, 190 (2003)

Metallicity Evolution of Damped Lyα Systems in ΛCDM Cosmology. *Renyue Cen, Jeremiah P. Ostriker, Jason X. Prochaska, & Arthur M. Wolfe.* 598, 741 (2003)

A *Hubble Space Telescope* Search for Lyman Continuum Emission from Galaxies at $1.1 < z < 1.4$. *Matthew Malkan, Wayne Webb, & Quinn Konopacky.* 598, 878 (2003)

INTERPLANETARY MEDIUM

Short-Period Magnetic Fluctuations in *Advanced Composition Explorer* Solar Wind Data: Evidence for Anticorrelation with Alfvén Speed. *D. J. Mullan, C. W. Smith, N. F. Ness, & R. M. Skoug.* 583, 496 (2003)

Heliocentric Dependence of the Sodium Emission of Comet 153P/Ikeya-Zhang. *Jun-ichi Watanabe, Hideyo Kawakita, Reiko Furusho, & Mitsugu Fujii.* 585, L159 (2003)

WIND Observations of Anomalous Cosmic Rays from Solar Minimum to Maximum. *D. V. Reames & F. B. McDonald.* 586, L99 (2003)

The Solar Wind and Its Magnetic Sources at Sunspot Maximum. *Y.-M. Wang & N. R. Sheeley, Jr.* 587, 818 (2003)

Observation of GeV Solar Energetic Particles from the 1997 November 6 Event Using Milagrito. *A. Falcone, R. Atkins, W. Benbow, D. Berley, M. L. Chen, D. G. Coyne, B. L. Dingus, D. E. Dorfan, R. W. Ellsworth, L. Fleysher, R. Fleysher, G. Gisler, J. A. Goodman, T. J. Haines, C. M. Hoffman, S. Hugenberger, L. A. Kelley, I. Leonor, J. F. McCullough, J. E. McEnery, R. S. Miller, A. I. Mincer, M. F. Morales, P. Nemethy, J. M. Ryan, B. Shen, A. Shoup, G. Sinnis, A. J. Smith, G. W. Sullivan, T. Tumer, K. Wang, M. O. Wascko, S. Westerhoff, D. A. Williams, T. Yang, & G. B. Yodh.* 588, 557 (2003)

The Geometry of Resonant Signatures in Debris Disks with Planets. *Marc J. Kuchner & Matthew J. Holman.* 588, 1110 (2003)

Evidence for a Suprathermal Seed Population of Heavy Ions Accelerated by Interplanetary Shocks near 1 AU. *M. I. Desai, G. M. Mason, J. R. Dwyer, J. E. Mazur, R. E. Gold, S. M. Krimigis, C. W. Smith, & R. M. Skoug.* 588, 1149 (2003)

Solar Particle Transport in a Dynamical Quasi-linear Theory. *Wolfgang Dröge.* 589, 1027 (2003)

Discovery of Dust Trail of *STARDUST* Comet Sample Return Mission Target: 81P/Wild 2. *M. Ishiguro, S. M. Kwon, Y. Sarugaku, S. Hasegawa, F. Usui, S. Nishiura, Y. Nakada, & H. Yano.* 589, L101 (2003)

Asterospheric Magnetic Fields and Winds of Cool Stars. *Carolus J. Schrijver, Marc L. DeRosa, & Alan M. Title.* 590, 493 (2003)

Evolution of Magnetic Fields in Corotating Interaction Regions from 1 to 95 AU: Order to Chaos. *L. F. Burlaga, C. Wang, J. D. Richardson, & N. F. Ness.* 590, 554 (2003)

On the Fluctuating Component of the Sun's Large-Scale Magnetic Field. *Y.-M. Wang & N. R. Sheeley, Jr.* 590, 1111 (2003)

Cosmic-Ray Spectra at Spherical Termination Shocks. *V. Florinski & J. R. Jokipii.* 591, 454 (2003)

Modeling Shock-accelerated Solar Energetic Particles Coupled to Interplanetary Alfvén Waves. *C. K. Ng, D. V. Reames, & A. J. Tylka.* 591, 461 (2003)

Recent Origin of the Solar System Dust Bands. *David Nesvorný, William F. Bottke, Harold F. Levison, & Luke Dones.* 591, 486 (2003)

Probing the Edge of the Solar System: Formation of an Unstable Jet-Sheet. *Merav Opher, Paulett C. Liewer, Tamas I. Gombosi, Ward Manchester, Darren L. DeZeeuw, Igor Sokolov, & Gabor Toth.* 591, L61 (2003)

Modeling the Sun's Large-Scale Magnetic Field during the Maunder Minimum. *Y.-M. Wang & N. R. Sheeley, Jr.* 591, 1248 (2003)

A Fluorescent Aerogel for Capture and Identification of Interplanetary and Interstellar Dust. *Gerardo Domínguez, Andrew J. Westphal, Mark L. F. Phillips, & Steven M. Jones.* 592, 631 (2003)

Characteristics of Scatter-free Behavior of Heliospheric Pickup Ions. *J. G. Luhmann.* 592, 1241 (2003)

Loss Cone Precursors to Forbush Decreases and Advance Warning of Space Weather Effects. *K. Leerungnavarat, D. Ruffolo, & J. W. Bieber.* 593, 587 (2003)

Effects of Interstellar and Solar Wind Ionized Helium on the Interaction of the Solar Wind with the Local Interstellar Medium. *Vlad Izmodenov, Yury G. Malama, George Gloeckler, & Johannes Geiss.* 594, L59 (2003)

Interactions of Dust Grains with Coronal Mass Ejections and Solar Cycle Variations of the F-Coronal Brightness. *B. R. Ragot & S. W. Kahler.* 594, 1049 (2003)

Chandra Obsrevations of the Central Region of A3112. *Motokazu Takizawa, Craig L. Sarazin, Elizabeth L. Blanton, & Greg B. Taylor.* 595, 142 (2003)

A Three-dimensional Model of the Solar Wind Incorporating Solar Magnetogram Observations. *I. I. Roussev, T. I. Gombosi, I. V. Sokolov, M. Velli, W. Manchester IV, D. L. DeZeeuw, P. Liewer, G. Tóth, & J. Luhmann.* 595, L57 (2003)

Possible Distortion of the Interplanetary Magnetic Field by the Dust Trail of Comet 122P/de Vico. *G. H. Jones, A. Balogh, C. T. Russell, & M. K. Dougherty.* 597, L61 (2003)

Near-Relativistic Solar Electrons and Type III Radio Bursts. *H. V. Cane.* 598, 1403 (2003)

On the Topological Evolution of the Coronal Magnetic Field During the Solar Cycle. *Y. M. Wang & N. R. Sheeley, Jr.* 599, 1404 (2003)

ISM: ABUNDANCES

Elemental Abundances and Mass Densities of Dust and Gas in the Local Interstellar Cloud. *Hiroshi Kimura, Ingrid Mann, & Elmar K. Jessberger.* 582, 846 (2003)

Composition, Structure, and Size Distribution in the Local Interstellar Cloud. *Hiroshi Kimura, Ingrid Mann, & Elmar K. Jessberger.* 583, 314 (2003)

New Constraints on the Energetics, Progenitor Mass, and Age of the Supernova Remnant G292.0+1.8 Containing PSR J1124−5916. *Marjorie Gonzalez & Samar Safi-Harb.* 583, L91 (2003)

$H^{13}CO^+$ and CH_3OH Line Observations of Prestellar Dense Cores in the TMC-1C Region. II. Internal Structure. *Shigehisa Takakuwa, Takeshi Kamazaki, Masao Saito, & Naomi Hirano.* 584, 818 (2003)

A Survey of *Far Ultraviolet Spectroscopic Explorer* and *Hubble Space Telescope* Sight Lines through High-Velocity Cloud Complex C. *Joseph A. Collins, J. Michael Shull, & Mark L. Giroux.* 585, 336 (2003)

Chemical Evolution in Protostellar Envelopes: Cocoon Chemistry. *S. D. Rodgers & S. B. Charnley.* 585, 355 (2003)

CO Depletion and Deuterium Fractionation in Prestellar Cores. *A. Bacmann, B. Lefloch, C. Ceccarelli, J. Steinacker, A. Castets, & L. Loinard.* 585, L55 (2003)

Measurement of $^3He/^4He$ in the Local Interstellar Medium: The Collisa Experiment on *Mir*. *E. Salerno, F. Bühler, P. Bochsler, H. Busemann, M. L. Bassi, G. N. Zastenker, Yu. N. Agafonov, & N. A. Eismont.* 585, 840 (2003)

A *Far Ultraviolet Spectroscopic Explorer* Survey of Molecular Hydrogen in Intermediate-Velocity Clouds in the Milky Way Halo. *Philipp Richter, Bart P. Wakker, Blair D. Savage, & Kenneth R. Sembach.* 586, 230 (2003)

An Ultrahigh-Resolution Survey of the Interstellar $^7Li/^6Li$ Isotope Ratio in the Solar Neighborhood. *David C. Knauth, S. R. Federman, & David L. Lambert.* 586, 268 (2003)

Deuterium toward Two Milky Way Disk Stars: Probing Extended Sight Lines with the *Far Ultraviolet Spectroscopic Explorer*. *Charles G. Hoopes, Kenneth R. Sembach, Guillaume Hébrard, H. Warren Moos, & David C. Knauth.* 586, 1094 (2003)

CH, CO, and $E(B-V)$ as Molecular Gas Tracers in a Translucent Cloud. *Loris Magnani, Raymond J. Chastain, Hyekyung Clarisse Kim, Dap Hartmann, Anthony T. Truong, & Patrick Thaddeus.* 586, 1111 (2003)

On the Variation of Deuterium and Oxygen Abundances in the Local Interstellar Medium. *Gary Steigman.* 586, 1120 (2003)

Interstellar Deuterium, Nitrogen, and Oxygen Abundances toward GD 246, WD 2331−475, HZ 21, and Lanning 23: Results from the *FUSE*

Mission. *Cristina M. Oliveira, Guillaume Hébrard, J. Christopher Howk, Jeffrey W. Kruk, Pierre Chayer, & H. Warren Moos.* 587, 235 (2003)

A Sensitive Very Large Array Search for Small-Scale Glycine Emission toward OMC-1. *J. M. Hollis, J. A. Pedelty, L. E. Snyder, P. R. Jewell, F. J. Lovas, Patrick Palmer, & S.-Y. Liu.* 588, 353 (2003)

Nonthermal Chemistry in Diffuse Clouds with Low Molecular Abundances. *J. Zsargó & S. R. Federman.* 589, 319 (2003)

Distribution and Kinematics of O VI in the Galactic Halo. *B. D. Savage, K. R. Sembach, B. P. Wakker, P. Richter, M. Meade, E. B. Jenkins, J. M. Shull, H. W. Moos, & G. Sonneborn.* 146, 125 (2003)

[Fe IV] Emission in Ionized Nebulae. *Monica Rodriguez.* 590, 296 (2003)

A Survey of Acetic Acid toward Hot Molecular Cores. *A. Remijan, L. E. Snyder, D. N. Friedel, S.-Y. Liu, & R. Y. Shah.* 590, 314 (2003)

Submillimeter Wave Astronomy Satellite Mapping Observations of Water Vapor around Sagittarius B2. *David A. Neufeld, Edwin A. Bergin, Gary J. Melnick, & Paul F. Goldsmith.* 590, 882 (2003)

Interaction between the Outflow and the Core in IRAM 04191+1522. *Shigehisa Takakuwa, Nagayoshi Ohashi, & Naomi Hirano.* 590, 932 (2003)

Nonthermal Emission from the Arches Cluster (G0.121+0.017) and the Origin of γ-Ray Emission from 3EG J1746−2851. *F. Yusef-Zadeh, M. Nord, M. Wardle, C. Law, C. Lang, & T. J. W. Lazio.* 590, L103 (2003)

Feedback from the First Supernovae in Protogalaxies: The Fate of the Generated Metals. *Keiichi Wada & Aparna Venkatesan.* 591, 38 (2003)

Further Evidence for Chemical Fractionation from Ultraviolet Observations of Carbon Monoxide. *S. R. Federman, David L. Lambert, Yaron Sheffer, Jason A. Cardelli, B.-G. Andersson, Ewine F. van Dishoeck, & J. Zsargó.* 591, 986 (2003)

Oxygen Gas-Phase Abundance Revisited. *M. K. André, C. M. Oliveira, J. C. Howk, R. Ferlet, J.-M. Désert, G. Hébrard, S. Lacour, A. Lecavelier des Étangs, A. Vidal-Madjar, & H. W. Moos.* 591, 1000 (2003)

[C I] 492 GHz Mapping Observations of the High-Latitude Translucent Cloud MCLD 123.5+24.9. *F. Bensch, U. Leuenhagen, J. Stutzki, & R. Schieder.* 591, 1013 (2003)

High-Resolution Observations of Interstellar Ca I Absorption—Implications for Depletions and Electron Densities in Diffuse Clouds. *Daniel E. Welty, L. M. Hobbs, & Donald C. Morton.* 147, 61 (2003)

The Effect of Collisional Enhancement of Balmer Lines on the Determination of the Primordial Helium Abundance. *V. Luridiana, A. Peimbert, M. Peimbert, & M. Cervino.* 592, 846 (2003)

On the Origin of the High-Ionization Intermediate-Velocity Gas toward HD 14434. *David C. Knauth, J. Christopher Howk, Kenneth R. Sembach, James T. Lauroesch, & David M. Meyer.* 592, 964 (2003)

The Hot Core around the Low-Mass Protostar IRAS 16293−2422: Scoundrels Rule! *S. Cazaux, A. G. G. M. Tielens, C. Ceccarelli, A. Castets, V. Wakelam, E. Caux, B. Parise, & D. Teyssier.* 593, L51 (2003)

Interstellar Glycine. *Yi-Jehng Kuan, Steven B. Charnley, Hui-Chun Huang, Wei-Ling Tseng, & Zbigniew Kisiel.* 593, 848 (2003)

First Detection of Doubly Deuterated Hydrogen Sulfide. *C. Vastel, T. G. Phillips, C. Ceccarelli, & J. Pearson.* 593, L97 (2003)

The Complete *Far Ultraviolet Spectroscopic Explorer* Spectrum of the Small Magellanic Cloud Star Sk 108. *Christoforos Mallouris.* 147, 265 (2003)

The Chemical Composition and Gas-to-Dust Mass Ratio of Nearby Interstellar Matter. *Priscilla C. Frisch & Jonathan D. Slavin.* 594, 844 (2003)

Mapping Observations of DNC and HN^{13}C in Dark Cloud Cores. *Tomoya Hirota, Masafumi Ikeda, & Satoshi Yamamoto.* 594, 859 (2003)

Very Large Telescope Echelle Spectrophotometry of the Planetary Nebula NGC 5307 and Temperature Variations. *María Teresa Ruiz, Antonio Peimbert, Manuel Peimbert, & César Esteban.* 595, 247 (2003)

Abundances in the Neutral Interstellar Medium of I Zw 18 from *Far Ultrviolet Spectroscopic Explorer* Observations. *A. Aloisi, S. Savaglio, T. M. Heckman, C. G. Hoopes, C. Leitherer, & K. R. Sembach.* 595, 760 (2003)

Far Ultraviolet Spectroscopic Explorer Survey of the Local Interstellar Medium within 200 Parsecs. *N. Lehner, E. B. Jenkins, C. Gry, H. W. Moos, P. Chayer, & S. Lacour.* 595, 858 (2003)

Abundances and Physical Conditions in the Interstellar Gas toward HD 185418. *Paule Sonnentrucker, Scott D. Friedman, Daniel E. Welty, Donald G. York, & Theodore P. Snow.* 596, 350 (2003)

Potential Variations in the Interstellar N I Abundance. *David C. Knauth, B-G Andersson, Stephan R. McCandliss, & H. Warren Moos.* 596, L51 (2003)

Kinematics of the SGR B2 (N-LMH) Molecular Core. *Jan M. Hollis, J. A. Pedelty, D. A. Boboltz, S.-Y. Liu, L. E. Snyder, Patrick Palmer, F. J. Lovas, & P. R. Jewell.* 596, L235 (2003)

Where Was the Iron Synthesized in Cassiopeia A? *Una Hwang & J. Martin Laming.* 597, 362 (2003)

The Homogeneity of Interstellar Krypton in the Galactic Disk. *Stefan I. B. Cartledge, David M. Meyer, & J. T. Lauroesch.* 597, 408 (2003)

FUSE Measurements of Rydberg Bands of Interstellar CO between 925 and 1150 Å. *Yaron Sheffer, S. R. Federman, & B.-G. Andersson.* 597, L29 (2003)

A Presolar Galactic Merger Spawned the SiC-Grain Mainstream. *Donald D. Clayton.* 598, 313 (2003)

Carbon Isotope Ratio in ^{12}CO/^{13}CO toward Local Molecular Clouds with Near-Infrared High-Resolution Spectroscopy of Vibrational Transition Bands. *Miwa Goto, Tomonori Usuda, Naruhisa Takato, Masa Hayashi, Seiichi Sakamoto, W. Gaessler, Yutaka Hayano, Masanori Iye, Yukiko Kamata, Tomio Kanzawa, Naoto Kobayashi, Yosuke Minowa, Ko Nedachi, Shin Oya, T.-S. Pyo, D. Saint-Jacques, Hiroshi Suto, Hideki Takami, Hiroshi Terada, & George F. Mitchell.* 598, 1038 (2003)

The Deuterium-to-Oxygen Ratio in the Interstellar Medium. *Guillaume Hébrard & H. Warren Moos.* 599, 296 (2003)

The DEEP Groth Strip Survey. VII. The Metallicity of Field Galaxies at $0.26 < z < 0.82$ and the Evolution of the Luminosity-Metallicity Relation. *Henry A. Kobulnicky, Christopher N. A. Willmer, Andrew C. Phillips, David C. Koo, S. M. Faber, Benjamin J. Weiner, Vicki L. Sarajedini, Luc Simard, & Nicole P. Vogt.* 599, 1006 (2003)

Measuring Global Galaxy Metallicities Using Emission-Line Equivalent Widths. *Henry A. Kobulnicky & Andrew C. Phillips.* 599, 1031 (2003)

ISM: ATOMS

Resolving the Kinematic Distance Ambiguity toward Galactic H II Regions. *Michal A. Kolpak, James M. Jackson, T. M. Bania, D. P. Clemens, & John M. Dickey.* 582, 756 (2003)

Fitting Together the H I Absorption and Emission in the Southern Galactic Plane Survey. *John M. Dickey, N. M. McClure-Griffiths, B. M. Gaensler, & A. J. Green.* 585, 801 (2003)

H I Narrow Self-Absorption in Dark Clouds. *D. Li & P. F. Goldsmith.* 585, 823 (2003)

Intensities of E2 Spectral Lines in the Astrophysically Important Ion Mg II. *E. Charro & I. Martín.* 585, 1191 (2003)

Structure of the H I Near the Northeast Limb of the Cygnus Loop. *D. A. Leahy.* 586, 224 (2003)

Ionized Gas in the First 10 Kiloparsecs of the Interstellar Galactic Halo. *J. Christopher Howk, Kenneth R. Sembach, & Blair D. Savage.* 586, 249 (2003)

An Ultrahigh-Resolution Survey of the Interstellar ^{7}Li/^{6}Li Isotope Ratio in the Solar Neighborhood. *David C. Knauth, S. R. Federman, & David L. Lambert.* 586, 268 (2003)

The Millennium Arecibo 21 Centimeter Absorption-Line Survey. II. Properties of the Warm and Cold Neutral Media. *Carl Heiles & T. H. Troland.* 586, 1067 (2003)

The Millenium Arecibo 21 Centimeter Absorption-Line Survey. I. Techniques and Gaussian Fits. *Carl Heiles & T. H. Troland.* 145, 329 (2003)

Kinematical Structure of the Local Interstellar Medium: The Galactic Anticenter Hemisphere. *Ricardo Génova & John E. Beckman.* 145, 355 (2003)

Are Compact High-Velocity Clouds Extragalactic Objects? *Philip R. Maloney & Mary E. Putman.* 589, 270 (2003)

Distribution of the C I Emission in the ρ Ophiuchi Dark Cloud. *Kazuhisa Kamegai, Masafumi Ikeda, Hiroyuki Maezawa, Tetsuya Ito, Mitsuhiro Iwata, Takeshi Sakai, Tomoharu Oka, Satoshi Yamamoto, Yutaro Sekimoto, Ken'ichi Tatematsu, Takashi Noguchi, Shuji Saito, Hideo Fujiwara, Hiroyuki Ozeki, Junji Inatani, & Masatoshi Ohishi.* 589, 378 (2003)

Neutral Hydrogen Associated with NGC 7129. *H. E. Matthews, C. R. Purton, R. S. Roger, P. E. Dewdney, & G. F. Mitchell.* 592, 176 (2003)

High-Latitude Molecular Clouds in an H I Filament toward the MBM 53, 54, and 55 Complex: Existence of an H_2 Cloud with Low CO Intensity. *H. Yamamoto, T. Onishi, A. Mizuno, & Y. Fukui.* 592, 217 (2003)

High-Resolution Observations of Interstellar Ca I Absorption—Implications for Depletions and Electron Densities in Diffuse Clouds. *Daniel E. Welty, L. M. Hobbs, & Donald C. Morton.* 147, 61 (2003)

On the Origin of the High-Ionization Intermediate-Velocity Gas toward HD 14434. *David C. Knauth, J. Christopher Howk, Kenneth R. Sembach, James T. Lauroesch, & David M. Meyer.* 592, 964 (2003)

Effects of Interstellar and Solar Wind Ionized Helium on the Interaction of the Solar Wind with the Local Interstellar Medium. *Vlad Izmodenov, Yury G. Malama, George Gloeckler, & Johannes Geiss.* 594, L59 (2003)

Far Ultraviolet Spectroscopic Explorer Survey of the Local Interstellar Medium within 200 Parsecs. *N. Lehner, E. B. Jenkins, C. Gry, H. W. Moos, P. Chayer, & S. Lacour.* 595, 858 (2003)

Potential Variations in the Interstellar N I Abundance. *David C. Knauth, B-G Andersson, Stephan R. McCandliss, & H. Warren Moos.* 596, L51 (2003)

A Neutral Hydrogen Survey of the Large Magellanic Cloud: Aperture Synthesis and Multibeam Data Combined. *Sungeun Kim, Lister Staveley-Smith, Michael A. Dopita, Robert J. Sault, Youngung Lee, & You-Hua Chu.* 148, 473 (2003)

Atomic Data for Resonance Absorption Lines. III. Wavelengths Longward of the Lyman Limit for the Elements Hydrogen to Gallium. *Donald C. Morton.* 149, 203 (2003)

A Neutral Hydrogen Self-Absorption Cloud in the Southern Galactic Plane Survey. *D. W. Kavars, J. M. Dickey, N. M. McClure-Griffiths, B. M. Gaensler, & A. J. Green.* 598, 1048 (2003)

The Wisconsin Hα Mapper Northern Sky Survey. *L. M. Haffner, R. J. Reynolds, S. L. Tufte, G. J. Madsen, K. P. Jaehnig, & J. W. Percival.* 149, 405 (2003)

ISM: BUBBLES

Flux-Tube Dynamics and a Model for the Origin of the Local Fluff. *Donald P. Cox & Louise Helenius.* 583, 205 (2003)

High-Latitude H I in NGC 2613: Buoyant Disk-Halo Outflow. *Judith A. Irwin & Tara Chaves.* 585, 268 (2003)

Optical Spectroscopy and Ionization Models of the Diffuse Ionized Gas in M33, M51/NGC 5195, and M81. *Charles G. Hoopes & René A. M. Walterbos.* 586, 902 (2003)

The Absorption and Emission Kinematics in the $z = 0.7450$ Mg II Absorber toward Q1331+17. *Sara L. Ellison, Gabriela Mallén-Ornelas, & Marcin Sawicki.* 589, 709 (2003)

Diffuse X-Ray Emission from the Quiescent Superbubble M17, the Omega Nebula. *Bryan C. Dunne, You-Hua Chu, C.-H. Rosie Chen, Justin D. Lowry, Leisa Townsley, Robert A. Gruendl, Martín A. Guerrero, & Margarita Rosado.* 590, 306 (2003)

The Impact of Ionizing Stars on the Diffuse Interstellar Medium: A Swept-Up Shell and Ionized Halo around the W4 Chimney/Superbubble. *S. Terebey, M. Fich, R. Taylor, Y. Cao, & T. Hancock.* 590, 906 (2003)

Chandra Observations of Expanding Shells in the Dwarf Starburst Galaxy NGC 3077. *Jürgen Ott, Crystal L. Martin, & Fabian Walter.* 594, 776 (2003)

Loops, Drips, and Walls in the Galactic Chimney GSH 277+00+36. *N. M. McClure-Griffiths, John M. Dickey, B. M. Gaensler, & A. J. Green.* 594, 833 (2003)

Massive Stars and the Energy Balance of the Interstellar Medium. I. The Impact of an Isolated 60 $M_\odot$ Star. *Tim Freyer, Gerhard Hensler, & Harold W. Yorke.* 594, 888 (2003)

Supernova Remnant Crossing a Density Jump: A Thin-Shell Model. *Yang Chen, Fan Zhang, Rosa M. Williams, & Q. Daniel Wang.* 595, 227 (2003)

GRB 021004: A Possible Shell Nebula around a Wolf-Rayet Star Gamma-Ray Burst Progenitor. *N. Mirabal, J. P. Halpern, Ryan Chornock, Alexei V. Filippenko, D. M. Terndrup, E. Armstrong, J. Kemp, J. R. Thorstensen, M. Tavarez, & C. Espaillat.* 595, 935 (2003)

Supergalactic Winds Driven by Multiple Super–Star Clusters. *Guillermo Tenorio-Tagle, Sergiy Silich, & Casiana Munoz-Tunon.* 597, 279 (2003)

Lyα Emission in Starbursts: Implications for Galaxies at High Redshift. *J. M. Mas-Hesse, D. Kunth, G. Tenorio-Tagle, C. Leitherer, R. J. Terlevich, & E. Terlevich.* 598, 858 (2003)

The Influence of Supershells and Galactic Outflows on the Escape of Ionizing Radiation from Dwarf Starburst Galaxies. *Akima Fujita, Crystal L. Martin, Mordecai-Mark Mac Low, & Tom Abel.* 599, 50 (2003)

Hot Gas in the Circumstellar Bubble S308. *You-Hua Chu, Martín A. Guerrero, Robert A. Gruendl, Guillermo García-Segura, & Heinrich J. Wendker.* 599, 1189 (2003)

ISM: CLOUDS

Inferring Physical Conditions in Interstellar Clouds of H_2. *Matthew K. Browning, Jason Tumlinson, & J. Michael Shull.* 582, 810 (2003)

Elemental Abundances and Mass Densities of Dust and Gas in the Local Interstellar Cloud. *Hiroshi Kimura, Ingrid Mann, & Elmar K. Jessberger.* 582, 846 (2003)

The Interaction of Supernova Remnants with Interstellar Clouds: Experiments on the Nova Laser. *Richard I. Klein, Kimberly S. Budil, Theordore S. Perry, & David R. Bach.* 583, 245 (2003)

Thermal OH (1667/1665 MHz) Absorption and Nonthermal OH (1720 MHz) Emission toward the W28 Supernova Remnant. *F. Yusef-Zadeh, M. Wardle, & D. A. Roberts.* 583, 267 (2003)

Large-Scale Turbulence in Molecular Clouds. *Christopher M. Brunt.* 583, 280 (2003)

A Fast Algorithm for Solving the Poisson Equation on a Nested Grid. *Tomoaki Matsumoto & Tomoyuki Hanawa.* 583, 296 (2003)

Structure Function Scaling in the Taurus and Perseus Molecular Cloud Complexes. *Paolo Padoan, Stanislav Boldyrev, William Langer, & Ake Nordlund.* 583, 308 (2003)

Composition, Structure, and Size Distribution in the Local Interstellar Cloud. *Hiroshi Kimura, Ingrid Mann, & Elmar K. Jessberger.* 583, 314 (2003)

A Spectrophotometric Method to Determine the Inclination of Class I Objects. *Takeshi Nakazato, Taishi Nakamoto, & Masayuki Umemura.* 583, 322 (2003)

An Outer Galaxy Molecular Cloud Catalog. *Christopher M. Brunt, C. R. Kerton, & Caroline Pomerleau.* 144, 47 (2003)

Chemistry and Dynamics in Pre-protostellar Cores. *Jeong-Eun Lee, Neal J. Evans II, Yancy L. Shirley, & Ken'ichi Tatematsu.* 583, 789 (2003)

The Universality of Turbulence in the Molecular Interstellar Medium and Its Exploitation as a Distance Estimator. *Christopher M. Brunt.* 584, 293 (2003)

Hydrogenation and Charge States of the Polycyclic Aromatic Hydrocarbons in Diffuse Clouds. II. Results. *Valery Le Page, Theodore P. Snow, & Veronica M. Bierbaum.* 584, 316 (2003)

Molecular Outflow Search in the ρ Ophiuchi A and B2 Regions. *Takeshi Kamazaki, Masao Saito, Naomi Hirano, Tomofuni Umemoto, & Ryohei Kawabe.* 584, 357 (2003)

OH (1720 MHz) Masers and Mixed-Morphology Supernova Remnants. *F. Yusef-Zadeh, M. Wardle, J. Rho, & M. Sakano.* 585, 319 (2003)

A Survey of *Far Ultraviolet Spectroscopic Explorer* and *Hubble Space Telescope* Sight Lines through High-Velocity Cloud Complex C. *Joseph A. Collins, J. Michael Shull, & Mark L. Giroux.* 585, 336 (2003)

Chemical Evolution in Protostellar Envelopes: Cocoon Chemistry. *S. D. Rodgers & S. B. Charnley.* 585, 355 (2003)

Fitting Together the H I Absorption and Emission in the Southern Galactic Plane Survey. *John M. Dickey, N. M. McClure-Griffiths, B. M. Gaensler, & A. J. Green.* 585, 801 (2003)

H I Narrow Self-Absorption in Dark Clouds. *D. Li & P. F. Goldsmith.* 585, 823 (2003)

The Formation of Massive Stars from Turbulent Cores. *Christopher F. McKee & Jonathan C. Tan.* 585, 850 (2003)

A Holistic Scenario of Turbulent Molecular Cloud Evolution and Control of the Star Formation Efficiency: First Tests. *E. Vázquez-Semadeni, J. Ballesteros-Paredes, & R. S. Klessen.* 585, L131 (2003)

A *Far Ultraviolet Spectroscopic Explorer* Survey of Molecular Hydrogen in Intermediate-Velocity Clouds in the Milky Way Halo. *Philipp Richter, Bart P. Wakker, Blair D. Savage, & Kenneth R. Sembach.* 586, 230 (2003)

The Dynamical State of Barnard 68: A Thermally Supported, Pulsating Dark Cloud. *Charles J. Lada, Edwin A. Bergin, João F. Alves, & Tracy L. Huard.* 586, 286 (2003)

Chandra Detection of Local O II Heα Absorption along the Sight Line toward 3C 273. *Taotao Fang, Kenneth R. Sembach, & Claude R. Canizares.* 586, L49 (2003)

Tracing the Mass during Low-Mass Star Formation. IV. Observations and Modeling of the Submillimeter Continuum Emission from Class I Protostars. *Chadwick H. Young, Yancy L. Shirley, Neal J. Evans II, & Jonathan M. C. Rawlings.* 145, 111 (2003)

CH, CO, and $E(B-V)$ as Molecular Gas Tracers in a Translucent Cloud. *Loris Magnani, Raymond J. Chastain, Hyekyung Clarisse Kim, Dap Hartmann, Anthony T. Truong, & Patrick Thaddeus.* 586, 1111 (2003)

Interactions between a Bright Young Stellar Object and the *Micourse Space Experiment* Infrared-Dark Cloud G79.3+0.3: An Early Stage of Triggered Star Formation? *R. O. Redman, P. A. Feldman, F. Wyrowski, S. Côté, S. J. Carey, & M. P. Egan.* 586, 1127 (2003)

Massive Quiescent Cores in Orion. I. Temperature Structure. *D. Li, P. F. Goldsmith, & K. Menten.* 587, 262 (2003)

Neutral Atomic Phases of the Interstellar Medium in the Galaxy. *Mark G. Wolfire, Christopher F. McKee, David Hollenbach, & A. G. G. M. Tielens.* 587, 278 (2003)

Kinematical Structure of the Local Interstellar Medium: The Galactic Anticenter Hemisphere. *Ricardo Génova & John E. Beckman.* 145, 355 (2003)

A Sensitive Very Large Array Search for Small-Scale Glycine Emission toward OMC-1. *J. M. Hollis, J. A. Pedelty, L. E. Snyder, P. R. Jewell, F. J. Lovas, Patrick Palmer, & S.-Y. Liu.* 588, 353 (2003)

The G11.11−0.12 Infrared-dark Cloud: Anomalous Dust and a Nonmagnetic Isothermal Model. *Doug Johnstone, Jason D. Fiege, R. O. Redman, P. A. Feldman, & Sean J. Carey.* 588, L37 (2003)

The Distance to the Supernova Remnant CTB 87 and the Radial Velocity of the Perseus Arm toward $l = 75°$, Derived from H I and CO Observations. *Roland Kothes, Wolfgang Reich, Tyler Foster, & Do-Young Byun.* 588, 852 (2003)

A Coupled Dynamical and Chemical Model of Starless Cores of Magnetized Molecular Clouds. II. Chemical Differentiation. *V. I. Shematovich, D. S. Wiebe, B. M. Shustov, & Zhi-Yun Li.* 588, 894 (2003)

Are Compact High-Velocity Clouds Extragalactic Objects? *Philip R. Maloney & Mary E. Putman.* 589, 270 (2003)

A Search for Stellar Obscuration Events Due to Dark Clouds. *A. J. Drake & K. H. Cook.* 589, 281 (2003)

Distribution of the C I Emission in the ρ Ophiuchi Dark Cloud. *Kazuhisa Kamegai, Masafumi Ikeda, Hiroyuki Maezawa, Tetsuya Ito, Mitsuhiro Iwata, Takeshi Sakai, Tomoharu Oka, Satoshi Yamamoto, Yutaro Sekimoto, Ken'ichi Tatematsu, Takashi Noguchi, Shuji Saito, Hideo Fujiwara, Hiroyuki Ozeki, Junji Inatani, & Masatoshi Ohishi.* 589, 378 (2003)

Distribution and Kinematics of O VI in the Galactic Halo. *B. D. Savage, K. R. Sembach, B. P. Wakker, P. Richter, M. Meade, E. B. Jenkins, J. M. Shull, H. W. Moos, & G. Sonneborn.* 146, 125 (2003)

Highly Ionized High-Velocity Gas in the Vicinity of the Galaxy. *K. R. Sembach, B. P. Wakker, B. D. Savage, P. Richter, M. Meade, J. M. Shull, E. B. Jenkins, G. Sonneborn, & H. W. Moos.* 146, 165 (2003)

Dense Gas Clouds and the Unidentified EGRET Sources. *Mark Walker, Masaki Mori, & Michiko Ohishi.* 589, 810 (2003)

NGC 7538S—a High-Mass Protostar with a Massive Rotating Disk. *Göran Sandell, Melvyn Wright, & James R. Forster.* 590, L45 (2003)

Submillimeter Wave Astronomy Satellite Mapping Observations of Water Vapor around Sagittarius B2. *David A. Neufeld, Edwin A. Bergin, Gary J. Melnick, & Paul F. Goldsmith.* 590, 882 (2003)

Two Molecular Clouds near M17. *T. L. Wilson, M. M. Hanson, & D. Muders.* 590, 895 (2003)

A Full-Sky Hα Template for Microwave Foreground Prediction. *Douglas P. Finkbeiner.* 146, 407 (2003)

Photoelectric Heating and [C II] Cooling in Translucent Clouds: Results for Cloud Models Based on Simulations of Compressible Magnetohydrodynamic Turbulence. *M. Juvela, P. Padoan, & R. Jimenez.* 591, 258 (2003)

High-Velocity Cloud Complex H: A Satellite of the Milky Way in a Retrograde Orbit? *Felix J. Lockman.* 591, L33 (2003)

Enhanced Deuterium Fractionation in Dense Interstellar Cores Resulting from Multiply Deuterated H_3^+. *Helen Roberts, Eric Herbst, & T. J. Millar.* 591, L41 (2003)

[C I] 492 GHz Mapping Observations of the High-Latitude Translucent Cloud MCLD 123.5+24.9. *F. Bensch, U. Leuenhagen, J. Stutzki, & R. Schieder.* 591, 1013 (2003)

Infrared Photometry of Starless Dense Cores. *D. C. Murphy & P. C. Myers.* 591, 1034 (2003)

Variable Na I Absorption toward ρ Leonis: Biased Neutral Formation in the Diffuse Interstellar Medium? *J. T. Lauroesch & David M. Meyer.* 591, L123 (2003)

Neutral Hydrogen Associated with NGC 7129. *H. E. Matthews, C. R. Purton, R. S. Roger, P. E. Dewdney, & G. F. Mitchell.* 592, 176 (2003)

Dynamic Cores in Hydrostatic Disguise. *Javier Ballesteros-Paredes, Ralf S. Klessen, & Enrique Vázquez-Semadeni.* 592, 188 (2003)

Analysis of Clumps in Molecular Cloud Models: Mass Spectrum, Shapes, Alignment, and Rotation. *Charles F. Gammie, Yen-Ting Lin, James M. Stone, & Eve C. Ostriker.* 592, 203 (2003)

High-Latitude Molecular Clouds in an H I Filament toward the MBM 53, 54, and 55 Complex: Existence of an H_2 Cloud with Low CO Intensity. *H. Yamamoto, T. Onishi, A. Mizuno, & Y. Fukui.* 592, 217 (2003)

Detection of OH Absorption against PSR B1849+00. *Snežana Stanimirović, Joel M. Weisberg, John M. Dickey, Anton de la Fuente, Kathryn Devine, Abigail Hedden, & Stuart B. Anderson.* 592, 953 (2003)

The Formation of Stellar Clusters in Turbulent Molecular Clouds: Effects of the Equation of State. *Yuexing Li, Ralf S. Klessen, & Mordecai-Mark Mac Low.* 592, 975 (2003)

Mechanisms for the Origin of Turbulence in Non–Star-forming Clouds: The Translucent Cloud MBM 40. *Steven N. Shore, Loris Magnani, T. N. LaRosa, & Meredith N. McCarthy.* 593, 413 (2003)

Gravitational Collapse of Filamentary Magnetized Molecular Clouds. *David A. Tilley & Ralph E. Pudritz.* 593, 426 (2003)

Blowout from IC 1396N: The Emergence of Herbig-Haro Flows from a Cloud Core. *Bo Reipurth, Tina Armond, Alex Raga, & John Bally.* 593, L47 (2003)

Local Interstellar Matter: The Apex Cloud. *Priscilla C. Frisch.* 593, 868 (2003)

Molecular Evolution in Collapsing Prestellar Cores. II. The Effect of Grain-Surface Reactions. *Yuri Aikawa, Nagayoshi Ohashi, & Eric Herbst.* 593, 906 (2003)

First Detection of Doubly Deuterated Hydrogen Sulfide. *C. Vastel, T. G. Phillips, C. Ceccarelli, & J. Pearson.* 593, L97 (2003)

Indications for Grain Growth and Mass Decrease in Cold Dust Disks around Classical T Tauri Stars in the MBM 12 Young Association. *Michiel R. Hogerheijde, Doug Johnstone, Isamu Matsuyama, Ray Jayawardhana, & James Muzerolle.* 593, L101 (2003)

Small-Scale Structure of Low-Density Gas in a Dark Cloud Envelope: Kinematic Evidence for Phase Transition? *Seiichi Sakamoto & Kazuyoshi Sunada.* 594, 340 (2003)

Binary and Multiple Star Formation in Magnetic Clouds: Bar Growth and Fragmentation. *Fumitaka Nakamura & Zhi-Yun Li.* 594, 363 (2003)

Mapping Observations of DNC and $HN^{13}C$ in Dark Cloud Cores. *Tomoya Hirota, Masafumi Ikeda, & Satoshi Yamamoto.* 594, 859 (2003)

Intrinsic, Observed, and Retrieved Properties of Interstellar Turbulence. *Christopher M. Brunt, Mark H. Heyer, Enrique Vázquez-Semadeni, & Bárbara Pichardo.* 595, 824 (2003)

Nonlinear Hydromagnetic Wave Support of a Stratified Molecular Cloud. *Takahiro Kudoh & Shantanu Basu.* 595, 842 (2003)

Far Ultraviolet Spectroscopic Explorer Survey of the Local Interstellar Medium within 200 Parsecs. *N. Lehner, E. B. Jenkins, C. Gry, H. W. Moos, P. Chayer, & S. Lacour.* 595, 858 (2003)

Fragmentation of a Molecular Cloud Core versus Fragmentation of the Massive Protoplanetary Disk in the Main Accretion Phase. *Tomoaki Matsumoto & Tomoyuki Hanawa.* 595, 913 (2003)

Abundances and Physical Conditions in the Interstellar Gas toward HD 185418. *Paule Sonnentrucker, Scott D. Friedman, Daniel E. Welty, Donald G. York, & Theodore P. Snow.* 596, 350 (2003)

Molecular Counterparts of Ultracompact H II Regions with Extended Envelopes. *Kee-Tae Kim & Bon-Chul Koo.* 596, 362 (2003)

Potential Variations in the Interstellar N I Abundance. *David C. Knauth, B-G Andersson, Stephan R. McCandliss, & H. Warren Moos.* 596, L51 (2003)

Kinematics of Ultracompact H II Regions Revealed: High Spatial and Spectral Resolution Mapping of the 12.8 Micron [Ne II] Line in Monoceros R2. *D. T. Jaffe, Q. Zhu, J. H. Lacy, & M. Richter.* 596, 1053 (2003)

Kinematics of the SGR B2 (N-LMH) Molecular Core. *Jan M. Hollis, J. A. Pedelty, D. A. Boboltz, S.-Y. Liu, L. E. Snyder, Patrick Palmer, F. J. Lovas, & P. R. Jewell.* 596, L235 (2003)

Laboratory Submillimeter-Wave Detection of D_2H^+: A New Probe into Multiple Deuteration? *T. Hirano & T. Amano.* 597, L85 (2003)

Dusty Molecular Cloud Collapse in the Presence of Alfvén Waves. *D. Falceta-Goncalves, M. C. de Juli, & V. Jatenco-Pereira.* 597, 970 (2003)

The Origin of the Galactic Center Nonthermal Radio Filaments: Young Stellar Clusters. *F. Yusef-Zadeh.* 598, 325 (2003)

Does Tiny-Scale Atomic Structure Exist in the Interstellar Medium? *S. Stanimirović, J. M. Weisberg, A. Hedden, K. E. Devine, & J. T. Green.* 598, L23 (2003)

Carbon Isotope Ratio in $^{12}CO/^{13}CO$ toward Local Molecular Clouds with Near-Infrared High-Resolution Spectroscopy of Vibrational Transition Bands. *Miwa Goto, Tomonori Usuda, Naruhisa Takato, Masa Hayashi, Seiichi Sakamoto, W. Gaessler, Yutaka Hayano, Masanori Iye, Yukiko Kamata, Tomio Kanzawa, Naoto Kobayashi, Yosuke Minowa, Ko Nedachi, Shin Oya, T.-S. Pyo, D. Saint-Jacques, Hiroshi Suto, Hideki Takami, Hiroshi Terada, & George F. Mitchell.* 598, 1038 (2003)

A Neutral Hydrogen Self-Absorption Cloud in the Southern Galactic Plane Survey. *D. W. Kavars, J. M. Dickey, N. M. McClure-Griffiths, B. M. Gaensler, & A. J. Green.* 598, 1048 (2003)

A Ring-Shaped Embedded Young Stellar (Proto)Cluster. *M. S. Nanda Kumar, D. K. Ojha, & C. J. Davis.* 598, 1107 (2003)

Giant Molecular Clouds in M33. II. High-Resolution Observations. *E. Rosolowsky, G. Engargiola, R. Plambeck, & L. Blitz.* 599, 257 (2003)

The Deuterium-to-Oxygen Ratio in the Interstellar Medium. *Guillaume Hébrard & H. Warren Moos.* 599, 296 (2003)

Collapse of Magnetized Singular Isothermal Toroids. I. The Nonrotating Case. *Anthony Allen, Frank H. Shu, & Zhi-Yun Li.* 599, 351 (2003)

Collapse of Magnetized Singular Isothermal Toroids. II. Rotation and Magnetic Braking. *Anthony Allen, Zhi-Yun Li, & Frank H. Shu.* 599, 363 (2003)

Giant Molecular Clouds in M33. I. BIMA All-Disk Survey. *G. Engargiola, R. L. Plambeck, E. Rosolowsky, & L. Blitz.* 149, 343 (2003)

A CS $J = 5 \rightarrow 4$ Mapping Survey Toward High-Mass Star-Forming Cores Associated with Water Masers. *Yancy L. Shirley, Neal J. Evans II, Kaisa E. Young, Claudia Knez, & Daniel T. Jaffe.* 149, 375 (2003)

ISM: COSMIC RAYS

The Myriad-Source Model of Cosmic Rays. I. Steady State Age and Path Length Distributions. *J. C. Higdon & R. E. Lingenfelter.* 582, 330 (2003)

Voyager 1 and *2* Observations of Magnetic Fields and Associated Cosmic-Ray Variations from 2000 through 2001: 60–87 AU. *L. F. Burlaga, N. F. Ness, F. B. McDonald, J. D. Richardson, & C. Wang.* 582, 540 (2003)

Side Group Addition to the Polycyclic Aromatic Hydrocarbon Coronene by Proton Irradiation in Cosmic Ice Analogs. *Max P. Bernstein, Marla H. Moore, Jamie E. Elsila, Scott A. Sandford, Louis J. Allamandola, & Richard N. Zare.* 582, L25 (2003)

Updated Formula for Calculating Partial Cross Sections for Nuclear Reactions of Nuclei with $Z \leq 28$ and $E > 150$ MeV per Nucleon in Hydrogen Targets. *W. R. Webber, A. Soutoul, J. C. Kish, & J. M. Rockstroh.* 144, 153 (2003)

Toward an ab Initio Theory of the Solar Modulation of Cosmic Rays. *S. Parhi, J. W. Bieber, W. H. Matthaeus, & R. A. Burger.* 585, 502 (2003)

Ozone Depletion from Nearby Supernovae. *Neil Gehrels, Claude M. Laird, Charles H. Jackman, John K. Cannizzo, Barbara J. Mattson, & Wan Chen.* 585, 1169 (2003)

Estimating Star Formation Rates from Infrared and Radio Luminosities: The Origin of the Radio-Infrared Correlation. *Eric F. Bell.* 586, 794 (2003)

Challenging Cosmic-Ray Propagation with Antiprotons: Evidence for a "Fresh" Nuclei Component? *Igor V. Moskalenko, Andrew W. Strong, Stepan G. Mashnik, & Jonathan F. Ormes.* 586, 1050 (2003)

Small-Scale Clustering in Isotropic Arrival Distribution of Ultra–High-Energy Cosmic Rays and Implications for Their Source Candidates. *Hiroyuki Yoshiguchi, Shigehiro Nagataki, Sin-ya Tsubaki, & Katsuhiko Sato.* 586, 1211 (2003)

A Search for Correlations of TeV Gamma Rays with Ultra–High-Energy Cosmic Rays. *C. W. Akerlof, S. Biller, P. Boyle, J. Buckley, D. A. Carter-Lewis, M. Catanese, M. F. Cawley, V. Connaughton, D. J. Fegan, J. Finley, J. Gaidos, A. M. Hillas, F. Krennrich, R. C. Lamb, R. Lessard, J. McEnery, G. Mohanty, N. A. Porter, J. Quinn, A. Rodgers, H. J. Rose, F. Samuelson, M. S. Schubnell, G. Sembroski, R. Srinivasan, T. C. Weekes, & J. Zweerink.* 586, 1232 (2003)

Cosmic-Ray History and Its Implications for Galactic Magnetic Fields. *Ellen G. Zweibel.* 587, 625 (2003)

The Effects of Ion Irradiation on the Evolution of the Carrier of the 3.4 Micron Interstellar Absoprtion Band. *V. Mennella, G. A. Baratta, A. Esposito, G. Ferini, & Y. J. Pendleton.* 587, 727 (2003)

An Explanation for Large Enhancements of Nitrogen Relative to Carbon and Oxygen in Solar ^{3}He-rich Events. *T. X. Zhang & J. X. Wang.* 588, L57 (2003)

Testing Two Nuclear Physics Approximations Used in the Standard Leaky-Box Model for the Spallogenic Production of LiBeB. *J. P. Kneller, J. R. Phillips, & T. P. Walker.* 589, 217 (2003)

The Effect of Cosmic-Ray Diffusion on the Parker Instability. *Dongsu Ryu, Jongsoo Kim, Seung Soo Hong, & T. W. Jones.* 589, 338 (2003)

Dense Gas Clouds and the Unidentified EGRET Sources. *Mark Walker, Masaki Mori, & Michiko Ohishi.* 589, 810 (2003)

Magnetars in the Metagalaxy: An Origin for Ultra–High-Energy Cosmic Rays in the Nearby Universe. *Jonathan Arons.* 589, 871 (2003)

Particle Transport in Tangled Magnetic Fields and Fermi Acceleration at Relativistic Shocks. *Martin Lemoine & Guy Pelletier.* 589, L73 (2003)

The Superbubble Origin of ^{22}Ne in Cosmic Rays. *J. C. Higdon & R. E. Lingenfelter.* 590, 822 (2003)

Nonthermal Emission from the Arches Cluster (G0.121+0.017) and the Origin of γ-Ray Emission from 3EG J1746−2851. *F. Yusef-Zadeh, M. Nord, M. Wardle, C. Law, C. Lang, & T. J. W. Lazio.* 590, L103 (2003)

Actinides in the Source of Cosmic Rays and the Present Interstellar Medium. *R. E. Lingenfelter, J. C. Higdon, K.-L. Kratz, & B. Pfeiffer.* 591, 228 (2003)

Cosmic-Ray Spectra at Spherical Termination Shocks. *V. Florinski & J. R. Jokipii.* 591, 454 (2003)

On Particle Acceleration around Shocks. I. *Mario Vietri.* 591, 954 (2003)

Arrival Distribution of Ultra–High-Energy Cosmic Rays: Prospects for the Future. *Hiroyuki Yoshiguchi, Shigehiro Nagataki, & Katsuhiko Sato.* 592, 311 (2003)

On the Generation of Ultra–High-Energy Cosmic Rays in Gamma-Ray Bursts: A Reappraisal. *Mario Vietri, Daniel De Marco, & Dafne Guetta.* 592, 378 (2003)

Coronal Mass Ejections, the Tail of the Solar Wind Magnetic Field Distribution, and 11 Year Cosmic-Ray Modulation at 1 AU. *E. W. Cliver, A. G. Ling, & I. G. Richardson.* 592, 574 (2003)

RXTE, *ROSAT*, and *ASCA* Observations of G347.3−0.5 (RX J1713.7−3946): Probing Cosmic-Ray Acceleration by a Galactic Shell-Type Supernova Remnant. *Thomas G. Pannuti, Glenn E. Allen, John C. Houck, & Steven J. Sturner.* 593, 377 (2003)

Loss Cone Precursors to Forbush Decreases and Advance Warning of Space Weather Effects. *K. Leerungnavarat, D. Ruffolo, & J. W. Bieber.* 593, 587 (2003)

Solar Wind Effects on the Transport of 3–10 MeV Cosmic-Ray Electrons from Solar Minimum to Solar Maximum. *S. E. S. Ferreira, M. S. Potgieter, D. M. Moeketsi, B. Heber, & H. Fichtner.* 594, 552 (2003)

Diffusive-Compression Acceleration and Turbulent Diffusion of Cosmic Rays in Quasi-periodic and Turbulent Flows. *G. M. Webb, C. M. Ko, G. P. Zank, & J. R. Jokipii.* 595, 195 (2003)

On the Cross-Correlation between the Arrival Direction of Ultra–High-Energy Cosmic Rays, BL Lacertae Objects, and EGRET Detections: A New Way to Identify EGRET Sources? *Diego F. Torres, Stephen Reucroft, Olaf Reimer, & Luis A. Anchordoqui.* 595, L13 (2003)

A New Method for Calculating Arrival Distribution of Ultra–High-Energy Cosmic Rays above 10^{19} eV with Modifications by the Galactic Magnetic Field. *Hiroyuki Yoshiguchi, Shigehiro Nagataki, & Katsuhiko Sato.* 596, 1044 (2003)

Detection of the High-Energy Cosmic Rays from the Monogem Ring. *A. Chilingarian, H. Martirosia, & G. Gharagyozyan.* 597, L129 (2003)

ISM: DUST, EXTINCTION

The Canada–United Kingdom Deep Submillimeter Survey. V. The Submillimeter Properties of Lyman Break Galaxies. *T. M. Webb, S. Eales, S. Foucaud, S. J. Lilly, H. McCracken, K. Adelberger, C. Steidel, A. Shapley, D. L. Clements, L. Dunne, O. Le Fèvre, M. Brodwin, & W. Gear.* 582, 6 (2003)

From Massive Protostars to a Giant H II Region: Submillimeter Imaging of the Galactic Ministarburst W43. *F. Motte, P. Schilke, & D. C. Lis.* 582, 277 (2003)

Elemental Abundances and Mass Densities of Dust and Gas in the Local Interstellar Cloud. *Hiroshi Kimura, Ingrid Mann, & Elmar K. Jessberger.* 582, 846 (2003)

A Scattered Light Echo around SN 1993J in M81. *Ji-Feng Liu, Joel N. Bregman, & Patrick Seitzer.* 582, 919 (2003)

Composition, Structure, and Size Distribution in the Local Interstellar Cloud. *Hiroshi Kimura, Ingrid Mann, & Elmar K. Jessberger.* 583, 314 (2003)

Luminescence from Vacuum-Ultraviolet–irradiated Cosmic Ice Analogs and Residues. *Murthy S. Gudipati, Jason P. Dworkin, Xavier D.F. Chillier, & Louis J. Allamandola.* 583, 514 (2003)

Internal Dust Correction Factors for Star Formation Rates Derived for Dusty H II Regions and Starburst Galaxies. *M. A. Dopita, B. A. Groves, R. S. Sutherland, & L. J. Kewley.* 583, 727 (2003)

The Gravitational Lens B1608+656. I. *V*-, *I*-, and *H*-Band *Hubble Space Telescope* Imaging. *G. Surpi & R. D. Blandford.* 584, 100 (2003)

K3-50A: An Ultracompact H II Region Ionized by a Massive Stellar Cluster. *Yoshiko K. Okamoto, Hirokazu Kataza, Takuya Yamashita, Takashi Miyata, Shigeyuki Sako, Shinya Takubo, Mitsuhiko Honda, & Takashi Onaka.* 584, 368 (2003)

Cosmic Needles versus Cosmic Microwave Background Radiation. *Aigen Li.* 584, 593 (2003)

Structure of the Mid-Infrared–emitting Disk around WL 16. *Michael E. Ressler & Mary Barsony.* 584, 832 (2003)

An Empirical Decomposition of Near-Infrared Emission into Galactic and Extragalactic Components. *Richard G. Arendt & Eli Dwek.* 585, 305 (2003)

Heavy-Element Abundances and Dust Depletions in the Host Galaxies of Three Gamma-Ray Bursts. *Sandra Savaglio, S. Michael Fall, & Fabrizio Fiore.* 585, 638 (2003)

Time-dependent Photoionization in a Dusty Medium. II. Evolution of Dust Distributions and Optical Opacities. *Rosalba Perna, Davide Lazzati, & Fabrizio Fiore.* 585, 775 (2003)

Detection of Far-Infrared Features in Star-forming Regions. *Takashi Onaka & Yoko Okada.* 585, 872 (2003)

Explaining the Observed Polarization from Brown Dwarfs by Single Dust Scattering. *Sujan Sengupta.* 585, L155 (2003)

Tracing the Mass during Low-Mass Star Formation. IV. Observations and Modeling of the Submillimeter Continuum Emission from Class I Protostars. *Chadwick H. Young, Yancy L. Shirley, Neal J. Evans II, & Jonathan M. C. Rawlings.* 145, 111 (2003)

Estimating Star Formation Rates from Infrared and Radio Luminosities: The Origin of the Radio-Infrared Correlation. *Eric F. Bell.* 586, 794 (2003)

Interactions between a Bright Young Stellar Object and the *Micourse Space Experiment* Infrared-Dark Cloud G79.3+0.3: An Early Stage of Triggered Star Formation? *R. O. Redman, P. A. Feldman, F. Wyrowski, S. Côté, S. J. Carey, & M. P. Egan.* 586, 1127 (2003)

2-DUST: A Dust Radiative Transfer Code for an Axisymmetric System. *Toshiya Ueta & Margaret Meixner.* 586, 1338 (2003)

The Dust in Lyman Break Galaxies. *Uma P. Vijh, Adolph N. Witt, & Karl D. Gordon.* 587, 533 (2003)

The Effects of Ion Irradiation on the Evolution of the Carrier of the 3.4 Micron Interstellar Absoprtion Band. *V. Mennella, G. A. Baratta, A. Esposito, G. Ferini, & Y. J. Pendleton.* 587, 727 (2003)

Are TiC Grains a Carrier of the 21 Micron Emission Band Observed around Post–Asymptotic Giant Branch Objects? *Takeshi Chigai, Tetsuo Yamamoto, Chihiro Kaito, & Yuki Kimura.* 587, 771 (2003)

Evidence for Grain Growth in the Protostellar Disks of Orion. *R. Y. Shuping, John Bally, Mark Morris, & Henry Throop.* 587, L109 (2003)

Cosmic Star Formation History Assocatied with Quasar Activity: An Approach Using the Black Hole–to–Bulge Mass Correlation. *Y. P. Wang, T. Yamada, & Y. Taniguchi.* 588, 113 (2003)

Infrared Emission of Normal Galaxies from 2.5 to 12 Microns: *Infrared Space Observatory* Spectra, Near-Infrared Continuum, and Mid-Infrared Emission Features. *Nanyao Lu, George Helou, Michael W. Werner, Harriet L. Dinerstein, Daniel A. Dale, Nancy A. Silbermann, Sangeeta Malhotra, Charles A. Beichman, & Thomas H. Jarrett.* 588, 199 (2003)

A Multitransition CO Study of the Antennae Galaxies NGC 4038/9. *Ming Zhu, E. R. Seaquist, & Nario Kuno.* 588, 243 (2003)

A Method for Simultaneous Determination of A_V and R and Applications. *Jorge R. Ducati, Daiana Ribeiro, & Sandro B. Rembold.* 588, 344 (2003)

The G11.11−0.12 Infrared-dark Cloud: Anomalous Dust and a Nonmagnetic Isothermal Model. *Doug Johnstone, Jason D. Fiege, R. O. Redman, P. A. Feldman, & Sean J. Carey.* 588, L37 (2003)

Dust Grain Size Distributions from MRN to MEM. *Geoffrey C. Clayton, Michael J. Wolff, Ulysses J. Sofia, K. D. Gordon, & K. A. Misselt.* 588, 871 (2003)

Magnetic Structure of a Dark Bok Globule. *Jacques P. Vallée, Jane S. Greaves, & Jason D. Fiege.* 588, 910 (2003)

The First Detection of Spatially Resolved Mid-Infrared Scattered Light from a Protoplanetary Disk. *C. McCabe, G. Duchêne, & A. M. Ghez.* 588, L113 (2003)

Dependence of H_2CO and CH_3OH Formation on Temperature and Thickness of H_2O-CO Ice during the Successive Hydrogenation of CO. *Naoki Watanabe, Takahiro Shiraki, & Akira Kouchi.* 588, L121 (2003)

A Search for Stellar Obscuration Events Due to Dark Clouds. *A. J. Drake & K. H. Cook.* 589, 281 (2003)

Radiative Torques on Interstellar Grains. III. Dynamics with Thermal Relaxation. *Joseph C. Weingartner & B. T. Draine.* 589, 289 (2003)

The Pleiades Reflection Nebula. I. Ultraviolet, Optical, and Far-Infrared Imaging Photometry. *Steven J. Gibson & Kenneth H. Nordsieck.* 589, 347 (2003)

The Pleiades Reflection Nebula. II. Simple Model Constraints on Dust Properties and Scattering Geometry. *Steven J. Gibson & Kenneth H. Nordsieck.* 589, 362 (2003)

Spatially Resolved 3 Micron Spectroscopy of IRAS 22272+5435: Formation and Evolution of Aliphatic Hydrocarbon Dust in Proto–Planetary Nebulae. *Miwa Goto, W. Gaessler, Yutaka Hayano, Masanori Iye, Yukiko Kamata, Tomio Kanzawa, Naoto Kobayashi, Yosuke Minowa, D. J. Saint-Jacques, Hideki Takami, Naruhisa Takato, & Hiroshi Terada.* 589, 419 (2003)

Circumnuclear Dust in Nearby Active and Inactive Galaxies. II. Bars, Nuclear Spirals, and the Fueling of Active Galactic Nuclei. *Paul Martini, Michael W. Regan, John S. Mulchaey, & Richard W. Pogge.* 589, 774 (2003)

The Optical Gravitational Lensing Experiment: Is Interstellar Extinction toward the Galactic Center Anomalous? *A. Udalski.* 590, 284 (2003)

Modeling the Infrared Emission from the HR 4796A Disk. *Aigen Li & J. I. Lunine.* 590, 368 (2003)

Zinc Crystal Growth in Microgravity. *B. P. Michael, Joseph A. Nuth III, & Lembit U. Lilleleht.* 590, 579 (2003)

Rapid Cooling of Dusty Gas in Elliptical Galaxies. *William G. Mathews & Fabrizio Brighenti.* 590, L5 (2003)

A *Hubble Space Telescope*/WFPC2 Snapshot Survey of 2MASS-selected Red QSOs. *Andrew R. Marble, Dean C. Hines, Gary D. Schmidt, Paul S. Smith, Jason A. Surace, Lee Armus, Roc M. Cutri, & Brant O. Nelson.* 590, 707 (2003)

Circumnuclear Dust in Nearby Active and Inactive Galaxies. I. Data. *Paul Martini, Michael W. Regan, John S. Mulchaey, & Richard W. Pogge.* 146, 353 (2003)

A Full-Sky Hα Template for Microwave Foreground Prediction. *Douglas P. Finkbeiner.* 146, 407 (2003)

Has the Optical Extragalactic Background Light Been Detected? *K. Mattila.* 591, 119 (2003)

Photoelectric Heating and [C II] Cooling in Translucent Clouds: Results for Cloud Models Based on Simulations of Compressible Magnetohydrodynamic Turbulence. *M. Juvela, P. Padoan, & R. Jimenez.* 591, 258 (2003)

A Test Case for the Organic Refractory Model of Interstellar Dust. *S. S. Shenoy, D. C. B. Whittet, J. E. Chiar, A. J. Adamson, W. G. Roberge, & G. E. Hassel.* 591, 962 (2003)

Oxygen Gas-Phase Abundance Revisited. *M. K. André, C. M. Oliveira, J. C. Howk, R. Ferlet, J.-M. Désert, G. Hébrard, S. Lacour, A. Lecavelier des Étangs, A. Vidal-Madjar, & H. W. Moos.* 591, 1000 (2003)

Infrared Photometry of Starless Dense Cores. *D. C. Murphy & P. C. Myers.* 591, 1034 (2003)

Two-dimensional Radiative Transfer in Protostellar Envelopes. I. Effects of Geometry on Class I Sources. *Barbara A. Whitney, Kenneth Wood, J. E. Bjorkman, & Michael J. Wolff.* 591, 1049 (2003)

A Fluorescent Aerogel for Capture and Identification of Interplanetary and Interstellar Dust. *Gerardo Domínguez, Andrew J. Westphal, Mark L. F. Phillips, & Steven M. Jones.* 592, 631 (2003)

Grain Acceleration by Magnetohydrodynamic Turbulence: Gyroresonance Mechanism. *Huirong Yan & A. Lazarian.* 592, L33 (2003)

Galactic Foreground Constraints from the Python V Cosmic Microwave Background Anisotropy Data. *Pia Mukherjee, Kim Coble, Mark Dragovan, Ken Ganga, John Kovac, Bharat Ratra, & Tarun Souradeep.* 592, 692 (2003)

The Role of Polycyclic Aromatic Hydrocarbons in Ultraviolet Extinction. I. Probing Small Molecular Polycyclic Aromatic Hydrocarbons. *Geoffrey C. Clayton, Karl D. Gordon, F. Salama, L. J. Allamandola, Peter G. Martin, T. P. Snow, D. C. B. Whittet, A. N. Witt, & Michael J. Wolff.* 592, 947 (2003)

On the Detection of the Signature of Silicon Nanoparticle Dust Grains in Coronal Holes. *Shadia Rifai Habbal, Martina Belz Arndt, Munir H. Nayfeh, Jean Arnaud, Judd Johnson, Steve Hegwer, Richard Woo, Alexandru Ene, & Feras Habbal.* 592, L87 (2003)

Modeling the Transport of Polarized Radiation Due to Scattering in Spherical Dust Shells. *David A. Joiner & Chun Ming Leung.* 593, 402 (2003)

Isotopic Compositions of Strontium, Zirconium, Molybdenum, and Barium in Single Presolar SiC Grains and Asymptotic Giant Branch Stars. *Maria Lugaro, Andrew M. Davis, Roberto Gallino, Michael J. Pellin, Oscar Straniero, & Franz Käppeler.* 593, 486 (2003)

The Complete *Far Ultraviolet Spectroscopic Explorer* Spectrum of the Small Magellanic Cloud Star Sk 108. *Christoforos Mallouris.* 147, 265 (2003)

A Quantitative Comparison of Small Magellanic Cloud, Large Magellanic Cloud, and Milky Way Ultraviolet to Near-Infrared Extinction Curves. *Karl D. Gordon, Geoffrey C. Clayton, K. A. Misselt, Arlo U. Landolt, & Michael J. Wolff.* 594, 279 (2003)

Hubble Space Telescope Paα and 1.9 Micron Imaging of Sagittarius A West. *N. Z. Scoville, S. R. Stolovy, M. Rieke, M. Christopher, & F. Yusef-Zadeh.* 594, 294 (2003)

Supernova Reverse Shocks: SiC Growth and Isotopic Composition. *Ethan A.-N. Deneault, Donald D. Clayton, & Alexander Heger.* 594, 312 (2003)

The Scattered X-Ray Halo around Nova Cygni 1992: Testing a Model for Interstellar Dust. *B. T. Draine & Jonathan C. Tan.* 594, 347 (2003)

Guilt by Association: The 13 Micron Dust Emission Feature and Its Correlation to Other Gas and Dust Features. *G. C. Sloan, Kathleen E. Kraemer, J. H. Goebel, & Stephan D. Price.* 594, 482 (2003)

A New Method to Resolve X-Ray Halos around Point Sources with *Chandra* Data and Its Application to Cygnus X-1. *Yangsen Yao, Shuang Nan Zhang, Xiaoling Zhang, & Yuxin Feng.* 594, L43 (2003)

The Chemical Composition and Gas-to-Dust Mass Ratio of Nearby Interstellar Matter. *Priscilla C. Frisch & Jonathan D. Slavin.* 594, 844 (2003)

Locally Aromatic Polycyclic Hydrocarbons as Potential Carriers of Infrared Emission Features. *Simon Petrie, Robert Stranger, & Walter W. Duley.* 594, 869 (2003)

Modeling the Infrared Emission from the HD 141569A Disk. *Aigen Li & J. I. Lunine.* 594, 987 (2003)

Interactions of Dust Grains with Coronal Mass Ejections and Solar Cycle Variations of the F-Coronal Brightness. *B. R. Ragot & S. W. Kahler.* 594, 1049 (2003)

Irregular Particles in Comet C/1995 O1 Hale-Bopp Inferred from Its Mid-Infrared Spectrum. *F. Moreno, O. Muñoz, R. Vilaplana, & A. Molina.* 595, 522 (2003)

Experimental Study of Light Scattering by Large Dust Aggregates Consisting of Micron-Sized SiO_2 Monospheres. *Gerhard Wurm, Helena Relke, & Johann Dorschner.* 595, 891 (2003)

The Spectrum of Integrated Millimeter Flux of the Magellanic Clouds and 30 Doradus from TopHat and DIRBE Data. *J. E. Aguirre, J. J. Bezaire, E. S. Cheng, D. A. Cottingham, S. S. Cordone, T. M. Crawford, D. J. Fixsen, L. Knox, S. S. Meyer, H. U. Norgaard-Nielsen, R. F. Silverberg, P. Timbie, & G. W. Wilson.* 596, 273 (2003)

Supernova Remnant Candidates in the 30 Doradus Nebula. *J. S. Lazendic, J. R. Dickel, & P. A. Jones.* 596, 287 (2003)

Measurement of the Kinetic Energy of Hydrogen Molecules Desorbing from Amorphous Water Ice. *J. E. Roser, S. Swords, G. Vidali, G. Manicò, & V. Pirronello.* 596, L55 (2003)

Facile Generation and Storage of Polycyclic Aromatic Hydrocarbon Ions in Astrophysical Ices. *Murthy S. Gudipati & Louis J. Allamandola.* 596, L195 (2003)

Cold Dust in Kepler's Supernova Remnant. *H. L. Morgan, L. Dunne, S. A. Eales, R. J. Ivison, & M. G. Edmunds.* 597, L33 (2003)

Mass and Dust in the Disk of a Spiral Lens Galaxy. *Joshua N. Winn, Patrick B. Hall, & Paul L. Schechter.* 597, 672 (2003)

Very High Column Density and Small Reddening toward GRB 020124 at $z = 3.20$. *J. Hjorth, P. Møller, J. Gorosabel, J. P. U. Fynbo, S. Toft, A. O. Jaunsen, A. A. Kaas, T. Pursimo, K. Torii, T. Kato, H. Yamaoka, A. Yoshida, B. Thomsen, M. I. Anderson, I. Burud, J. M. Castro Ceron, A. J. Castro-Tirado, A. S. Fruchter, L. Kaper, C. Kouveliotou, N. Masetti, E. Palazzi, H. Pedersen, E. Pian, J. Rhoads, E. Rol, N. R. Tanvir, P. M. Vreeswijk, R. A. M. J. Wijers, & E. P. J. van den Heuvel.* 597, 699 (2003)

How Many Active Galaxies and QSOs Will Future Space Missions Detect? *Paola Andreani, Luigi Spinoglio, & Matthew A. Malkan.* 597, 759 (2003)

Dusty Molecular Cloud Collapse in the Presence of Alfvén Waves. *D. Falceta-Goncalves, M. C. de Juli, & V. Jatenco-Pereira.* 597, 970 (2003)

Optical Polarization Observations of NGC 6231: Evidence for a Past Supernova Fingerprint. *Carlos Feinstein, Ruben Martinez, M. Marcela Vergne, Gustavo Baume, & Ruben Vazquez.* 598, 349 (2003)

Small Magellanic Cloud–Type Interstellar Dust in the Milky Way. *Lynne A. Valencic, Geoffrey C. Clayton, Karl Gordon, & Tracy L. Smith.* 598, 369 (2003)

Modeling the Infrared Emission from the ϵ Eridani Disk. *Aigen Li, J. I. Lunine, & G. J. Bendo.* 598, L51 (2003)

Dust in the Early Universe: Dust Formation in the Ejecta of Population III Supernovae. *Takaya Nozawa, Takashi Kozasa, Hideyuki Umeda, Keiichi Maeda, & Ken'ichi Nomoto.* 598, 785 (2003)

Hubble Space Telescope Observations of Three Very Young Star Clusters in the Small Magellanic Cloud. *Letizia Stanghellini, Eva Villaver, Richard A. Shaw, & Max Mutchler.* 598, 1000 (2003)

A New Distance Technique for Galactic Plane Objects. *T. Foster & D. Routledge.* 598, 1005 (2003)

Scattering by Interstellar Dust Grains. I. Optical and Ultraviolet. *B. T. Draine.* 598, 1017 (2003)

Scattering by Interstellar Dust Grains. II. X-Rays. *B. T. Draine.* 598, 1026 (2003)

Two-dimensional Radiative Transfer in Protostellar Envelopes. II. An Evolutionary Sequence. *Barbara A. Whitney, Kenneth Wood, J. E. Bjorkman, & Martin Cohen.* 598, 1079 (2003)

Envelope Structure of Starless Core L694-2 Derived from a Near-Infrared Extinction Map. *Daniel W. A. Harvey, David J. Wilner, Charles J. Lada, Philip C. Myers, & Joao F. Alves.* 598, 1112 (2003)

Spatial Separation of the 3.29 Micron Emission Feature and Associated 2 Micron Continuum in NGC 7023. *Jin H. An & K. Sellgren.* 599, 311 (2003)

Hot Dust in Radio-loud Active Galactic Nuclei. *Wolfram Freudling, Ralf Siebenmorgen, & Martin Haas.* 599, L13 (2003)

Starburst Galaxies: Why the Calzetti Dust Extinction Law? *Jörg Fischera, Michael A. Dopita, & Ralph S. Sutherland.* 599, L21 (2003)

On Titanium Carbide Nanoparticles as the Origin of the 21 Micron Emission Feature in Post–Asymptotic Giant Branch Stars. *Aigen Li.* 599, L45 (2003)

Magnetic Fields in Cool Clouds within the Central 50 Parsecs of the Galaxy. *David T. Chuss, Jacqueline A. Davidson, Jessie L. Dotson, C. Darren Dowell, Roger H. Hildebrand, Giles Novak, & John E. Vaillancourt.* 599, 1116 (2003)

The Compact H II Region S88B: Excitation and Extinction. *Jennifer A. Goetz, Robert Gutermuth, Judith L. Pipher, William J. Forrest, & Eric M. Howard.* 599, 1173 (2003)

A CS $J = 5 \rightarrow 4$ Mapping Survey Toward High-Mass Star-Forming Cores Associated with Water Masers. *Yancy L. Shirley, Neal J. Evans II, Kaisa E. Young, Claudia Knez, & Daniel T. Jaffe.* 149, 375 (2003)

ISM: EVOLUTION

Water Maser Survey toward Low-Mass Young Stellar Objects in the Northern Sky with the Nobeyama 45 Meter Telescope and the Very Large Array. *Ray S. Furuya, Yoshimi Kitamura, Alwyn Wooten, Mark J. Claussen, & Ryohei Kawabe.* 144, 71 (2003)

Time Dependence of the Ultraviolet Radiation Field in the Local Interstellar Medium. *Antonio Parravano, David J. Hollenbach, & Christopher F. McKee.* 584, 797 (2003)

Interstellar Deuterium, Nitrogen, and Oxygen Abundances toward GD 246, WD 2331−475, HZ 21, and Lanning 23: Results from the *FUSE* Mission. *Cristina M. Oliveira, Guillaume Hébrard, J. Christopher Howk, Jeffrey W. Kruk, Pierre Chayer, & H. Warren Moos.* 587, 235 (2003)

The Dust in Lyman Break Galaxies. *Uma P. Vijh, Adolph N. Witt, & Karl D. Gordon.* 587, 533 (2003)

The G11.11−0.12 Infrared-dark Cloud: Anomalous Dust and a Nonmagnetic Isothermal Model. *Doug Johnstone, Jason D. Fiege, R. O. Redman, P. A. Feldman, & Sean J. Carey.* 588, L37 (2003)

CO Molecular Gas in Infrared-luminous Galaxies. *Lihong Yao, E. R. Seaquist, Nario Kuno, & Loretta Dunne.* 588, 771 (2003)

Spatially Resolved 3 Micron Spectroscopy of IRAS 22272+5435: Formation and Evolution of Aliphatic Hydrocarbon Dust in Proto–Planetary Nebulae. *Miwa Goto, W. Gaessler, Yutaka Hayano, Masanori Iye, Yukiko Kamata, Tomio Kanzawa, Naoto Kobayashi, Yosuke Minowa, D. J. Saint-Jacques, Hideki Takami, Naruhisa Takato, & Hiroshi Terada.* 589, 419 (2003)

Highly Ionized High-Velocity Gas in the Vicinity of the Galaxy. *K. R. Sembach, B. P. Wakker, B. D. Savage, P. Richter, M. Meade, J. M. Shull, E. B. Jenkins, G. Sonneborn, & H. W. Moos.* 146, 165 (2003)

Three Lynds Bright Nebulae. *J. L. Karr & P. G. Martin.* 595, 880 (2003)

ISM: GENERAL

A 3 Year Long Extreme Scattering Event in the Direction of the Millisecond Pulsar J1643−1224. *V. Maitia, J.-F. Lestrade, & I. Cognard.* 582, 972 (2003)

Chandra Spectra of the Soft X-Ray Diffuse Background. *M. Markevitch, M. W. Bautz, B. Biller, Y. Butt, R. Edgar, T. Gaetz, G. Garmire, C. E. Grant, P. Green, M. Juda, P. P. Plucinsky, D. Schwartz, R. Smith, A. Vikhlinin, S. Virani, B. J. Wargelin, & S. Wolk.* 583, 70 (2003)

Thermal OH (1667/1665 MHz) Absorption and Nonthermal OH (1720 MHz) Emission toward the W28 Supernova Remnant. *F. Yusef-Zadeh, M. Wardle, & D. A. Roberts.* 583, 267 (2003)

OH (1720 MHz) Masers and Mixed-Morphology Supernova Remnants. *F. Yusef-Zadeh, M. Wardle, J. Rho, & M. Sakano.* 585, 319 (2003)

Far Ultraviolet Spectroscopic Explorer Detection of Galactic O VI Emission in the Halo above the Perseus Arm. *Birgit Otte, W. Van Dyke Dixon, & Ravi Sankrit.* 586, L53 (2003)

Challenging Cosmic-Ray Propagation with Antiprotons: Evidence for a "Fresh" Nuclei Component? *Igor V. Moskalenko, Andrew W. Strong, Stepan G. Mashnik, & Jonathan F. Ormes.* 586, 1050 (2003)

Neutral Atomic Phases of the Interstellar Medium in the Galaxy. *Mark G. Wolfire, Christopher F. McKee, David Hollenbach, & A. G. G. M. Tielens.* 587, 278 (2003)

Kinematical Structure of the Local Interstellar Medium: The Galactic Anticenter Hemisphere. *Ricardo Génova & John E. Beckman.* 145, 355 (2003)

Surprisingly Little O VI Emission Arises in the Local Bubble. *R. L. Shelton.* 589, 261 (2003)

Thermal Conduction in Magnetized Turbulent Gas. *Jungyeon Cho, A. Lazarian, Albert Honein, Bernard Knaepen, Stavros Kassinos, & Parviz Moin.* 589, L77 (2003)

Probing O VI Emission in the Halos of Edge-On Spiral Galaxies. *B. Otte, E. M. Murphy, J. C. Howk, Q. D. Wang, W. R. Oegerle, & K. R. Sembach.* 591, 821 (2003)

Statistics of Velocity from Spectral Data: Modified Velocity Centroids. *A. Lazarian & A. Esquivel.* 592, L37 (2003)

Extrinsic Radio Variability of JVAS/CLASS Gravitational Lenses. *L. V. E. Koopmans, A. Biggs, R. D. Blandford, I. W. A. Browne, N. J. Jackson, S. Mao, P. N. Wilkinson, A. G. de Bruyn, & J. Wambsganss.* 595, 712 (2003)

Ordinary and Viscosity-damped Magnetohydrodynamic Turbulence. *Jungyeon Cho, A. Lazarian, & Ethan T. Vishniac.* 595, 812 (2003)

Photon Orbital Angular Momentum in Astrophysics. *Martin Harwit.* 597, 1266 (2003)

The Origin of the Galactic Center Nonthermal Radio Filaments: Young Stellar Clusters. *F. Yusef-Zadeh.* 598, 325 (2003)

A New Distance Technique for Galactic Plane Objects. *T. Foster & D. Routledge.* 598, 1005 (2003)

The Cosmic Dispersion Measure from Gamma-Ray Burst Afterglows: Probing the Reionization History and the Burst Environment. *Kunihito Ioka.* 598, L79 (2003)

Pulsar Scintillation Arcs. I. Frequency Dependence. *Alex S. Hill, Daniel R. Stinebring, Henry A. Barnor, Daniel E. Berwick, & Aaron B. Webber.* 599, 457 (2003)

Starburst Galaxies: Why the Calzetti Dust Extinction Law? *Jörg Fischera, Michael A. Dopita, & Ralph S. Sutherland.* 599, L21 (2003)

ISM: GLOBULES

Inner Structures of Protostellar Collapse Candidate B335 Derived from Millimeter-Wave Interferometry. *Daniel W. A. Harvey, David J. Wilner, Philip C. Myers, Mario Tafalla, & Diego Mardones.* 583, 809 (2003)

The Dynamical State of Barnard 68: A Thermally Supported, Pulsating Dark Cloud. *Charles J. Lada, Edwin A. Bergin, João F. Alves, & Tracy L. Huard.* 586, 286 (2003)

Numerous Proplyd Candidates in the Harsh Environment of the Carina Nebula. *Nathan Smith, John Bally, & Jon A. Morse.* 587, L105 (2003)

Magnetic Structure of a Dark Bok Globule. *Jacques P. Vallée, Jane S. Greaves, & Jason D. Fiege.* 588, 910 (2003)

Infrared Photometry of Starless Dense Cores. *D. C. Murphy & P. C. Myers.* 591, 1034 (2003)

Disk Properties and Density Structure of the Star-Forming Dense Core B335. *Daniel W. A. Harvey, David J. Wilner, Philip C. Myers, & Mario Tafalla.* 596, 383 (2003)

Inner Structure of Starless Core L694-2 Derived from Millimeter-Wave Interferometry. *Daniel W. A. Harvey, David J. Wilner, Philip C. Myers, & Mario Tafalla.* 597, 424 (2003)

Envelope Structure of Starless Core L694-2 Derived from a Near-Infrared Extinction Map. *Daniel W. A. Harvey, David J. Wilner, Charles J. Lada, Philip C. Myers, & Joao F. Alves.* 598, 1112 (2003)

ISM: H II REGIONS

From Massive Protostars to a Giant H II Region: Submillimeter Imaging of the Galactic Ministarburst W43. *F. Motte, P. Schilke, & D. C. Lis.* 582, 277 (2003)

Resolving the Kinematic Distance Ambiguity toward Galactic H II Regions. *Michal A. Kolpak, James M. Jackson, T. M. Bania, D. P. Clemens, & John M. Dickey.* 582, 756 (2003)

Internal Dust Correction Factors for Star Formation Rates Derived for Dusty H II Regions and Starburst Galaxies. *M. A. Dopita, B. A. Groves, R. S. Sutherland, & L. J. Kewley.* 583, 727 (2003)

A High Spectral Resolution VLBI Study of the 12 GHz Methanol Masers in W3(OH): Their Submilliarcsecond Structure and Clues on Saturation. *L. Moscadelli, K. M. Menten, C. M. Walmsley, & M. J. Reid.* 583, 776 (2003)

K3-50A: An Ultracompact H II Region Ionized by a Massive Stellar Cluster. *Yoshiko K. Okamoto, Hirokazu Kataza, Takuya Yamashita, Takashi Miyata, Shigeyuki Sako, Shinya Takubo, Mitsuhiko Honda, & Takashi Onaka.* 584, 368 (2003)

Emission Lines of Cl II in the Optical Spectra of Gaseous Nebulae. *F. P. Keenan, L. H. Aller, K. M. Exter, S. Hyung, & D. L. Pollacco.* 584, 385 (2003)

The Chemical Composition of the 30 Doradus Nebula Derived from Very Large Telescope Echelle Spectrophotometry. *Antonio Peimbert.* 584, 735 (2003)

Clustered Star Formation in W75 N. *D. S. Shepherd, L. Testi, & D. P. Stark.* 584, 882 (2003)

Radio Polarization from the Galactic Plane in Cygnus. *B. Uyaniker, T. L. Landecker, A. D. Gray, & R. Kothes.* 585, 785 (2003)

An X-Ray Investigation of the NGC 346 Field in the Small Magellanic Cloud. II. The Field Population. *Y. Nazé, J. M. Hartwell, I. R. Stevens, J. Manfroid, S. Marchenko, M. F. Corcoran, A. F. J. Moffat, & G. Skalkowski.* 586, 983 (2003)

Far-Ultraviolet and Hα Spectroscopy of SNR 0057−7226 in the Small Magellanic Cloud H II Region N66. *Charles W. Danforth, Ravi Sankrit, William P. Blair, J. Christopher Howk, & You-Hua Chu.* 586, 1179 (2003)

H I Absorption toward Ultracompact H II Regions: Distances and Galactic Structure. *Vincent L. Fish, Mark J. Reid, David J. Wilner, & Ed Churchwell.* 587, 701 (2003)

Numerous Proplyd Candidates in the Harsh Environment of the Carina Nebula. *Nathan Smith, John Bally, & Jon A. Morse.* 587, L105 (2003)

Spectroscopy of Dwarf Galaxies in the Virgo Cluster. I. Data, Chemical Abundances, and Ionization Structure. *José M. Vílchez & Jorge Iglesias-Páramo.* 145, 225 (2003)

Observations of Water Masers and Radio Continuum Emission in AFGL 2591. *Miguel A. Trinidad, Salvador Curiel, Jorge Cantó, Paola D'Alessio, Luis F. Rodríguez, José M. Torrelles, José F. Gómez, Nimesh Patel, & Paul T. P. Ho.* 589, 386 (2003)

[Fe IV] Emission in Ionized Nebulae. *Monica Rodriguez.* 590, 296 (2003)

Diffuse X-Ray Emission from the Quiescent Superbubble M17, the Omega Nebula. *Bryan C. Dunne, You-Hua Chu, C.-H. Rosie Chen, Justin D. Lowry, Leisa Townsley, Robert A. Gruendl, Martín A. Guerrero, & Margarita Rosado.* 590, 306 (2003)

The Impact of Ionizing Stars on the Diffuse Interstellar Medium: A Swept-Up Shell and Ionized Halo around the W4 Chimney/Superbubble. *S. Terebey, M. Fich, R. Taylor, Y. Cao, & T. Hancock.* 590, 906 (2003)

A Full-Sky Hα Template for Microwave Foreground Prediction. *Douglas P. Finkbeiner.* 146, 407 (2003)

The Composition Gradient in M101 Revisited. II. Electron Temperatures and Implications for the Nebular Abundance Scale. *Robert C. Kennicutt, Jr., Fabio Bresolin, & Donald R. Garnett.* 591, 801 (2003)

Infrared Space Observatory Long-Wavelength Spectrometer Spectroscopy of Star-forming Regions in M33. *S. J. U. Higdon, J. L. Higdon, J. M. van der Hulst, & G. J. Stacey.* 592, 161 (2003)

The Effect of Collisional Enhancement of Balmer Lines on the Determination of the Primordial Helium Abundance. *V. Luridiana, A. Peimbert, M. Peimbert, & M. Cervino.* 592, 846 (2003)

10 MK Gas in M17 and the Rosette Nebula: X-Ray Flows in Galactic H II Regions. *Leisa K. Townsley, Eric D. Feigelson, Thierry Montmerle, Patrick S. Broos, You-Hua Chu, & Gordon P. Garmire.* 593, 874 (2003)

Hubble Space Telescope Paα and 1.9 Micron Imaging of Sagittarius A West. *N. Z. Scoville, S. R. Stolovy, M. Rieke, M. Christopher, & F. Yusef-Zadeh.* 594, 294 (2003)

Massive Stars and the Energy Balance of the Interstellar Medium. I. The Impact of an Isolated 60 $M_{\odot}$ Star. *Tim Freyer, Gerhard Hensler, & Harold W. Yorke.* 594, 888 (2003)

Three Lynds Bright Nebulae. *J. L. Karr & P. G. Martin.* 595, 880 (2003)

Triggered Star Formation in the W5 H II Region. *J. L. Karr & P. G. Martin.* 595, 900 (2003)

Supernova Remnant Candidates in the 30 Doradus Nebula. *J. S. Lazendic, J. R. Dickel, & P. A. Jones.* 596, 287 (2003)

Interstellar Hydroxyl Masers in the Galaxy. II. Zeeman Pairs and the Galactic Magnetic Field. *Vincent L. Fish, Mark J. Reid, Alice L. Argon, & Karl M. Menten.* 596, 328 (2003)

Dual Cometary H II Regions in DR 21: Bow Shocks or Champagne Flows? *C. J. Cyganowski, M. J. Reid, V. L. Fish, & P. T. P. Ho.* 596, 344 (2003)

Molecular Counterparts of Ultracompact H II Regions with Extended Envelopes. *Kee-Tae Kim & Bon-Chul Koo.* 596, 362 (2003)

Detection of a Near-Infrared Counterpart to the Massive Protostar G192.16−3.82. *Rémy Indebetouw, Christer Watson, Kelsey E. Johnson, Barbara Whitney, & Ed Churchwell.* 596, L83 (2003)

Massive Star Formation in a Gravitationally Lensed H II Galaxy at $z = 3.357$. *R. A. E. Fosbury, M. Villar-Martín, A. Humphrey, M. Lombardi, P. Rosati, D. Stern, R. N. Hook, B. P. Holden, S. A. Stanford, G. K. Squires, M. Rauch, & W. L. W. Sargent.* 596, 797 (2003)

Kinematics of Ultracompact H II Regions Revealed: High Spatial and Spectral Resolution Mapping of the 12.8 Micron [Ne II] Line in Monoceros R2. *D. T. Jaffe, Q. Zhu, J. H. Lacy, & M. Richter.* 596, 1053 (2003)

A Near-Infrared Study of the Star-Forming Region S269. *Zhibo Jiang, Yongquiang Yao, Ji Yang, Daisuke Baba, Daisuke Kato, Mikio Kurita, Chie Nagashima, Tetsuya Nagata, Takahiro Nagayama, Yasushi Nakajima, Miki Ishii, Motohide Tamura, & Koji Sugitani.* 596, 1064 (2003)

High-Resolution Continuum Imaging at 1.3 and 0.7 Centimeters of the W3 IRS 5 Region. *T. L. Wilson, D. A. Boboltz, R. A. Gaume, & S. T. Megeath.* 597, 434 (2003)

The Spectral Energy Distributions of Infant Super–Star Clusters in Henize 2-10 from 7 Millimeters to 6 Centimeters. *Kelsey E. Johnson & Henry A. Kobulnicky.* 597, 923 (2003)

Detection of Reactive Ions in the Ultracompact H II Regions Monoceros R2 and G29.96−0.02. *J. R. Rizzo, A. Fuente, A. Rodríguez-Franco, & S. García-Burillo.* 597, L153 (2003)

Hubble Space Telescope Observations of Three Very Young Star Clusters in the Small Magellanic Cloud. *Letizia Stanghellini, Eva Villaver, Richard A. Shaw, & Max Mutchler.* 598, 1000 (2003)

The Influence of Supershells and Galactic Outflows on the Escape of Ionizing Radiation from Dwarf Starburst Galaxies. *Akima Fujita, Crystal L. Martin, Mordecai-Mark Mac Low, & Tom Abel.* 599, 50 (2003)

The DEEP Groth Strip Survey. VII. The Metallicity of Field Galaxies at $0.26 < z < 0.82$ and the Evolution of the Luminosity-Metallicity Relation. *Henry A. Kobulnicky, Christopher N. A. Willmer, Andrew C. Phillips, David C. Koo, S. M. Faber, Benjamin J. Weiner, Vicki L. Sarajedini, Luc Simard, & Nicole P. Vogt.* 599, 1006 (2003)

Measuring Global Galaxy Metallicities Using Emission-Line Equivalent Widths. *Henry A. Kobulnicky & Andrew C. Phillips.* 599, 1031 (2003)

The Compact H II Region S88B: Excitation and Extinction. *Jennifer A. Goetz, Robert Gutermuth, Judith L. Pipher, William J. Forrest, & Eric M. Howard.* 599, 1173 (2003)

The Formation of Massive Stars by Accretion through Trapped Hypercompact H II Regions. *Eric Keto.* 599, 1196 (2003)

Ionizing Photon Emission Rates from O- and Early B-Type Stars and Clusters. *Amiel Sternberg, Tadziu L. Hoffmann, & A. W. A. Pauldrach.* 599, 1333 (2003)

Discovery of a Candidate for the Central Star of the Ultracompact H II Region G5.89−0.39. *M. Feldt, E. Puga, R. Lenzen, Th. Henning, W. Brandner, B. Stecklum, A.-M. Lagrange, E. Gendron, & G. Rousset.* 599, L91 (2003)

ADEMIS: A Library of Evolutionary Models for Emission-Line Galaxies. I. Dust-free Models. *Gladis Margis C., Luc Binette, & Gustavo Bruzual A.* 149, 313 (2003)

The Wisconsin Hα Mapper Northern Sky Survey. *L. M. Haffner, R. J. Reynolds, S. L. Tufte, G. J. Madsen, K. P. Jaehnig, & J. W. Percival.* 149, 405 (2003)

ISM: HERBIG-HARO OBJECTS

Adaptive Optics Spectroscopy of the [Fe II] Outflow from DG Tauri. *Tae-Soo Pyo, Naoto Kobayashi, Masahiko Hayashi, Hiroshi Terada, Miwa Goto, Hideki Takami, Naruhisa Takato, Wolfgang Gaessler, Tomonori Usuda, Takuya Yamashita, Alan T. Tokunaga, Yutaka Hayano, Yukiko Kamata, Masanori Iye, & Yosuke Minowa.* 590, 340 (2003)

Warm Molecular Hydrogen and Ionized Neon in the HH 2 Outflow. *B. LeFloch, J. Cernicharo, S. Cabrit, A. Noriega-Crespo, A. Moro-Martín, & D. Cesarsky.* 590, L41 (2003)

Blowout from IC 1396N: The Emergence of Herbig-Haro Flows from a Cloud Core. *Bo Reipurth, Tina Armond, Alex Raga, & John Bally.* 593, L47 (2003)

VLA and BIMA Observations toward the Exciting Source of the Massive HH 80–81 Outflow. *Y. Gómez, L. F. Rodríguez, J. M. Girart, G. Garay, & J. Martí.* 597, 414 (2003)

ISM: INDIVIDUAL

Name: Carina Nebula

Detection of Far-Infrared Features in Star-forming Regions. *Takashi Onaka & Yoko Okada.* 585, 872 (2003)

Name: Cassiopeia A

On the Magnetic Fields and Particle Acceleration in Cassiopeia A. *Jacco Vink & J. Martin Laming.* 584, 758 (2003)

The Identification of Infrared Synchrotron Radiation from Cassiopeia A. *T. J. Jones, L. Rudnick, T. DeLaney, & J. Bowden.* 587, 227 (2003)

The First Measurement of Cassiopeia A's Forward Shock Expansion Rate. *Tracey DeLaney & Lawrence Rudnick.* 589, 818 (2003)

Near-Infrared Synchrotron Emission from Cassiopeia A. *Jeonghee Rho, Stephen P. Reynolds, William T. Reach, Tom H. Jarrett, Glenn E. Allen, & John C. Wilson.* 592, 299 (2003)

Cassiopeia A and Its Clumpy Presupernova Wind. *Roger A. Chevalier & Jeffrey Oishi.* 593, L23 (2003)

On the Determination of Ejecta Structure and Explosion Asymmetry from the X-Ray Knots of Cassiopeia A. *J. Martin Laming & Una Hwang.* 597, 347 (2003)

Where Was the Iron Synthesized in Cassiopeia A? *Una Hwang & J. Martin Laming.* 597, 362 (2003)

Name: Cepheus A

Expansion of the R4 H_2O Maser Arc near Cepheus A HW2. *J. F. Gallimore, R. J. Cool, M. D. Thornley, & J. McMullin.* 586, 306 (2003)

Name: Crab Nebula

Observation of TeV Gamma Rays from the Crab Nebula with Milagro Using a New Background Rejection Technique. *R. Atkins, W. Benbow, D. Berley, E. Blaufuss, J. Bussons, D. G. Coyne, R. S. Delay, T. DeYoung, B. L. Dingus, D. E. Dorfan, R. W. Ellsworth, A. Falcone, L. Fleysher, R. Fleysher, G. Gisler, M. M. Gonzalez, J. A. Goodman, T. J. Haines, E. Hays, C. M. Hoffman, L. A. Kelley, R. W. Laird, J. McCullough, J. E. McEnery, R. S. Miller, A. I. Mincer, M. F. Morales, P. Nemethy, D. Noyes, J. M. Ryan, F. W. Samuelson, M. Schneider, B. Shen, A. Shoup, G. Sinnis, A. J. Smith, G. W. Sullivan, O. T. Tumer, K. Wang, M. Wascko, D. A. Williams, S. Westerhoff, M. E. Wilson, X. Xu, & G. B. Yodh.* 595, 803 (2003)

Gamma-Ray Spectra and Variability of the Crab Nebula Emission Observed by BATSE. *J. C. Ling & Wm. A. Wheaton.* 598, 334 (2003)

Name: Cygnus Loop

Far-Ultraviolet Spectra of a Nonradiative Shock Wave in the Cygnus Loop. *John C. Raymond, Parviz Ghavamian, Ravi Sankrit, William P. Blair, & Salvador Curiel.* 584, 770 (2003)

Structure of the H I Near the Northeast Limb of the Cygnus Loop. *D. A. Leahy.* 586, 224 (2003)

Name: 30 Doradus

The Chemical Composition of the 30 Doradus Nebula Derived from Very Large Telescope Echelle Spectrophotometry. *Antonio Peimbert.* 584, 735 (2003)

Supernova Remnant Candidates in the 30 Doradus Nebula. *J. S. Lazendic, J. R. Dickel, & P. A. Jones.* 596, 287 (2003)

Name: Kesteven 79

A Compact Central Object in the Supernova Remnant Kesteven 79. *F. D. Seward, P. O. Slane, R. K. Smith, & M. Sun.* 584, 414 (2003)

Name: Large Magellanic Cloud

The Radial Structure of Supernova Remnant N103B. *Karen T. Lewis, David N. Burrows, John P. Hughes, Patrick O. Slane, Gordon P. Garmire, & John A. Nousek.* 582, 770 (2003)

Name: Local Bubble

Surprisingly Little O VI Emission Arises in the Local Bubble. *R. L. Shelton.* 589, 261 (2003)

Name: Local Interstellar Cloud

Elemental Abundances and Mass Densities of Dust and Gas in the Local Interstellar Cloud. *Hiroshi Kimura, Ingrid Mann, & Elmar K. Jessberger.* 582, 846 (2003)

Composition, Structure, and Size Distribution in the Local Interstellar Cloud. *Hiroshi Kimura, Ingrid Mann, & Elmar K. Jessberger.* 583, 314 (2003)

Name: Local Interstellar Medium

Measurement of ^{3}He/^{4}He in the Local Interstellar Medium: The Collisa Experiment on *Mir*. *E. Salerno, F. Bühler, P. Bochsler, H. Busemann, M. L. Bassi, G. N. Zastenker, Yu. N. Agafonov, & N. A. Eismont.* 585, 840 (2003)

Name: Monoceros R2

Kinematics of Ultracompact H II Regions Revealed: High Spatial and Spectral Resolution Mapping of the 12.8 Micron [Ne II] Line in Monoceros R2. *D. T. Jaffe, Q. Zhu, J. H. Lacy, & M. Richter.* 596, 1053 (2003)

Detection of Reactive Ions in the Ultracompact H II Regions Monoceros R2 and G29.96−0.02. *J. R. Rizzo, A. Fuente, A. Rodríguez-Franco, & S. García-Burillo.* 597, L153 (2003)

Name: ρ Ophiuchi

Molecular Outflow Search in the ρ Ophiuchi A and B2 Regions. *Takeshi Kamazaki, Masao Saito, Naomi Hirano, Tomofuni Umemoto, & Ryohei Kawabe.* 584, 357 (2003)

Name: Orion

Massive Quiescent Cores in Orion. I. Temperature Structure. *D. Li, P. F. Goldsmith, & K. Menten.* 587, 262 (2003)

Name: Orion Bar

Dense Molecular Clumps in the Orion Bar Photon-dominated Region. *D. C. Lis & P. Schilke.* 597, L145 (2003)

Name: Orion Kleinmann-Low

Interstellar Glycine. *Yi-Jehng Kuan, Steven B. Charnley, Hui-Chun Huang, Wei-Ling Tseng, & Zbigniew Kisiel.* 593, 848 (2003)

Name: Perseus

The Spectral Correlation Function of Molecular Clouds: A Statistical Test for Theoretical Models. *Paolo Padoan, Alyssa A. Goodman, & Mika Juvela.* 588, 881 (2003)

Name: Perseus Molecular Cloud

Structure Function Scaling in the Taurus and Perseus Molecular Cloud Complexes. *Paolo Padoan, Stanislav Boldyrev, William Langer, & Ake Nordlund.* 583, 308 (2003)

Name: Perseus OB2

An Ultrahigh-Resolution Survey of the Interstellar ^{7}Li/^{6}Li Isotope Ratio in the Solar Neighborhood. *David C. Knauth, S. R. Federman, & David L. Lambert.* 586, 268 (2003)

Name: Pleiades

The Pleiades Reflection Nebula. I. Ultraviolet, Optical, and Far-Infrared Imaging Photometry. *Steven J. Gibson & Kenneth H. Nordsieck.* 589, 347 (2003)

The Pleiades Reflection Nebula. II. Simple Model Constraints on Dust Properties and Scattering Geometry. *Steven J. Gibson & Kenneth H. Nordsieck.* 589, 362 (2003)

Name: Rosette Molecular Complex

The Spectral Correlation Function of Molecular Clouds: A Statistical Test for Theoretical Models. *Paolo Padoan, Alyssa A. Goodman, & Mika Juvela.* 588, 881 (2003)

Name: Sagittarius B2

A Survey of Acetic Acid toward Hot Molecular Cores. *A. Remijan, L. E. Snyder, D. N. Friedel, S.-Y. Liu, & R. Y. Shah.* 590, 314 (2003)

Submillimeter Wave Astronomy Satellite Mapping Observations of Water Vapor around Sagittarius B2. *David A. Neufeld, Edwin A. Bergin, Gary J. Melnick, & Paul F. Goldsmith.* 590, 882 (2003)

Name: Sagittarius B2(N)

Oxirane: An Exotic Oxygenated Organic Compound in Titan? *Patrice Coll, Jean-Michel Bernard, Rafael Navarro-González, & François Raulin.* 598, 700 (2003)

Name: Sagittarius B2(N-LMH)

Interstellar Glycine. *Yi-Jehng Kuan, Steven B. Charnley, Hui-Chun Huang, Wei-Ling Tseng, & Zbigniew Kisiel.* 593, 848 (2003)

Kinematics of the SGR B2 (N-LMH) Molecular Core. *Jan M. Hollis, J. A. Pedelty, D. A. Boboltz, S.-Y. Liu, L. E. Snyder, Patrick Palmer, F. J. Lovas, & P. R. Jewell.* 596, L235 (2003)

Name: Scorpius OB2

An Ultrahigh-Resolution Survey of the Interstellar ^{7}Li/^{6}Li Isotope Ratio in the Solar Neighborhood. *David C. Knauth, S. R. Federman, & David L. Lambert.* 586, 268 (2003)

Name: Sharpless 171

Detection of Far-Infrared Features in Star-forming Regions. *Takashi Onaka & Yoko Okada.* 585, 872 (2003)

Name: DG Tauri

Adaptive Optics Spectroscopy of the [Fe II] Outflow from DG Tauri. *Tae-Soo Pyo, Naoto Kobayashi, Masahiko Hayashi, Hiroshi Terada, Miwa Goto, Hideki Takami, Naruhisa Takato, Wolfgang Gaessler, Tomonori Usuda, Takuya Yamashita, Alan T. Tokunaga, Yutaka Hayano, Yukiko Kamata, Masanori Iye, & Yosuke Minowa.* 590, 340 (2003)

Name: Taurus Cloud Complex

Structure Function Scaling in the Taurus and Perseus Molecular Cloud Complexes. *Paolo Padoan, Stanislav Boldyrev, William Langer, & Ake Nordlund.* 583, 308 (2003)

Name: Taurus Molecular Cloud

The Spectral Correlation Function of Molecular Clouds: A Statistical Test for Theoretical Models. *Paolo Padoan, Alyssa A. Goodman, & Mika Juvela.* 588, 881 (2003)

Name: Vela Supernova Remnant

Optical and Far-Ultraviolet Spectroscopy of Knot D in the Vela Supernova Remnant. *Ravi Sankrit, William P. Blair, & John C. Raymond.* 589, 242 (2003)

The Variable Jet of the Vela Pulsar. *G. G. Pavlov, M. A. Teter, O. Kargaltsev, & D. Sanwal.* 591, 1157 (2003)

NGC Number: NGC 346

Far-Ultraviolet and Hα Spectroscopy of SNR 0057−7226 in the Small Magellanic Cloud H II Region N66. *Charles W. Danforth, Ravi Sankrit, William P. Blair, J. Christopher Howk, & You-Hua Chu.* 586, 1179 (2003)

NGC Number: NGC 891

Probing O VI Emission in the Halos of Edge-On Spiral Galaxies. *B. Otte, E. M. Murphy, J. C. Howk, Q. D. Wang, W. R. Oegerle, & K. R. Sembach.* 591, 821 (2003)

NGC Number: NGC 1333 Molecular Cloud

A Survey of 557 GHz Water Vapor Emission in the NGC 1333 Molecular Cloud. *Edwin A. Bergin, Michael J. Kaufman, Gary J. Melnick, Ronald L. Snell, & John E. Howe.* 582, 830 (2003)

NGC Number: NGC 2264 IRS 1

NGC 2264 IRS 1: The Central Engine and Its Cavity. *K. Schreyer, B. Stecklum, H. Linz, & Th. Henning.* 599, 334 (2003)

NGC Number: NGC 3372

Numerous Proplyd Candidates in the Harsh Environment of the Carina Nebula. *Nathan Smith, John Bally, & Jon A. Morse.* 587, L105 (2003)

NGC Number: NGC 4631

Probing O VI Emission in the Halos of Edge-On Spiral Galaxies. *B. Otte, E. M. Murphy, J. C. Howk, Q. D. Wang, W. R. Oegerle, & K. R. Sembach.* 591, 821 (2003)

NGC Number: NGC 7023

Spatial Separation of the 3.29 Micron Emission Feature and Associated 2 Micron Continuum in NGC 7023. *Jin H. An & K. Sellgren.* 599, 311 (2003)

NGC Number: NGC 7129

Neutral Hydrogen Associated with NGC 7129. *H. E. Matthews, C. R. Purton, R. S. Roger, P. E. Dewdney, & G. F. Mitchell.* 592, 176 (2003)

NGC Number: NGC 7538

The Formaldehyde Masers in NGC 7538 and G29.96−0.02: Very Long Baseline Array, Multielement Radio-linked Interferometer Network, and Very Large Array Observations. *Ian M. Hoffman, W. M. Goss, Patrick Palmer, & A. M. S. Richards.* 598, 1061 (2003)

Alphanumeric: 0103−72.6

0103−72.6: A New Oxygen-rich Supernova Remnant in the Small Magellanic Cloud. *Sangwook Park, John P. Hughes, David N. Burrows, Patrick O. Slane, John A. Nousek, & Gordon P. Garmire.* 598, L95 (2003)

Alphanumeric: 0525−66

Detection of Magnesium-rich Ejecta in the Middle-aged Supernova Remnant N49B. *Sangwook Park, John P. Hughes, Patrick O. Slane, David N.*

Burrows, Jessica S. Warren, Gordon P. Garmire, & John A. Nousek. 592, L41 (2003)

Alphanumeric: AFGL 2591

Observations of Water Masers and Radio Continuum Emission in AFGL 2591. *Miguel A. Trinidad, Salvador Curiel, Jorge Cantó, Paola D'Alessio, Luis F. Rodríguez, José M. Torrelles, José F. Gómez, Nimesh Patel, & Paul T. P. Ho.* 589, 386 (2003)

Alphanumeric: AX J1843.8−0352

Chandra Observations of a Nonthermal Supernova Remnant Candidate AX J1843.8−0352 and Its Surroundings. *Masaru Ueno, Aya Bamba, Katsuji Koyama, & Ken Ebisawa.* 588, 338 (2003)

Alphanumeric: B335

Inner Structures of Protostellar Collapse Candidate B335 Derived from Millimeter-Wave Interferometry. *Daniel W. A. Harvey, David J. Wilner, Philip C. Myers, Mario Tafalla, & Diego Mardones.* 583, 809 (2003)

Magnetic Field Evolution in Bok Globules. *Sebastian Wolf, R. Launhardt, & T. Henning.* 592, 233 (2003)

Disk Properties and Density Structure of the Star-Forming Dense Core B335. *Daniel W. A. Harvey, David J. Wilner, Philip C. Myers, & Mario Tafalla.* 596, 383 (2003)

Alphanumeric: CB 230

Magnetic Field Evolution in Bok Globules. *Sebastian Wolf, R. Launhardt, & T. Henning.* 592, 233 (2003)

ALphanumeric: CB 244

Magnetic Field Evolution in Bok Globules. *Sebastian Wolf, R. Launhardt, & T. Henning.* 592, 233 (2003)

Alphanumeric: CTB 87

The Distance to the Supernova Remnant CTB 87 and the Radial Velocity of the Perseus Arm toward $l = 75°$, Derived from H I and CO Observations. *Roland Kothes, Wolfgang Reich, Tyler Foster, & Do-Young Byun.* 588, 852 (2003)

Alphanumeric: DEM L71

The Physics of Supernova Blast Waves. I. Kinematics of DEM L71 in the Large Magellanic Cloud. *Parviz Ghavamian, Cara E. Rakowski, John P. Hughes, & T. B. Williams.* 590, 833 (2003)

The Physics of Supernova Remnant Blast Waves. II. Electron-Ion Equilibration in DEM L71 in the Large Magellanic Cloud. *Cara E. Rakowski, Parviz Ghavamian, & John P. Hughes.* 590, 846 (2003)

Alphanumeric: DR 21

Dual Cometary H II Regions in DR 21: Bow Shocks or Champagne Flows? *C. J. Cyganowski, M. J. Reid, V. L. Fish, & P. T. P. Ho.* 596, 344 (2003)

Alphanumeric: DR 21(OH)

Interferometric Mapping of Magnetic Fields in Star-Forming Regions. III. Dust and CO Polarization in DR 21(OH). *Shih-Ping Lai, José M. Girart, & Richard M. Crutcher.* 598, 392 (2003)

Alphanumeric: G11.0+0.0

Diffuse Hard X-Ray Sources Discovered with the *ASCA* Galactic Plane Survey. *Aya Bamba, Masaru Ueno, Katsuji Koyama, & Shigeo Yamauchi.* 589, 253 (2003)

Alphanumeric: G18.0−0.7

XMM-Newton Observations of PSR B1823−13: An Asymmetric Synchrotron Nebula around a Vela-like Pulsar. *B. M. Gaensler, N. S. Schulz, V. M. Kaspi, M. J. Pivovaroff, & W. E. Becker.* 588, 441 (2003)

Alphanumeric: G25.5+0.0

Diffuse Hard X-Ray Sources Discovered with the *ASCA* Galactic Plane Survey. *Aya Bamba, Masaru Ueno, Katsuji Koyama, & Shigeo Yamauchi.* 589, 253 (2003)

Alphanumeric: G26.6−0.1

Diffuse Hard X-Ray Sources Discovered with the *ASCA* Galactic Plane Survey. *Aya Bamba, Masaru Ueno, Katsuji Koyama, & Shigeo Yamauchi.* 589, 253 (2003)

Alphanumeric: G29.96−0.02

Detection of Reactive Ions in the Ultracompact H II Regions Monoceros R2 and G29.96−0.02. *J. R. Rizzo, A. Fuente, A. Rodríguez-Franco, & S. García-Burillo.* 597, L153 (2003)

The Formaldehyde Masers in NGC 7538 and G29.96−0.02: Very Long Baseline Array, Multielement Radio-linked Interferometer Network, and Very Large Array Observations. *Ian M. Hoffman, W. M. Goss, Patrick Palmer, & A. M. S. Richards.* 598, 1061 (2003)

Alphanumeric: G192.16−3.82

Detection of a Near-Infrared Counterpart to the Massive Protostar G192.16−3.82. *Rémy Indebetouw, Christer Watson, Kelsey E. Johnson, Barbara Whitney, & Ed Churchwell.* 596, L83 (2003)

Alphanumeric: G292.0+1.8

New Constraints on the Energetics, Progenitor Mass, and Age of the Supernova Remnant G292.0+1.8 Containing PSR J1124−5916. *Marjorie Gonzalez & Samar Safi-Harb.* 583, L91 (2003)

An X-Ray Pulsar in the Oxygen-rich Supernova Remnant G292.0+1.8. *John P. Hughes, Patrick O. Slane, Sangwook Park, Peter W. A. Roming, & David N. Burrows.* 591, L139 (2003)

A Multifrequency Radio Study of Supernova Remnant G292.0+1.8 and Its Pulsar Wind Nebula. *B. M. Gaensler & B. J. Wallace.* 594, 326 (2003)

Alphanumeric: G292.2−0.5

Chandra Detection of the High Magnetic Field Radio Pulsar J1119−6127 in the Supernova Remnant G292.2−0.5. *Marjorie Gonzalez & Samar Safi-Harb.* 591, L143 (2003)

Alphanumeric: G347.3−0.5

X-Ray Observations of the Compact Central Object in Supernova Remnant G347.3−0.5. *J. S. Lazendic, P. O. Slane, B. M. Gaensler, P. P. Plucinsky, J. P. Hughes, D. K. Galloway, & F. Crawford.* 593, L27 (2003)

Alphanumeric: G357.7−0.1

Untwisting the Tornado: X-Ray Imaging and Spectroscopy of G357.7−0.1. *B. M. Gaensler, J. K. J. Fogel, P. O. Slane, J. M. Miller, R. Wijnands, S. S. Eikenberry, & W. H. G. Lewin.* 594, L35 (2003)

Alphanumeric: GGD 27

VLA and BIMA Observations toward the Exciting Source of the Massive HH 80–81 Outflow. *Y. Gómez, L. F. Rodríguez, J. M. Girart, G. Garay, & J. Martí.* 597, 414 (2003)

Alphanumeric: HH 1–2

Warm Molecular Hydrogen and Ionized Neon in the HH 2 Outflow. *B. LeFloch, J. Cernicharo, S. Cabrit, A. Noriega-Crespo, A. Moro-Martín, & D. Cesarsky.* 590, L41 (2003)

Alphanumeric: HH 80–81

VLA and BIMA Observations toward the Exciting Source of the Massive HH 80–81 Outflow. *Y. Gómez, L. F. Rodríguez, J. M. Girart, G. Garay, & J. Martí.* 597, 414 (2003)

Alphanumeric: HH 158

Adaptive Optics Spectroscopy of the [Fe II] Outflow from DG Tauri. *Tae-Soo Pyo, Naoto Kobayashi, Masahiko Hayashi, Hiroshi Terada, Miwa Goto, Hideki Takami, Naruhisa Takato, Wolfgang Gaessler, Tomonori Usuda, Takuya Yamashita, Alan T. Tokunaga, Yutaka Hayano, Yukiko Kamata, Masanori Iye, & Yosuke Minowa.* 590, 340 (2003)

Alphanumeric: IC 443

The Sizes of OH (1720 MHz) Supernova Remnant Masers: MERLIN and Very Long Baseline Array Observations of IC 443. *I. M. Hoffman, W. M. Goss, C. L. Brogan, M. J. Claussen, & A. M. S. Richards.* 583, 272 (2003)

Alphanumeric: IRAM 04191+1522

Interaction between the Outflow and the Core in IRAM 04191+1522. *Shigehisa Takakuwa, Nagayoshi Ohashi, & Naomi Hirano.* 590, 932 (2003)

Alphanumeric: IRAS 16293−2422

The Hot Core around the Low-Mass Protostar IRAS 16293−2422: Scoundrels Rule! *S. Cazaux, A. G. G. M. Tielens, C. Ceccarelli, A. Castets, V. Wakelam, E. Caux, B. Parise, & D. Teyssier.* 593, L51 (2003)

Alphanumeric: IRAS 16547−4247

A Triple Radio Continuum Source Associated with IRAS 16547−4247: A Collimated Stellar Wind Emanating from a Massive Protostar. *Guido Garay, Kate J. Brooks, Diego Mardones, & Ray P. Norris.* 587, 739 (2003)

A Parsec-Scale Flow Associated with the IRAS 16547−4247 Radio Jet. *Kate J. Brooks, Guido Garay, Diego Mardones, & Leonardo Bronfman.* 594, L131 (2003)

Alphanumeric: IRAS 18162−2048

VLA and BIMA Observations toward the Exciting Source of the Massive HH 80–81 Outflow. *Y. Gómez, L. F. Rodríguez, J. M. Girart, G. Garay, & J. Martí.* 597, 414 (2003)

Alphanumeric: K3-50A

K3-50A: An Ultracompact H II Region Ionized by a Massive Stellar Cluster. *Yoshiko K. Okamoto, Hirokazu Kataza, Takuya Yamashita, Takashi*

Miyata, Shigeyuki Sako, Shinya Takubo, Mitsuhiko Honda, & Takashi Onaka. 584, 368 (2003)

Alphanumeric: L694

Inner Structure of Starless Core L694-2 Derived from Millimeter-Wave Interferometry. *Daniel W. A. Harvey, David J. Wilner, Philip C. Myers, & Mario Tafalla.* 597, 424 (2003)

Envelope Structure of Starless Core L694-2 Derived from a Near-Infrared Extinction Map. *Daniel W. A. Harvey, David J. Wilner, Charles J. Lada, Philip C. Myers, & Joao F. Alves.* 598, 1112 (2003)

Alphanumeric: L1448

Mid-Infrared Imaging of the Protostellar Binary L1448N IRS 3(A,B). *David R. Ciardi, Charles M. Telesco, Jonathan P. Williams, R. Scott Fisher, Chris Packham, Robert Piña, & James Radomski.* 585, 392 (2003)

Alphanumeric: L1448 IRS 3

Mid-Infrared Imaging of the Protostellar Binary L1448N IRS 3(A,B). *David R. Ciardi, Charles M. Telesco, Jonathan P. Williams, R. Scott Fisher, Chris Packham, Robert Piña, & James Radomski.* 585, 392 (2003)

Alphanumeric: L1551

X-Rays from the Vicinity of the Protostar L1551 IRS 5: Reflection or Fast Shocks? *John Bally, Eric Feigelson, & Bo Reipurth.* 584, 843 (2003)

Alphanumeric: L1544

A Coupled Dynamical and Chemical Model of Starless Cores of Magnetized Molecular Clouds. II. Chemical Differentiation. *V. I. Shematovich, D. S. Wiebe, B. M. Shustov, & Zhi-Yun Li.* 588, 894 (2003)

Enhanced Deuterium Fractionation in Dense Interstellar Cores Resulting from Multiply Deuterated H_3^+. *Helen Roberts, Eric Herbst, & T. J. Millar.* 591, L41 (2003)

Molecular Evolution in Collapsing Prestellar Cores. II. The Effect of Grain-Surface Reactions. *Yuri Aikawa, Nagayoshi Ohashi, & Eric Herbst.* 593, 906 (2003)

Alphanumeric: L1688

Distribution of the C I Emission in the ρ Ophiuchi Dark Cloud. *Kazuhisa Kamegai, Masafumi Ikeda, Hiroyuki Maezawa, Tetsuya Ito, Mitsuhiro Iwata, Takeshi Sakai, Tomoharu Oka, Satoshi Yamamoto, Yutaro Sekimoto, Ken'ichi Tatematsu, Takashi Noguchi, Shuji Saito, Hideo Fujiwara, Hiroyuki Ozeki, Junji Inatani, & Masatoshi Ohishi.* 589, 378 (2003)

Alphanumeric: LBN 139.57+2.70

Three Lynds Bright Nebulae. *J. L. Karr & P. G. Martin.* 595, 880 (2003)

Alphanumeric: LBN 140.07+1.64

Three Lynds Bright Nebulae. *J. L. Karr & P. G. Martin.* 595, 880 (2003)

Alphanumeric: LBN 140.77−1.42

Three Lynds Bright Nebulae. *J. L. Karr & P. G. Martin.* 595, 880 (2003)

Alphanumeric: M17

Diffuse X-Ray Emission from the Quiescent Superbubble M17, the Omega Nebula. *Bryan C. Dunne, You-Hua Chu, C.-H. Rosie Chen, Justin D. Lowry, Leisa Townsley, Robert A. Gruendl, Martín A. Guerrero, & Margarita Rosado.* 590, 306 (2003)

Alphanumeric: MBM 12

Indications for Grain Growth and Mass Decrease in Cold Dust Disks around Classical T Tauri Stars in the MBM 12 Young Association. *Michiel R. Hogerheijde, Doug Johnstone, Isamu Matsuyama, Ray Jayawardhana, & James Muzerolle.* 593, L101 (2003)

Alphanumeric: MCLD 123.5+24.9

[C I] 492 GHz Mapping Observations of the High-Latitude Translucent Cloud MCLD 123.5+24.9. *F. Bensch, U. Leuenhagen, J. Stutzki, & R. Schieder.* 591, 1013 (2003)

Alphanumeric: MSH 11−54

New Constraints on the Energetics, Progenitor Mass, and Age of the Supernova Remnant G292.0+1.8 Containing PSR J1124−5916. *Marjorie Gonzalez & Samar Safi-Harb.* 583, L91 (2003)

An X-Ray Pulsar in the Oxygen-rich Supernova Remnant G292.0+1.8. *John P. Hughes, Patrick O. Slane, Sangwook Park, Peter W. A. Roming, & David N. Burrows.* 591, L139 (2003)

Alphanumeric: N49

X-Ray Emission from Multiphase Shock in the Large Magellanic Cloud Supernova Remnant N49. *Sangwook Park, David N. Burrows, Gordon P. Garmire, John A. Nousek, John P. Hughes, & Rosa Murphy Williams.* 586, 210 (2003)

Alphanumeric: N49B

Detection of Magnesium-rich Ejecta in the Middle-aged Supernova Remnant N49B. *Sangwook Park, John P. Hughes, Patrick O. Slane, David N. Burrows, Jessica S. Warren, Gordon P. Garmire, & John A. Nousek.* 592, L41 (2003)

Alphanumeric: N63A

Revealing New Physical Structures in the Supernova Remnant N63A through *Chandra* Imaging Spectroscopy. *Jessica S. Warren, John P. Hughes, & Patrick O. Slane.* 583, 260 (2003)

Alphanumeric: N66

Far-Ultraviolet and Hα Spectroscopy of SNR 0057−7226 in the Small Magellanic Cloud H II Region N66. *Charles W. Danforth, Ravi Sankrit, William P. Blair, J. Christopher Howk, & You-Hua Chu.* 586, 1179 (2003)

Alphanumeric: N103B

The Radial Structure of Supernova Remnant N103B. *Karen T. Lewis, David N. Burrows, John P. Hughes, Patrick O. Slane, Gordon P. Garmire, & John A. Nousek.* 582, 770 (2003)

Alphanumeric: N132D

Supernova Remnant Crossing a Density Jump: A Thin-Shell Model. *Yang Chen, Fan Zhang, Rosa M. Williams, & Q. Daniel Wang.* 595, 227 (2003)

Alphanumeric: OMC-1

A Sensitive Very Large Array Search for Small-Scale Glycine Emission toward OMC-1. *J. M. Hollis, J. A. Pedelty, L. E. Snyder, P. R. Jewell, F. J. Lovas, Patrick Palmer, & S.-Y. Liu.* 588, 353 (2003)

Alphanumeric: OMC-2

High-Resolution Imaging of CO Outflows in OMC-2 and OMC-3. *Jonathan P. Williams, R. L. Plambeck, & Mark H. Heyer.* 591, 1025 (2003)

Alphanumeric: OMC-3

High-Resolution Imaging of CO Outflows in OMC-2 and OMC-3. *Jonathan P. Williams, R. L. Plambeck, & Mark H. Heyer.* 591, 1025 (2003)

Alphanumeric: PSR J1124−5916

New Constraints on the Energetics, Progenitor Mass, and Age of the Supernova Remnant G292.0+1.8 Containing PSR J1124−5916. *Marjorie Gonzalez & Samar Safi-Harb.* 583, L91 (2003)

Alphanumeric: S88B

The Compact H II Region S88B: Excitation and Extinction. *Jennifer A. Goetz, Robert Gutermuth, Judith L. Pipher, William J. Forrest, & Eric M. Howard.* 599, 1173 (2003)

Alphanumeric: S269

A Near-Infrared Study of the Star-Forming Region S269. *Zhibo Jiang, Yongquiang Yao, Ji Yang, Daisuke Baba, Daisuke Kato, Mikio Kurita, Chie Nagashima, Tetsuya Nagata, Takahiro Nagayama, Yasushi Nakajima, Miki Ishii, Motohide Tamura, & Koji Sugitani.* 596, 1064 (2003)

Alphanumeric: S308

Hot Gas in the Circumstellar Bubble S308. *You-Hua Chu, Martín A. Guerrero, Robert A. Gruendl, Guillermo García-Segura, & Heinrich J. Wendker.* 599, 1189 (2003)

Alphanumeric: SN 1006

The SN 1006 Remnant: Optical Proper Motions, Deep Imaging, Distance, and Brightness at Maximum. *P. Frank Winkler, Gaurav Gupta, & Knox S. Long.* 585, 324 (2003)

Chandra CCD Imagery of the Northeast and Northwest Limbs of SN 1006. *Knox S. Long, Stephen P. Reynolds, John C. Raymond, P. Frank Winkler, Kristy K. Dyer, & Robert Petre.* 586, 1162 (2003)

Small-Scale Structure of the SN 1006 Shock with *Chandra* Observations. *Aya Bamba, Ryo Yamazaki, Masaru Ueno, & Katsuji Koyama.* 589, 827 (2003)

Alphanumeric: SN 1572

Thermal X-Ray Emission from Shocked Ejecta in Type Ia Supernova Remnants. Prospects for Explosion Mechanism Identification. *Carles Badenes, Eduardo Bravo, Kazimierz J. Borkowski, & Inmaculada Domínguez.* 593, 358 (2003)

Alphanumeric: SNR 0057−7226

Far-Ultraviolet and Hα Spectroscopy of SNR 0057−7226 in the Small Magellanic Cloud H II Region N66. *Charles W. Danforth, Ravi Sankrit, William P. Blair, J. Christopher Howk, & You-Hua Chu.* 586, 1179 (2003)

Alphanumeric: SNR 0505−67.9

The Physics of Supernova Blast Waves. I. Kinematics of DEM L71 in the Large Magellanic Cloud. *Parviz Ghavamian, Cara E. Rakowski, John P. Hughes, & T. B. Williams.* 590, 833 (2003)

The Physics of Supernova Remnant Blast Waves. II. Electron-Ion Equilibration in DEM L71 in the Large Magellanic Cloud. *Cara E. Rakowski, Parviz Ghavamian, & John P. Hughes.* 590, 846 (2003)

Alphanumeric: SNR 0534−69.9

Ejecta Detection in Middle-aged Large Magellanic Cloud Supernova Remnants 0548−70.4 and 0534−69.9. *S. P. Hendrick, K. J. Borkowski, & S. P. Reynolds.* 593, 370 (2003)

Alphanumeric: SNR G16.7+0.1

An X-Ray Image of the Composite Supernova Remnant G16.7+0.1. *David J. Helfand, Marcel A. Agueros, & E. V. Gotthelf.* 592, 941 (2003)

Alphanumeric: SNR G39.2−0.3

Chandra Detection of a Pulsar Wind Nebula Associated with Supernova Remnant 3C 396. *C. M. Olbert, J. W. Keohane, K. A. Arnaud, K. K. Dyer, S. P. Reynolds, & S. Safi-Harb.* 592, L45 (2003)

Alphanumeric: SNR 0548−70.4

Ejecta Detection in Middle-aged Large Magellanic Cloud Supernova Remnants 0548−70.4 and 0534−69.9. *S. P. Hendrick, K. J. Borkowski, & S. P. Reynolds.* 593, 370 (2003)

Alphanumeric: SNR G327.6+14.6

The SN 1006 Remnant: Optical Proper Motions, Deep Imaging, Distance, and Brightness at Maximum. *P. Frank Winkler, Gaurav Gupta, & Knox S. Long.* 585, 324 (2003)

Alphanumeric: TMC-1C

$H^{13}CO^+$ and CH_3OH Line Observations of Prestellar Dense Cores in the TMC-1C Region. II. Internal Structure. *Shigehisa Takakuwa, Takeshi Kamazaki, Masao Saito, & Naomi Hirano.* 584, 818 (2003)

Alphanumeric: W3

A High Spectral Resolution VLBI Study of the 12 GHz Methanol Masers in W3(OH): Their Submilliarcsecond Structure and Clues on Saturation. *L. Moscadelli, K. M. Menten, C. M. Walmsley, & M. J. Reid.* 583, 776 (2003)

A Class of Interstellar OH Masers Associated with Protostellar Outflows. *Alice L. Argon, Mark J. Reid, & Karl M. Menten.* 593, 925 (2003)

High-Resolution Continuum Imaging at 1.3 and 0.7 Centimeters of the W3 IRS 5 Region. *T. L. Wilson, D. A. Boboltz, R. A. Gaume, & S. T. Megeath.* 597, 434 (2003)

Alphanumeric: W3 IRS 5

Linear Polarization Observations of Water Masers in W3 IRS 5. *Hiroshi Imai, Shinji Horiuchi, Shuji Deguchi, & Osamu Kameya.* 595, 285 (2003)

Alphanumeric: W4 Superbubble

The Impact of Ionizing Stars on the Diffuse Interstellar Medium: A Swept-Up Shell and Ionized Halo around the W4 Chimney/Superbubble. *S. Terebey, M. Fich, R. Taylor, Y. Cao, & T. Hancock.* 590, 906 (2003)

Alphanumeric: W5

Triggered Star Formation in the W5 H II Region. *J. L. Karr & P. G. Martin.* 595, 900 (2003)

Alphanumeric: W43

From Massive Protostars to a Giant H II Region: Submillimeter Imaging of the Galactic Ministarburst W43. *F. Motte, P. Schilke, & D. C. Lis.* 582, 277 (2003)

Alphanumeric: W51

A Survey of Acetic Acid toward Hot Molecular Cores. *A. Remijan, L. E. Snyder, D. N. Friedel, S.-Y. Liu, & R. Y. Shah.* 590, 314 (2003)

Alphanumeric: W51 e1/e2

Interstellar Glycine. *Yi-Jehng Kuan, Steven B. Charnley, Hui-Chun Huang, Wei-Ling Tseng, & Zbigniew Kisiel.* 593, 848 (2003)

Alphanumeric: W75

Evidence for Evolution of the Outflow Collimation in Very Young Stellar Objects. *J. M. Torrelles, N. A. Patel, G. Anglada, J. F. Gómez, P. T. P. Ho, L. Lara, A. Alberdi, J. Cantó, S. Curiel, G. Garay, & L. F. Rodríguez.* 598, L115 (2003)

ISM: JETS AND OUTFLOWS

The Large-Scale Bipolar Wind in the Galactic Center. *Joss Bland-Hawthorn & Martin Cohen.* 582, 246 (2003)

Stellar Outflows Driven by Magnetized Wide-Angle Winds. *T. A. Gardiner, A. Frank, & L. Hartmann.* 582, 269 (2003)

Three-Dimensional Simulations of Jets from Keplerian Disks: Self-Regulatory Stability. *Rachid Ouyed, David A. Clarke, & Ralph E. Pudritz.* 582, 292 (2003)

A Survey of 557 GHz Water Vapor Emission in the NGC 1333 Molecular Cloud. *Edwin A. Bergin, Michael J. Kaufman, Gary J. Melnick, Ronald L. Snell, & John E. Howe.* 582, 830 (2003)

Very Large Array Observations of Proper Motions in YLW 15. *S. Curiel, J. M. Girart, L. F. Rodríguez, & J. Canto.* 582, L109 (2003)

Very Large Array Observations of Proper Motions in L1551 IRS 5. *Luis F. Rodríguez, Salvador Curiel, Jorge Cantó, Laurent Loinard, Alejandro C. Raga, & Jose M. Torrelles.* 583, 330 (2003)

Water Maser Survey toward Low-Mass Young Stellar Objects in the Northern Sky with the Nobeyama 45 Meter Telescope and the Very Large Array. *Ray S. Furuya, Yoshimi Kitamura, Alwyn Wooten, Mark J. Claussen, & Ryohei Kawabe.* 144, 71 (2003)

Inner Structures of Protostellar Collapse Candidate B335 Derived from Millimeter-Wave Interferometry. *Daniel W. A. Harvey, David J. Wilner, Philip C. Myers, Mario Tafalla, & Diego Mardones.* 583, 809 (2003)

Molecular Outflow Search in the ρ Ophiuchi A and B2 Regions. *Takeshi Kamazaki, Masao Saito, Naomi Hirano, Tomofuni Umemoto, & Ryohei Kawabe.* 584, 357 (2003)

The Collimated Wind in NGC 253. *H. Sugai, R. I. Davies, & M. J. Ward.* 584, L9 (2003)

X-Rays from the Vicinity of the Protostar L1551 IRS 5: Reflection or Fast Shocks? *John Bally, Eric Feigelson, & Bo Reipurth.* 584, 843 (2003)

Clustered Star Formation in W75 N. *D. S. Shepherd, L. Testi, & D. P. Stark.* 584, 882 (2003)

Ram Pressure Stripping in Planetary Nebulae. *Eva Villaver, Guillermo García-Segura, & Arturo Manchado.* 585, L49 (2003)

High-Energy Emission from the Prompt Gamma-Ray Burst. *Dafne Guetta & Jonathan Granot.* 585, 885 (2003)

The Binary Jet in L1551 IRS 5. *Luis F. Rodríguez, Alicia Porras, Mark J. Claussen, Salvador Curiel, David J. Wilner, & Paul T. P. Ho.* 586, L137 (2003)

A Triple Radio Continuum Source Associated with IRAS 16547−4247: A Collimated Stellar Wind Emanating from a Massive Protostar. *Guido Garay, Kate J. Brooks, Diego Mardones, & Ray P. Norris.* 587, 739 (2003)

Jet-induced Nucleosynthesis in Misaligned Microquasars. *Yousaf M. Butt, Thomas J. Maccarone, & Nikos Prantzos.* 587, 748 (2003)

Numerous Proplyd Candidates in the Harsh Environment of the Carina Nebula. *Nathan Smith, John Bally, & Jon A. Morse.* 587, L105 (2003)

Observations of Water Masers and Radio Continuum Emission in AFGL 2591. *Miguel A. Trinidad, Salvador Curiel, Jorge Cantó, Paola D'Alessio, Luis F. Rodríguez, José M. Torrelles, José F. Gómez, Nimesh Patel, & Paul T. P. Ho.* 589, 386 (2003)

Global Asymptotic Solutions for Magnetohydrodynamic Jets and Winds. *I. Okamoto.* 589, 671 (2003)

A Warped Accretion Disk and Wide-Angle Outflow in the Inner Parsec of the Circinus Galaxy. *L. J. Greenhill, R. S. Booth, S. P. Ellingsen, J. R. Herrnstein, D. L. Jauncey, P. M. McCulloch, J. M. Moran, R. P. Norris, J. E. Reynolds, & A. K. Tzioumis.* 590, 162 (2003)

Adaptive Optics Spectroscopy of the [Fe II] Outflow from DG Tauri. *Tae-Soo Pyo, Naoto Kobayashi, Masahiko Hayashi, Hiroshi Terada, Miwa Goto, Hideki Takami, Naruhisa Takato, Wolfgang Gaessler, Tomonori Usuda, Takuya Yamashita, Alan T. Tokunaga, Yutaka Hayano, Yukiko Kamata, Masanori Iye, & Yosuke Minowa.* 590, 340 (2003)

A Standard Kinetic Energy Reservoir in Gamma-Ray Burst Afterglows. *E. Berger, S. R. Kulkarni, & D. A. Frail.* 590, 379 (2003)

Warm Molecular Hydrogen and Ionized Neon in the HH 2 Outflow. *B. LeFloch, J. Cernicharo, S. Cabrit, A. Noriega-Crespo, A. Moro-Martín, & D. Cesarsky.* 590, L41 (2003)

Trapped Protostellar Winds and Their Breakout. *Francis P. Wilkin & Steven W. Stahler.* 590, 917 (2003)

Interaction between the Outflow and the Core in IRAM 04191+1522. *Shigehisa Takakuwa, Nagayoshi Ohashi, & Naomi Hirano.* 590, 932 (2003)

Locating the Launching Region of T Tauri Winds: The Case of DG Tauri. *Jeffrey M. Anderson, Zhi-Yun Li, Ruben Krasnopolsky, & Roger D. Blandford.* 590, L107 (2003)

A Compact X-Ray Source and Possible X-Ray Jets within the Planetary Nebula Menzel 3. *Joel H. Kastner, Bruce Balick, Eric G. Blackman,*

Adam Frank, Noam Soker, Saeqa D. Vrtilek, & Jingqiang Li. 591, L37 (2003)

The Variable Jet of the Vela Pulsar. *G. G. Pavlov, M. A. Teter, O. Kargaltsev, & D. Sanwal.* 591, 1157 (2003)

Warping of Accretion Disks with Magnetically Driven Outflows: A Possible Origin for Jet Precession. *Dong Lai.* 591, L119 (2003)

Multiwavelength Spectroscopy of the Bipolar Outflow from Cepheus E. *Michael D. Smith, Dirk Froebrich, & Jochen Eislöffel.* 592, 245 (2003)

Numerical Simulations of Astrophysical Jets from Keplerian Disks with Periodic Ejection. *B. F. Vitorino, V. Jatenco-Pereira, & R. Opher.* 592, 332 (2003)

External Shock Model for the Large-Scale, Relativistic X-Ray Jets from the Microquasar XTE J1550−564. *X. Y. Wang, Z. G. Dai, & T. Lu.* 592, 347 (2003)

The Effect of Angular Structure of Gamma-Ray Burst Outflows on the Afterglow Emission. *A. Panaitescu & P. Kumar.* 592, 390 (2003)

Blowout from IC 1396N: The Emergence of Herbig-Haro Flows from a Cloud Core. *Bo Reipurth, Tina Armond, Alex Raga, & John Bally.* 593, L47 (2003)

A Class of Interstellar OH Masers Associated with Protostellar Outflows. *Alice L. Argon, Mark J. Reid, & Karl M. Menten.* 593, 925 (2003)

Fast Outflow of Neutral Hydrogen in the Radio Galaxy 3C 293. *R. Morganti, T. A. Oosterloo, B. H. C. Emonts, J. M. van der Hulst, & C. N. Tadhunter.* 593, L69 (2003)

Radio Imaging of Gamma-Ray Burst Jets in Nearby Supernovae. *Jonathan Granot & Abraham Loeb.* 593, L81 (2003)

The Radio Afterglow from the Giant Flare of SGR 1900+14: The Same Mechanism as Afterglows from Classic Gamma-Ray Bursts? *K. S. Cheng & X. Y. Wang.* 593, L85 (2003)

A Parsec-Scale Flow Associated with the IRAS 16547−4247 Radio Jet. *Kate J. Brooks, Guido Garay, Diego Mardones, & Leonardo Bronfman.* 594, L131 (2003)

Molecular Outflows in The Young Open Cluster IC 348. *Jochen Eislöffel, Dirk Froebrich, Thomas Stanke, & Mark J. McCaughrean.* 595, 259 (2003)

High Angular Resolution, Sensitive CS $J = 2–1$ and $J = 3–2$ Imaging of the Protostar L1551 NE: Evidence for Outflow-Triggered Star Formation? *Sozo Yokogawa, Yoshimi Kitamura, Munetake Momose, & Ryohei Kawabe.* 595, 266 (2003)

Linear Polarization Observations of Water Masers in W3 IRS 5. *Hiroshi Imai, Shinji Horiuchi, Shuji Deguchi, & Osamu Kameya.* 595, 285 (2003)

Magnetocentrifugal Launching of Jets from Accretion Disks. II. Inner Disk-driven Winds. *Ruben Krasnopolsky, Zhi-Yun Li, & Roger D. Blandford.* 595, 631 (2003)

Strong Gravitational Lensing and the Structure of Quasar Outflows. *Doron Chelouche.* 596, L43 (2003)

Relativistic Magnetohydrodynamics with Application to Gamma-Ray Burst Outflows. I. Theory and Semianalytic Trans-Alfvénic Solutions. *Nektarios Vlahakis & Arieh Königl.* 596, 1080 (2003)

Relativistic Magnetohydrodynamics with Applications to Gamma-Ray Burst Outflows. II. Semianalytic Super-Alfvénic Solutions. *Nektarios Vlahakis & Arieh Königl.* 596, 1104 (2003)

Global Asymptotic Solutions for Relativistic Magnetohydrodynamic Jets and Winds. *Jean Heyvaerts & Colin Norman.* 596, 1240 (2003)

Kinetic Energy Flux versus Poynting Flux in Magnetohydrodynamic Winds and Jets: The Intermediate Regime. *Jean Heyvaerts & Colin Norman.* 596, 1256 (2003)

Global Asymptomatic Solutions for Nonrelativistic Magnetohydrodynamic Jets and Winds. *Jean Heyvaerts & Colin Norman.* 596, 1270 (2003)

VLA and BIMA Observations toward the Exciting Source of the Massive HH 80–81 Outflow. *Y. Gómez, L. F. Rodríguez, J. M. Girart, G. Garay, & J. Martí.* 597, 414 (2003)

The Physical Parameters, Excitation, and Chemistry of the Rim, Jets, and Knots of the Planetary Nebula NGC 7009. *Denise R. Goncalves, Romano L. M. Corradi, Antonio Mampaso, & Mario Perinotto.* 597, 975 (2003)

A Failed Gamma-Ray Burst with Dirty Energetic Jets Spirited Away? New Implications for the Gamma-Ray Burst–Supernova Connection from SN 2002ap. *Tomonori Totani.* 598, 1151 (2003)

Evidence for Evolution of the Outflow Collimation in Very Young Stellar Objects. *J. M. Torrelles, N. A. Patel, G. Anglada, J. F. Gómez, P. T. P. Ho, L. Lara, A. Alberdi, J. Cantó, S. Curiel, G. Garay, & L. F. Rodríguez.* 598, L115 (2003)

NGC 2264 IRS 1: The Central Engine and Its Cavity. *K. Schreyer, B. Stecklum, H. Linz, & Th. Henning.* 599, 334 (2003)

X-Ray Emission from the Pre–Planetary Nebula Henize 3-1475. *Raghvendra Sahai, Joel H. Kastner, Adam Frank, Mark Morris, & Eric G. Blackman.* 599, L87 (2003)

ISM: KINEMATICS AND DYNAMICS

The Formation of Nuclear Rings in Barred Spiral Galaxies. *Michael W. Regan & Peter Teuben.* 582, 723 (2003)

Large-Scale Turbulence in Molecular Clouds. *Christopher M. Brunt.* 583, 280 (2003)

Structure Function Scaling in the Taurus and Perseus Molecular Cloud Complexes. *Paolo Padoan, Stanislav Boldyrev, William Langer, & Ake Nordlund.* 583, 308 (2003)

The Universality of Turbulence in the Molecular Interstellar Medium and Its Exploitation as a Distance Estimator. *Christopher M. Brunt.* 584, 293 (2003)

Scintillations and Lévy Flights through the Interstellar Medium. *Stanislav Boldyrev & Carl Gwinn.* 584, 791 (2003)

On the Spiral Structure of NGC 2915 and Dark Matter. *F. S. Masset & M. Bureau.* 586, 152 (2003)

Far Ultraviolet Spectroscopic Explorer Detection of Galactic O VI Emission in the Halo above the Perseus Arm. *Birgit Otte, W. Van Dyke Dixon, & Ravi Sankrit.* 586, L53 (2003)

Kinematical Structure of the Local Interstellar Medium: The Galactic Anticenter Hemisphere. *Ricardo Génova & John E. Beckman.* 145, 355 (2003)

The Distance to the Supernova Remnant CTB 87 and the Radial Velocity of the Perseus Arm toward $l = 75°$, Derived from H I and CO Observations. *Roland Kothes, Wolfgang Reich, Tyler Foster, & Do-Young Byun.* 588, 852 (2003)

The Spectral Correlation Function of Molecular Clouds: A Statistical Test for Theoretical Models. *Paolo Padoan, Alyssa A. Goodman, & Mika Juvela.* 588, 881 (2003)

Highly Ionized High-Velocity Gas in the Vicinity of the Galaxy. *K. R. Sembach, B. P. Wakker, B. D. Savage, P. Richter, M. Meade, J. M. Shull, E. B. Jenkins, G. Sonneborn, & H. W. Moos.* 146, 165 (2003)

The Physics of Supernova Blast Waves. I. Kinematics of DEM L71 in the Large Magellanic Cloud. *Parviz Ghavamian, Cara E. Rakowski, John P. Hughes, & T. B. Williams.* 590, 833 (2003)

Feedback from the First Supernovae in Protogalaxies: The Fate of the Generated Metals. *Keiichi Wada & Aparna Venkatesan.* 591, 38 (2003)

Probing the Edge of the Solar System: Formation of an Unstable Jet-Sheet. *Merav Opher, Paulett C. Liewer, Tamas I. Gombosi, Ward Manchester, Darren L. DeZeeuw, Igor Sokolov, & Gabor Toth.* 591, L61 (2003)

High-Resolution Imaging of CO Outflows in OMC-2 and OMC-3. *Jonathan P. Williams, R. L. Plambeck, & Mark H. Heyer.* 591, 1025 (2003)

Dynamic Cores in Hydrostatic Disguise. *Javier Ballesteros-Paredes, Ralf S. Klessen, & Enrique Vázquez-Semadeni.* 592, 188 (2003)

Multiwavelength Spectroscopy of the Bipolar Outflow from Cepheus E. *Michael D. Smith, Dirk Froebrich, & Jochen Eislöffel.* 592, 245 (2003)

Grain Acceleration by Magnetohydrodynamic Turbulence: Gyroresonance Mechanism. *Huirong Yan & A. Lazarian.* 592, L33 (2003)

High-Resolution Observations of Interstellar Ca I Absorption—Implications for Depletions and Electron Densities in Diffuse Clouds. *Daniel E. Welty, L. M. Hobbs, & Donald C. Morton.* 147, 61 (2003)

Gravitational Collapse of Filamentary Magnetized Molecular Clouds. *David A. Tilley & Ralph E. Pudritz.* 593, 426 (2003)

Small-Scale Structure of Low-Density Gas in a Dark Cloud Envelope: Kinematic Evidence for Phase Transition? *Seiichi Sakamoto & Kazuyoshi Sunada.* 594, 340 (2003)

Loops, Drips, and Walls in the Galactic Chimney GSH 277+00+36. *N. M. McClure-Griffiths, John M. Dickey, B. M. Gaensler, & A. J. Green.* 594, 833 (2003)

The High-Excitation Planetary Nebula NGC 246: Optical and Near-Ultraviolet Observations and Two-Dimensional Numerical Models. *Andrew Szentgyorgyi, John Raymond, José Franco, Eva Villaver, & Luis López-Martín.* 594, 874 (2003)

Supernova Remnant Crossing a Density Jump: A Thin-Shell Model. *Yang Chen, Fan Zhang, Rosa M. Williams, & Q. Daniel Wang.* 595, 227 (2003)

Molecular Outflows in The Young Open Cluster IC 348. *Jochen Eislöffel, Dirk Froebrich, Thomas Stanke, & Mark J. McCaughrean.* 595, 259 (2003)

Intrinsic, Observed, and Retrieved Properties of Interstellar Turbulence. *Christopher M. Brunt, Mark H. Heyer, Enrique Vázquez-Semadeni, & Bárbara Pichardo.* 595, 824 (2003)

Dual Cometary H II Regions in DR 21: Bow Shocks or Champagne Flows? *C. J. Cyganowski, M. J. Reid, V. L. Fish, & P. T. P. Ho.* 596, 344 (2003)

Interstellar Matter near the Pleiades. VI. Evidence for an Interstellar Three-Body Encounter. *Richard E. White.* 148, 487 (2003)

The Physical Parameters, Excitation, and Chemistry of the Rim, Jets, and Knots of the Planetary Nebula NGC 7009. *Denise R. Goncalves, Romano L. M. Corradi, Antonio Mampaso, & Mario Perinotto.* 597, 975 (2003)

Is Nonhelical Hydromagnetic Turbulence Peaked at Small Scales? *Nils Erlands L. Haugen, Axel Brandenburg, & Wolfgang Dobler.* 597, L141 (2003)

Magnetorotationally Driven Galactic Turbulence and the Formation of Giant Molecular Clouds. *Woong-Tae Kim, Eve C. Ostriker, & James M. Stone.* 599, 1157 (2003)

ISM: LINES AND BANDS

Observations of C_3 In Translucent Sight Lines. *Takeshi Oka, Julie A. Thorburn, Benjamin J. McCall, Scott D. Friedman, Lewis M. Hobbs, Paule Sonnentrucker, Daniel E. Welty, & Donald G. York.* 582, 823 (2003)

Infrared Absorption Spectra of Deuterated Amorphous Carbon. *V. I. Grishko & W. W. Duley.* 583, L43 (2003)

Carbon Monoxide Entrapment in Interstellar Ice Analogs. *M. P. Collings, J. W. Dever, H. J. Fraser, M. R. S. McCoustra, & D. A. Williams.* 583, 1058 (2003)

Some Diffuse Interstellar Bands Related to Interstellar C_2 Molecules. *J. A. Thorburn, L. M. Hobbs, B. J. McCall, T. Oka, D. E. Welty, S. D. Friedman, T. P. Snow, P. Sonnentrucker, & D. G. York.* 584, 339 (2003)

K3-50A: An Ultracompact H II Region Ionized by a Massive Stellar Cluster. *Yoshiko K. Okamoto, Hirokazu Kataza, Takuya Yamashita, Takashi Miyata, Shigeyuki Sako, Shinya Takubo, Mitsuhiko Honda, & Takashi Onaka.* 584, 368 (2003)

Detection of Far-Infrared Features in Star-forming Regions. *Takashi Onaka & Yoko Okada.* 585, 872 (2003)

The Effects of Ion Irradiation on the Evolution of the Carrier of the 3.4 Micron Interstellar Absoprtion Band. *V. Mennella, G. A. Baratta, A. Esposito, G. Ferini, & Y. J. Pendleton.* 587, 727 (2003)

Infrared Emission of Normal Galaxies from 2.5 to 12 Microns: *Infrared Space Observatory* Spectra, Near-Infrared Continuum, and Mid-Infrared Emission Features. *Nanyao Lu, George Helou, Michael W. Werner, Harriet L. Dinerstein, Daniel A. Dale, Nancy A. Silbermann, Sangeeta Malhotra, Charles A. Beichman, & Thomas H. Jarrett.* 588, 199 (2003)

A Test Case for the Organic Refractory Model of Interstellar Dust. *S. S. Shenoy, D. C. B. Whittet, J. E. Chiar, A. J. Adamson, W. G. Roberge, & G. E. Hassel.* 591, 962 (2003)

The Role of Polycyclic Aromatic Hydrocarbons in Ultraviolet Extinction. I. Probing Small Molecular Polycyclic Aromatic Hydrocarbons. *Geoffrey C. Clayton, Karl D. Gordon, F. Salama, L. J. Allamandola, Peter G. Martin, T. P. Snow, D. C. B. Whittet, A. N. Witt, & Michael J. Wolff.* 592, 947 (2003)

The [C II] 158 Micron Line Deficit in Ultraluminous Infrared Galaxies Revisited. *M. L. Luhman, S. Satyapal, J. Fischer, M. G. Wolfire, E. Sturm, C. C. Dudley, D. Lutz, & R. Genzel.* 594, 758 (2003)

Observations of Rotationally Resolved C_3 in Translucent Sight Lines. *Máté Ádámkovics, Geoffrey A. Blake, & Benjamin J. McCall.* 595, 235 (2003)

Kinematics of Ultracompact H II Regions Revealed: High Spatial and Spectral Resolution Mapping of the 12.8 Micron [Ne II] Line in Monoceros R2. *D. T. Jaffe, Q. Zhu, J. H. Lacy, & M. Richter.* 596, 1053 (2003)

A Near-Infrared Study of the Star-Forming Region S269. *Zhibo Jiang, Yongquiang Yao, Ji Yang, Daisuke Baba, Daisuke Kato, Mikio Kurita, Chie Nagashima, Tetsuya Nagata, Takahiro Nagayama, Yasushi Nakajima, Miki Ishii, Motohide Tamura, & Koji Sugitani.* 596, 1064 (2003)

Carbon Isotope Ratio in $^{12}CO/^{13}CO$ toward Local Molecular Clouds with Near-Infrared High-Resolution Spectroscopy of Vibrational Transition Bands. *Miwa Goto, Tomonori Usuda, Naruhisa Takato, Masa Hayashi, Seiichi Sakamoto, W. Gaessler, Yutaka Hayano, Masanori Iye, Yukiko Kamata, Tomio Kanzawa, Naoto Kobayashi, Yosuke Minowa, Ko Nedachi, Shin Oya, T.-S. Pyo, D. Saint-Jacques, Hiroshi Suto, Hideki Takami, Hiroshi Terada, & George F. Mitchell.* 598, 1038 (2003)

Spatial Separation of the 3.29 Micron Emission Feature and Associated 2 Micron Continuum in NGC 7023. *Jin H. An & K. Sellgren.* 599, 311 (2003)

ISM: MAGNETIC FIELDS

Magnetic Reconnection Triggered by the Parker Instability in the Galaxy: Two-Dimensional Numerical Magnetohydrodynamic Simulations and Application to the Origin of X-Ray Gas in the Galactic Halo. *Syuniti Tanuma, Takaaki Yokoyama, Takahiro Kudoh, & Kazunari Shibata.* 582, 215 (2003)

Flux-Tube Dynamics and a Model for the Origin of the Local Fluff. *Donald P. Cox & Louise Helenius.* 583, 205 (2003)

Fast Reconnection in a Two-Stage Process. *Fabian Heitsch & Ellen G. Zweibel.* 583, 229 (2003)

First Results from the Submillimeter Polarimeter for Antarctic Remote Observations: Evidence of Large-Scale Toroidal Magnetic Fields in the Galactic Center. *G. Novak, D. T. Chuss, T. Renbarger, G. S. Griffin, M. G. Newcomb, J. B. Peterson, R. F. Loewenstein, D. Pernic, & J. L. Dotson.* 583, L83 (2003)

Radio Polarization from the Galactic Plane in Cygnus. *B. Uyaniker, T. L. Landecker, A. D. Gray, & R. Kothes.* 585, 785 (2003)

Small-Scale Clustering in Isotropic Arrival Distribution of Ultra–High-Energy Cosmic Rays and Implications for Their Source Candidates. *Hiroyuki Yoshiguchi, Shigehiro Nagataki, Sin-ya Tsubaki, & Katsuhiko Sato.* 586, 1211 (2003)

Dynamo Action in Magnetohydrodynamics and Hall-Magnetohydrodynamics. *Pablo D. Mininni, Daniel O. Gómez, & Swadesh M. Mahajan.* 587, 472 (2003)

Rotation Measures of Compact Sources in the Canadian Galactic Plane Survey. *J. C. Brown, A. R. Taylor, & B. J. Jackel.* 145, 213 (2003)

A Coupled Dynamical and Chemical Model of Starless Cores of Magnetized Molecular Clouds. II. Chemical Differentiation. *V. I. Shematovich, D. S. Wiebe, B. M. Shustov, & Zhi-Yun Li.* 588, 894 (2003)

Magnetic Structure of a Dark Bok Globule. *Jacques P. Vallée, Jane S. Greaves, & Jason D. Fiege.* 588, 910 (2003)

The Effect of Cosmic-Ray Diffusion on the Parker Instability. *Dongsu Ryu, Jongsoo Kim, Seung Soo Hong, & T. W. Jones.* 589, 338 (2003)

Global Asymptotic Solutions for Magnetohydrodynamic Jets and Winds. *I. Okamoto.* 589, 671 (2003)

Suppression of Fast Reconnection by Magnetic Shear. *Fabian Heitsch & Ellen G. Zweibel.* 590, 291 (2003)

Magnetic Field Evolution in Bok Globules. *Sebastian Wolf, R. Launhardt, & T. Henning.* 592, 233 (2003)

Arrival Distribution of Ultra–High-Energy Cosmic Rays: Prospects for the Future. *Hiroyuki Yoshiguchi, Shigehiro Nagataki, & Katsuhiko Sato.* 592, 311 (2003)

On Large-Scale Magnetic Field Reversals in the Outer Galaxy. *J. C. Brown, A. R. Taylor, R. Wielebinski, & P. Mueller.* 592, L29 (2003)

Gravitational Collapse of Filamentary Magnetized Molecular Clouds. *David A. Tilley & Ralph E. Pudritz.* 593, 426 (2003)

Binary and Multiple Star Formation in Magnetic Clouds: Bar Growth and Fragmentation. *Fumitaka Nakamura & Zhi-Yun Li.* 594, 363 (2003)

Solar Wind Effects on the Transport of 3–10 MeV Cosmic-Ray Electrons from Solar Minimum to Solar Maximum. *S. E. S. Ferreira, M. S. Potgieter, D. M. Moeketsi, B. Heber, & H. Fichtner.* 594, 552 (2003)

Nonlinear Hydromagnetic Wave Support of a Stratified Molecular Cloud. *Takahiro Kudoh & Shantanu Basu.* 595, 842 (2003)

Interstellar Hydroxyl Masers in the Galaxy. II. Zeeman Pairs and the Galactic Magnetic Field. *Vincent L. Fish, Mark J. Reid, Alice L. Argon, & Karl M. Menten.* 596, 328 (2003)

A New Method for Calculating Arrival Distribution of Ultra–High-Energy Cosmic Rays above 10^{19} eV with Modifications by the Galactic Magnetic Field. *Hiroyuki Yoshiguchi, Shigehiro Nagataki, & Katsuhiko Sato.* 596, 1044 (2003)

Dusty Molecular Cloud Collapse in the Presence of Alfvén Waves. *D. Falceta-Goncalves, M. C. de Juli, & V. Jatenco-Pereira.* 597, 970 (2003)

Self-consistent Mean Field Theory in Weakly Ionized Media. *Nicolas Leprovost & Eun-jin Kim.* 598, L99 (2003)

Magnetic Fields in Cool Clouds within the Central 50 Parsecs of the Galaxy. *David T. Chuss, Jacqueline A. Davidson, Jessie L. Dotson, C. Darren Dowell, Roger H. Hildebrand, Giles Novak, & John E. Vaillancourt.* 599, 1116 (2003)

Magnetorotationally Driven Galactic Turbulence and the Formation of Giant Molecular Clouds. *Woong-Tae Kim, Eve C. Ostriker, & James M. Stone.* 599, 1157 (2003)

ISM: MOLECULES

Laboratory Precision Measurements of the Rotational Spectrum of $^{12}C^{17}O$ and $^{13}C^{17}O$. *Gabriele Klapper, Leonid Surin, Frank Lewen, Holger S. P. Müller, Igor Pak, & Gisbert Winnewisser.* 582, 262 (2003)

The Discovery of H_2O Maser Emission in Seven Active Galactic Nuclei and at High Velocities in the Circinus Galaxy. *L. J. Greenhill, P. T. Kondrakto, J. E. J. Lovell, T. B. H. Kuiper, J. M. Moran, D. L. Jauncey, & G. P. Baines.* 582, L11 (2003)

Side Group Addition to the Polycyclic Aromatic Hydrocarbon Coronene by Proton Irradiation in Cosmic Ice Analogs. *Max P. Bernstein, Marla H. Moore, Jamie E. Elsila, Scott A. Sandford, Louis J. Allamandola, & Richard N. Zare.* 582, L25 (2003)

CO Luminosity Functions for Far-Infrared– and *B*-Band–selected Galaxies and the First Estimate for $\Omega_{H\,I+H_2}$. *Dusan Keres, Min S. Yun, & J. S. Young.* 582, 659 (2003)

Inferring Physical Conditions in Interstellar Clouds of H_2. *Matthew K. Browning, Jason Tumlinson, & J. Michael Shull.* 582, 810 (2003)

Observations of C_3 In Translucent Sight Lines. *Takeshi Oka, Julie A. Thorburn, Benjamin J. McCall, Scott D. Friedman, Lewis M. Hobbs, Paule Sonnentrucker, Daniel E. Welty, & Donald G. York.* 582, 823 (2003)

A Survey of 557 GHz Water Vapor Emission in the NGC 1333 Molecular Cloud. *Edwin A. Bergin, Michael J. Kaufman, Gary J. Melnick, Ronald L. Snell, & John E. Howe.* 582, 830 (2003)

Large-Scale Turbulence in Molecular Clouds. *Christopher M. Brunt.* 583, 280 (2003)

Luminescence from Vacuum-Ultraviolet–irradiated Cosmic Ice Analogs and Residues. *Murthy S. Gudipati, Jason P. Dworkin, Xavier D.F. Chillier, & Louis J. Allamandola.* 583, 514 (2003)

Infrared Absorption Spectra of Deuterated Amorphous Carbon. *V. I. Grishko & W. W. Duley.* 583, L43 (2003)

An Outer Galaxy Molecular Cloud Catalog. *Christopher M. Brunt, C. R. Kerton, & Caroline Pomerleau.* 144, 47 (2003)

A High Spectral Resolution VLBI Study of the 12 GHz Methanol Masers in W3(OH): Their Submilliarcsecond Structure and Clues on Saturation. *L. Moscadelli, K. M. Menten, C. M. Walmsley, & M. J. Reid.* 583, 776 (2003)

Chemistry and Dynamics in Pre-protostellar Cores. *Jeong-Eun Lee, Neal J. Evans II, Yancy L. Shirley, & Ken'ichi Tatematsu.* 583, 789 (2003)

Carbon Monoxide Entrapment in Interstellar Ice Analogs. *M. P. Collings, J. W. Dever, H. J. Fraser, M. R. S. McCoustra, & D. A. Williams.* 583, 1058 (2003)

The Universality of Turbulence in the Molecular Interstellar Medium and Its Exploitation as a Distance Estimator. *Christopher M. Brunt.* 584, 293 (2003)

Hydrogenation and Charge States of the Polycyclic Aromatic Hydrocarbons in Diffuse Clouds. II. Results. *Valery Le Page, Theodore P. Snow, & Veronica M. Bierbaum.* 584, 316 (2003)

Comparing Gas-Phase and Grain-catalyzed H_2 Formation. *Simon C. O. Glover.* 584, 331 (2003)

Some Diffuse Interstellar Bands Related to Interstellar C_2 Molecules. *J. A. Thorburn, L. M. Hobbs, B. J. McCall, T. Oka, D. E. Welty, S. D. Friedman, T. P. Snow, P. Sonnentrucker, & D. G. York.* 584, 339 (2003)

$H^{13}CO^+$ and CH_3OH Line Observations of Prestellar Dense Cores in the TMC-1C Region. II. Internal Structure. *Shigehisa Takakuwa, Takeshi Kamazaki, Masao Saito, & Naomi Hirano.* 584, 818 (2003)

Clustered Star Formation in W75 N. *D. S. Shepherd, L. Testi, & D. P. Stark.* 584, 882 (2003)

Trans-Ethyl Methyl Ether: Assignments and Predictions up to 400 GHz for the Vibrational-Torsional Ground State. *Ulrike Fuchs, Gisbert Winnewisser, Peter Groner, Frank C. De Lucia, & Eric Herbst.* 144, 277 (2003)

Rotational Spectra of the Nitrogen-Sulfur Carbon NC_nS, $n = 1$–7. *M. C. McCarthy, A. L. Cooksy, S. Mohamed, V. D. Gordon, & P. Thaddeus.* 144, 287 (2003)

CO Depletion and Deuterium Fractionation in Prestellar Cores. *A. Bacmann, B. Lefloch, C. Ceccarelli, J. Steinacker, A. Castets, & L. Loinard.* 585, L55 (2003)

H I Narrow Self-Absorption in Dark Clouds. *D. Li & P. F. Goldsmith.* 585, 823 (2003)

The Dynamical State of Barnard 68: A Thermally Supported, Pulsating Dark Cloud. *Charles J. Lada, Edwin A. Bergin, João F. Alves, & Tracy L. Huard.* 586, 286 (2003)

Solid-Phase Formation of Interstellar Vinyl Alchohol. *R. L. Hudson & M. H. Moore.* 586, L107 (2003)

An Atlas of the Intersystem Transitions of CO. *M. Eidelsberg & F. Rostas.* 145, 89 (2003)

CO $J = 7 \rightarrow 6$ Observations of NGC 253: Cosmic-Ray–heated Warm Molecular Gas. *C. M. Bradford, T. Nikola, G. J. Stacey, A. D. Bolatto, J. M. Jackson, M. L. Savage, J. A. Davidson, & S. J. Higdon.* 586, 891 (2003)

CH, CO, and $E(B-V)$ as Molecular Gas Tracers in a Translucent Cloud. *Loris Magnani, Raymond J. Chastain, Hyekyung Clarisse Kim, Dap Hartmann, Anthony T. Truong, & Patrick Thaddeus.* 586, 1111 (2003)

Time-dependent Density Functional Theory Calculations of Large Compact Polycyclic Aromatic Hydrocarbon Cations: Implications for the Diffuse Interstellar Bands. *Jennifer L. Weisman, Timothy J. Lee, Farid Salama, & Martin Head-Gordon.* 587, 256 (2003)

Kinematical Structure of the Local Interstellar Medium: The Galactic Anticenter Hemisphere. *Ricardo Génova & John E. Beckman.* 145, 355 (2003)

Further Discoveries of ^{12}CO in Low Surface Brightness Galaxies. *K. O'Neil, E. Schinnerer, & P. Hofner.* 588, 230 (2003)

A Sensitive Very Large Array Search for Small-Scale Glycine Emission toward OMC-1. *J. M. Hollis, J. A. Pedelty, L. E. Snyder, P. R. Jewell, F. J. Lovas, Patrick Palmer, & S.-Y. Liu.* 588, 353 (2003)

CO Emission from Disks around AB Aurigae and HD 141569: Implications for Disk Structure and Planet Formation Timescales. *Sean D. Brittain, Terrence W. Rettig, Theodore Simon, Craig Kulesa, Michael A. DiSanti, & Neil Dello Russo.* 588, 535 (2003)

Precise Millimeter-Wave Laboratory Frequences for CS and $C^{34}S$. *C. A. Gottlieb, P. C. Myers, & P. Thaddeus.* 588, 655 (2003)

CO Molecular Gas in Infrared-luminous Galaxies. *Lihong Yao, E. R. Seaquist, Nario Kuno, & Loretta Dunne.* 588, 771 (2003)

A Coupled Dynamical and Chemical Model of Starless Cores of Magnetized Molecular Clouds. II. Chemical Differentiation. *V. I. Shematovich, D. S. Wiebe, B. M. Shustov, & Zhi-Yun Li.* 588, 894 (2003)

Dependence of H_2CO and CH_3OH Formation on Temperature and Thickness of H_2O-CO Ice during the Successive Hydrogenation of CO. *Naoki Watanabe, Takahiro Shiraki, & Akira Kouchi.* 588, L121 (2003)

Nonthermal Chemistry in Diffuse Clouds with Low Molecular Abundances. *J. Zsargó & S. R. Federman.* 589, 319 (2003)

A Warped Accretion Disk and Wide-Angle Outflow in the Inner Parsec of the Circinus Galaxy. *L. J. Greenhill, R. S. Booth, S. P. Ellingsen, J. R. Herrnstein, D. L. Jauncey, P. M. McCulloch, J. M. Moran, R. P. Norris, J. E. Reynolds, & A. K. Tzioumis.* 590, 162 (2003)

A Survey of Acetic Acid toward Hot Molecular Cores. *A. Remijan, L. E. Snyder, D. N. Friedel, S.-Y. Liu, & R. Y. Shah.* 590, 314 (2003)

Images of Astrophysical Masers and Their Variability in a Turbulent Medium: The 25 GHz Methanol Masers. *A. M. Sobolev, W. D. Watson, & V. A. Okorokov.* 590, 333 (2003)

Warm Molecular Hydrogen and Ionized Neon in the HH 2 Outflow. *B. LeFloch, J. Cernicharo, S. Cabrit, A. Noriega-Crespo, A. Moro-Martín, & D. Cesarsky.* 590, L41 (2003)

The Radio Spectrum of the Phenyl Radical. *R. J. McMahon, M. C. McCarthy, C. A. Gottlieb, J. B. Dudek, J. F. Stanton, & P. Thaddeus.* 590, L61 (2003)

Photodestruction of Relevant Interstellar Molecules in Ice Mixtures. *Hervé Cottin, Marla H. Moore, & Yves Bénilan.* 590, 874 (2003)

Submillimeter Wave Astronomy Satellite Mapping Observations of Water Vapor around Sagittarius B2. *David A. Neufeld, Edwin A. Bergin, Gary J. Melnick, & Paul F. Goldsmith.* 590, 882 (2003)

Two Molecular Clouds near M17. *T. L. Wilson, M. M. Hanson, & D. Muders.* 590, 895 (2003)

Interaction between the Outflow and the Core in IRAM 04191+1522. *Shigehisa Takakuwa, Nagayoshi Ohashi, & Naomi Hirano.* 590, 932 (2003)

Accurate Laboratory Wavelengths of the Vacuum Ultraviolet $A(\Upsilon' = 3) - X(\Upsilon'' = 0)$ Band of $^{12}C^{17}O$ and $^{12}C^{18}O$. *Christine Steinmann, Erich G. Rohwer, & Herbert Stafast.* 590, L123 (2003)

A Survey for H_2O Megamasers. III. Monitoring Water Vapor Masers in Active Galaxies. *J. A. Braatz, A. S. Wilson, C. Henkel, R. Gough, & M. Sinclair.* 146, 249 (2003)

Enhanced Deuterium Fractionation in Dense Interstellar Cores Resulting from Multiply Deuterated H_3^+. *Helen Roberts, Eric Herbst, & T. J. Millar.* 591, L41 (2003)

A Test Case for the Organic Refractory Model of Interstellar Dust. *S. S. Shenoy, D. C. B. Whittet, J. E. Chiar, A. J. Adamson, W. G. Roberge, & G. E. Hassel.* 591, 962 (2003)

Laboratory Infrared Spectroscopy of Cationic Polycyclic Aromatic Hydrocarbon Molecules. *Jos Oomens, A. G. G. M. Tielens, Boris G. Sartakov, Gert von Helden, & Gerard Meijer.* 591, 968 (2003)

Further Evidence for Chemical Fractionation from Ultraviolet Observations of Carbon Monoxide. *S. R. Federman, David L. Lambert, Yaron Sheffer, Jason A. Cardelli, B.-G. Andersson, Ewine F. van Dishoeck, & J. Zsargó.* 591, 986 (2003)

Analysis of Clumps in Molecular Cloud Models: Mass Spectrum, Shapes, Alignment, and Rotation. *Charles F. Gammie, Yen-Ting Lin, James M. Stone, & Eve C. Ostriker.* 592, 203 (2003)

High-Latitude Molecular Clouds in an H I Filament toward the MBM 53, 54, and 55 Complex: Existence of an H_2 Cloud with Low CO Intensity. *H. Yamamoto, T. Onishi, A. Mizuno, & Y. Fukui.* 592, 217 (2003)

Multiwavelength Spectroscopy of the Bipolar Outflow from Cepheus E. *Michael D. Smith, Dirk Froebrich, & Jochen Eislöffel.* 592, 245 (2003)

The Role of Polycyclic Aromatic Hydrocarbons in Ultraviolet Extinction. I. Probing Small Molecular Polycyclic Aromatic Hydrocarbons. *Geoffrey C. Clayton, Karl D. Gordon, F. Salama, L. J. Allamandola, Peter G. Martin, T. P. Snow, D. C. B. Whittet, A. N. Witt, & Michael J. Wolff.* 592, 947 (2003)

Detection of OH Absorption against PSR B1849+00. *Snežana Stanimirović, Joel M. Weisberg, John M. Dickey, Anton de la Fuente, Kathryn Devine, Abigail Hedden, & Stuart B. Anderson.* 592, 953 (2003)

Indications of Inflow Motions in Regions Forming Massive Stars. *Neal J. Evans II & Jingwen Wu.* 592, L79 (2003)

The Radio Spectrum of Si_3. *M. C. McCarthy & P. Thaddeus.* 592, L91 (2003)

Precise Laboratory Frequencies of the $J = 1$–0 and $J = 2$–1 Rotational Transitions of $C^{18}O$. *G. Cazzoli, C. Puzzarini, & A. V. Lapinov.* 592, L95 (2003)

The Salty Scrambled Egg: Detection of NaCl toward CRL 2688. *J. L. Highberger, K. J. Thomson, P. A. Young, D. Arnett, & L. M. Ziurys.* 593, 393 (2003)

Mechanisms for the Origin of Turbulence in Non–Star-forming Clouds: The Translucent Cloud MBM 40. *Steven N. Shore, Loris Magnani, T. N. LaRosa, & Meredith N. McCarthy.* 593, 413 (2003)

The Hot Core around the Low-Mass Protostar IRAS 16293−2422: Scoundrels Rule! *S. Cazaux, A. G. G. M. Tielens, C. Ceccarelli, A. Castets, V. Wakelam, E. Caux, B. Parise, & D. Teyssier.* 593, L51 (2003)

Interstellar Glycine. *Yi-Jehng Kuan, Steven B. Charnley, Hui-Chun Huang, Wei-Ling Tseng, & Zbigniew Kisiel.* 593, 848 (2003)

Molecular Evolution in Collapsing Prestellar Cores. II. The Effect of Grain-Surface Reactions. *Yuri Aikawa, Nagayoshi Ohashi, & Eric Herbst.* 593, 906 (2003)

First Detection of Doubly Deuterated Hydrogen Sulfide. *C. Vastel, T. G. Phillips, C. Ceccarelli, & J. Pearson.* 593, L97 (2003)

Rotational Rest Frequencies for FeN ($X\ ^2\Delta_i$) and Revised Spectroscopic Constants for FeC ($X\ ^3\Delta_i$). *P. M. Sheridan, L. M. Ziurys, & T. Hirano.* 593, L141 (2003)

Small-Scale Structure of Low-Density Gas in a Dark Cloud Envelope: Kinematic Evidence for Phase Transition? *Seiichi Sakamoto & Kazuyoshi Sunada.* 594, 340 (2003)

Mapping Observations of DNC and $HN^{13}C$ in Dark Cloud Cores. *Tomoya Hirota, Masafumi Ikeda, & Satoshi Yamamoto.* 594, 859 (2003)

Locally Aromatic Polycyclic Hydrocarbons as Potential Carriers of Infrared Emission Features. *Simon Petrie, Robert Stranger, & Walter W. Duley.* 594, 869 (2003)

Observations of Rotationally Resolved C_3 in Translucent Sight Lines. *Máté Ádámkovics, Geoffrey A. Blake, & Benjamin J. McCall.* 595, 235 (2003)

Molecular Outflows in The Young Open Cluster IC 348. *Jochen Eislöffel, Dirk Froebrich, Thomas Stanke, & Mark J. McCaughrean.* 595, 259 (2003)

Dual Cometary H II Regions in DR 21: Bow Shocks or Champagne Flows? *C. J. Cyganowski, M. J. Reid, V. L. Fish, & P. T. P. Ho.* 596, 344 (2003)

Molecular Counterparts of Ultracompact H II Regions with Extended Envelopes. *Kee-Tae Kim & Bon-Chul Koo.* 596, 362 (2003)

Measurement of the Kinetic Energy of Hydrogen Molecules Desorbing from Amorphous Water Ice. *J. E. Roser, S. Swords, G. Vidali, G. Manicò, & V. Pirronello.* 596, L55 (2003)

Laboratory Spectrum of the 1_{11}–2_{02} Rotational Transition of CH_2. *Ernest A. Michael, Frank Lewen, Gisbert Winnewisser, Hiroyuki Ozeki, Hideta Habara, & Eric Herbst.* 596, 1356 (2003)

Facile Generation and Storage of Polycyclic Aromatic Hydrocarbon Ions in Astrophysical Ices. *Murthy S. Gudipati & Louis J. Allamandola.* 596, L195 (2003)

Kinematics of the SGR B2 (N-LMH) Molecular Core. *Jan M. Hollis, J. A. Pedelty, D. A. Boboltz, S.-Y. Liu, L. E. Snyder, Patrick Palmer, F. J. Lovas, & P. R. Jewell.* 596, L235 (2003)

The Millimeter- and Submillimeter-Wave Spectrum of the Trans-Trans Conformer of Diethyl Ether ($C_2H_5OC_2H_5$). *Ivan Medvedev, Manfred Winnewisser, Frank C. De Lucia, Eric Herbst, Ewa Bialkowski–Jaworska, Oleksandr Desyatnyk, Lech Pszczolkowski, Zbigniew Kisiel, Enyi Yi, Lai Peng Leong, & Ryan P. A. Bettens.* 148, 593 (2003)

VLA and BIMA Observations toward the Exciting Source of the Massive HH 80–81 Outflow. *Y. Gómez, L. F. Rodríguez, J. M. Girart, G. Garay, & J. Martí.* 597, 414 (2003)

FUSE Measurements of Rydberg Bands of Interstellar CO between 925 and 1150 Å. *Yaron Sheffer, S. R. Federman, & B.-G. Andersson.* 597, L29 (2003)

Laboratory Submillimeter-Wave Detection of D_2H^+: A New Probe into Multiple Deuteration? *T. Hirano & T. Amano.* 597, L85 (2003)

Dusty Molecular Cloud Collapse in the Presence of Alfvén Waves. *D. Falceta-Goncalves, M. C. de Juli, & V. Jatenco-Pereira.* 597, 970 (2003)

Continuum and CO/HCO^+ Emission from the Disk around the T Tauri Star LkCa 15. *Chunhua Qi, Jacqueline E. Kessler, David W. Koerner, Anneila I. Sargent, & Geoffrey A. Blake.* 597, 986 (2003)

Dense Molecular Clumps in the Orion Bar Photon-dominated Region. *D. C. Lis & P. Schilke.* 597, L145 (2003)

Detection of Reactive Ions in the Ultracompact H II Regions Monoceros R2 and G29.96−0.02. *J. R. Rizzo, A. Fuente, A. Rodríguez-Franco, & S. García-Burillo.* 597, L153 (2003)

Apparent Sizes and Spectral Line Profiles for Spherical and Disk Masers: Solutions to the Full Equations. *W. D. Watson & H. W. Wyld.* 598, 357 (2003)

Oxirane: An Exotic Oxygenated Organic Compound in Titan? *Patrice Coll, Jean-Michel Bernard, Rafael Navarro-González, & François Raulin.* 598, 700 (2003)

Carbon Isotope Ratio in $^{12}CO/^{13}CO$ toward Local Molecular Clouds with Near-Infrared High-Resolution Spectroscopy of Vibrational Transition Bands. *Miwa Goto, Tomonori Usuda, Naruhisa Takato, Masa Hayashi, Seiichi Sakamoto, W. Gaessler, Yutaka Hayano, Masanori Iye, Yukiko Kamata, Tomio Kanzawa, Naoto Kobayashi, Yosuke Minowa, Ko Nedachi, Shin Oya, T.-S. Pyo, D. Saint-Jacques, Hiroshi Suto, Hideki Takami, Hiroshi Terada, & George F. Mitchell.* 598, 1038 (2003)

The Formaldehyde Masers in NGC 7538 and G29.96−0.02: Very Long Baseline Array, Multielement Radio-linked Interferometer Network, and Very Large Array Observations. *Ian M. Hoffman, W. M. Goss, Patrick Palmer, & A. M. S. Richards.* 598, 1061 (2003)

Giant Molecular Clouds in M33. II. High-Resolution Observations. *E. Rosolowsky, G. Engargiola, R. Plambeck, & L. Blitz.* 599, 257 (2003)

Spatial Separation of the 3.29 Micron Emission Feature and Associated 2 Micron Continuum in NGC 7023. *Jin H. An & K. Sellgren.* 599, 311 (2003)

The Mass Function of Supergiant Molecular Complexes and Implications for Forming Young Massive Star Clusters in the Antennae (NGC 4038/4039). *Christine D. Wilson, Nicholas Scoville, Suzanne C. Madden, & Vassilis Charmandaris.* 599, 1049 (2003)

Giant Molecular Clouds in M33. I. BIMA All-Disk Survey. *G. Engargiola, R. L. Plambeck, E. Rosolowsky, & L. Blitz.* 149, 343 (2003)

A CS $J = 5 \rightarrow 4$ Mapping Survey Toward High-Mass Star-Forming Cores Associated with Water Masers. *Yancy L. Shirley, Neal J. Evans II, Kaisa E. Young, Claudia Knez, & Daniel T. Jaffe.* 149, 375 (2003)

ISM: PLANETARY NEBULAE: GENERAL

Kinematics of Planetary Nebulae in M51's Tidal Debris. *Patrick R. Durrell, J. Christopher Mihos, John J. Feldmeier, George H. Jacoby, & Robin Ciardullo.* 582, 170 (2003)

On the Luminosities and Temperatures of Extended X-Ray Emission from Planetary Nebulae. *Noam Soker & Joel H. Kastner.* 583, 368 (2003)

Emission Lines of Cl II in the Optical Spectra of Gaseous Nebulae. *F. P. Keenan, L. H. Aller, K. M. Exter, S. Hyung, & D. L. Pollacco.* 584, 385 (2003)

Ram Pressure Stripping in Planetary Nebulae. *Eva Villaver, Guillermo García-Segura, & Arturo Manchado.* 585, L49 (2003)

Fuel-Supply–limited Stellar Relaxation Oscillations: Application to Multiple Rings around Asymptotic Giant Branch Stars and Planetary Nebulae. *Hugh M. Van Horn, John H. Thomas, Adam Frank, & Eric G. Blackman.* 585, 983 (2003)

Shaping Proto–Planetary and Young Planetary Nebulae with Collimated Fast Winds. *Chin-Fei Lee & Raghvendra Sahai.* 586, 319 (2003)

An Icy, Bipolar Proto–Planetary Nebula with Knotty Jets: IRAS 22036+5306. *R. Sahai, A. Zijlstra, C. Sánchez Contreras, & M. Morris.* 586, L81 (2003)

Multiple Molecular H_2 Outflows in AFGL 618. *P. Cox, P. J. Huggins, J.-P. Maillard, C. Muthu, R. Bachiller, & T. Forveille.* 586, L87 (2003)

Intracluster Planetary Nebulae in the Virgo Cluster. II. Imaging Catalog. *John J. Feldmeier, Robin Ciardullo, George H. Jacoby, & Patrick R. Durrell.* 145, 65 (2003)

Abundance Anomalies in the X-Ray Spectra of Planetary Nebulae NGC 7027 and BD +30°3639. *Holly L. Maness, Saeqa D. Vrtilek, Joel H. Kastner, & Noam Soker.* 589, 439 (2003)

Broad Hα Wings in Nebulae around Evolved Stars and in Young Planetary Nebulae. *A. Arrieta & S. Torres-Peimbert.* 147, 97 (2003)

Modeling the Transport of Polarized Radiation Due to Scattering in Spherical Dust Shells. *David A. Joiner & Chun Ming Leung.* 593, 402 (2003)

Intracluster Stellar Population Properties from *N*-Body Cosmological Simulations. I. Constraints at $z = 0$. *Nicola R. Napolitano, Maurilio Pannella, Magda Arnaboldi, Ortwin Gerhard, J. Alfonso L. Aguerri, Kenneth C. Freeman, Massimo Capaccioli, Sebastiano Ghigna, Fabio Governato, Tom Quinn, & Joachim Stadel.* 594, 172 (2003)

Very Large Telescope Echelle Spectrophotometry of the Planetary Nebula NGC 5307 and Temperature Variations. *María Teresa Ruiz, Antonio Peimbert, Manuel Peimbert, & César Esteban.* 595, 247 (2003)

Space Telescope Imaging Spectrograph Slitless Observations of Small Magellanic Cloud Planetary Nebulae: A Study on Morphology, Emission-Line Intensity, and Evolution. *Letizia Stanghellini, Richard A. Shaw, Bruce Balick, Max Mutchler, J. Chris Blades, & Eva Villaver.* 596, 997 (2003)

Post–Asymptotic Giant Branch Evolution in the Large Megellanic Cloud: A Study of the Central Stars of Planetary Nebulae. *Eva Villaver, Letizia Stanghellini, & Richard A. Shaw.* 597, 298 (2003)

ISM: PLANETARY NEBULAE: INDIVIDUAL

Name: Hewett 1

Serendipity and the Sloan Digital Sky Survey: Discovery of the Largest Known Planetary Nebula on the Sky. *Paul C. Hewett, Michael J. Irwin, Evan D. Skillman, Craig B. Foltz, Jon P. Willis, Stephen J. Warren, & Nicholas A. Walton.* 599, L37 (2003)

Name: Menzel 3

A Compact X-Ray Source and Possible X-Ray Jets within the Planetary Nebula Menzel 3. *Joel H. Kastner, Bruce Balick, Eric G. Blackman, Adam Frank, Noam Soker, Saeqa D. Vrtilek, & Jingqiang Li.* 591, L37 (2003)

NGC Number: NGC 246

The High-Excitation Planetary Nebula NGC 246: Optical and Near-Ultraviolet Observations and Two-Dimensional Numerical Models. *Andrew Szentgyorgyi, John Raymond, José Franco, Eva Villaver, & Luis López-Martín.* 594, 874 (2003)

NGC Number: NGC 5307

Very Large Telescope Echelle Spectrophotometry of the Planetary Nebula NGC 5307 and Temperature Variations. *María Teresa Ruiz, Antonio Peimbert, Manuel Peimbert, & César Esteban.* 595, 247 (2003)

NGC Number: NGC 6302

Neutral Carbon in Post–Asymptotic Giant Branch Stars and Planetary Nebulae. *Tatsuhiko I. Hasegawa & Sun Kwok.* 585, 475 (2003)

NGC Number: NGC 7009

The Physical Parameters, Excitation, and Chemistry of the Rim, Jets, and Knots of the Planetary Nebula NGC 7009. *Denise R. Goncalves, Romano L. M. Corradi, Antonio Mampaso, & Mario Perinotto.* 597, 975 (2003)

NGC Number: NGC 7027

Mid-Infrared Imaging Polarimetry of NGC 7027. *C. A. Jurgenson, R. E. Stencel, D. S. Theil, D. I. Klebe, & T. Ueta.* 582, L35 (2003)

Abundance Anomalies in the X-Ray Spectra of Planetary Nebulae NGC 7027 and BD +30°3639. *Holly L. Maness, Saeqa D. Vrtilek, Joel H. Kastner, & Noam Soker.* 589, 439 (2003)

Alphanumeric: AFGL 618

Multiple Molecular H_2 Outflows in AFGL 618. *P. Cox, P. J. Huggins, J.-P. Maillard, C. Muthu, R. Bachiller, & T. Forveille.* 586, L87 (2003)

Alphanumeric: BD +30°3639

Abundance Anomalies in the X-Ray Spectra of Planetary Nebulae NGC 7027 and BD +30°3639. *Holly L. Maness, Saeqa D. Vrtilek, Joel H. Kastner, & Noam Soker.* 589, 439 (2003)

Alphanumeric: He 3-1475

X-Ray Emission from the Pre–Planetary Nebula Henize 3-1475. *Raghvendra Sahai, Joel H. Kastner, Adam Frank, Mark Morris, & Eric G. Blackman.* 599, L87 (2003)

Alphanumeric: IC 418

Introducing EMILI: Computer-Aided Emission Line Identification. *Brian Sharpee, Robert Williams, Jack A. Baldwin, & Peter A. M. van Hoof.* 149, 155 (2003)

Alphanumeric: IRAS 21282+5050

Neutral Carbon in Post–Asymptotic Giant Branch Stars and Planetary Nebulae. *Tatsuhiko I. Hasegawa & Sun Kwok.* 585, 475 (2003)

Alphanumeric: OH 231.8+4.2

Hubble Space Telescope/NICMOS Near-Infrared Imaging of the Proto–Planetary Nebula OH 231.8+4.2. *C. A. Meakin, J. H. Bieging, W. B. Latter, J. L. Hora, & A. G. G. M. Tielens.* 585, 482 (2003)

ISM: REFLECTION NEBULAE

SPINR—a Wide-Field Ultraviolet Spectral Imaging System. *T. A. Cook, V. J. Gsell, J. Golub, & S. Chakrabarti.* 585, 1177 (2003)

The Pleiades Reflection Nebula. I. Ultraviolet, Optical, and Far-Infrared Imaging Photometry. *Steven J. Gibson & Kenneth H. Nordsieck.* 589, 347 (2003)

The Pleiades Reflection Nebula. II. Simple Model Constraints on Dust Properties and Scattering Geometry. *Steven J. Gibson & Kenneth H. Nordsieck.* 589, 362 (2003)

Neutral Hydrogen Associated with NGC 7129. *H. E. Matthews, C. R. Purton, R. S. Roger, P. E. Dewdney, & G. F. Mitchell.* 592, 176 (2003)

Spatial Separation of the 3.29 Micron Emission Feature and Associated 2 Micron Continuum in NGC 7023. *Jin H. An & K. Sellgren.* 599, 311 (2003)

ISM: STRUCTURE

From Massive Protostars to a Giant H II Region: Submillimeter Imaging of the Galactic Ministarburst W43. *F. Motte, P. Schilke, & D. C. Lis.* 582, 277 (2003)

Origins of the Highly Ionized Gas along the Line of Sight toward HD 116852. *Andrew J. Fox, Blair D. Savage, Kenneth R. Sembach, Dirk Fabian, Philipp Richter, David M. Meyer, James Lauroesch, & J. Christopher Howk.* 582, 793 (2003)

Flux-Tube Dynamics and a Model for the Origin of the Local Fluff. *Donald P. Cox & Louise Helenius.* 583, 205 (2003)

A CLEAN-based Method for Deconvolving Interstellar Pulse Broadening from Radio Pulses. *N. D. R. Bhat, J. M. Cordes, & S. Chatterjee.* 584, 782 (2003)

Scintillations and Lévy Flights through the Interstellar Medium. *Stanislav Boldyrev & Carl Gwinn.* 584, 791 (2003)

Time Dependence of the Ultraviolet Radiation Field in the Local Interstellar Medium. *Antonio Parravano, David J. Hollenbach, & Christopher F. McKee.* 584, 797 (2003)

Ram Pressure Stripping in Planetary Nebulae. *Eva Villaver, Guillermo García-Segura, & Arturo Manchado.* 585, L49 (2003)

Rapid Variability and Annual Cycles in the Characteristic Timescale of the Scintillating Source PKS 1257−326. *H. E. Bignall, D. L. Jauncey, J. E. J. Lovell, A. K. Tzioumis, L. Kedziora-Chudczer, J.-P. Macquart, S. J. Tingay, D. P. Rayner, & R. W. Clay.* 585, 653 (2003)

Radio Polarization from the Galactic Plane in Cygnus. *B. Uyaniker, T. L. Landecker, A. D. Gray, & R. Kothes.* 585, 785 (2003)

Fitting Together the H I Absorption and Emission in the Southern Galactic Plane Survey. *John M. Dickey, N. M. McClure-Griffiths, B. M. Gaensler, & A. J. Green.* 585, 801 (2003)

Ionized Gas in the First 10 Kiloparsecs of the Interstellar Galactic Halo. *J. Christopher Howk, Kenneth R. Sembach, & Blair D. Savage.* 586, 249 (2003)

Far Ultraviolet Spedtroscopic Explorer Detection of Galactic O VI Emission in the Halo above the Perseus Arm. *Birgit Otte, W. Van Dyke Dixon, & Ravi Sankrit.* 586, L53 (2003)

Optical Spectroscopy and Ionization Models of the Diffuse Ionized Gas in M33, M51/NGC 5195, and M81. *Charles G. Hoopes & René A. M. Walterbos.* 586, 902 (2003)

Highly Ionized Gas in the Galactic Halo: A *FUSE* Survey of O VI Absorption toward 22 Halo Stars. *J. Zsargó, K. R. Sembach, J. C. Howk, & B. D. Savage.* 586, 1019 (2003)

The Millennium Arecibo 21 Centimeter Absorption-Line Survey. II. Properties of the Warm and Cold Neutral Media. *Carl Heiles & T. H. Troland.* 586, 1067 (2003)

Neutral Atomic Phases of the Interstellar Medium in the Galaxy. *Mark G. Wolfire, Christopher F. McKee, David Hollenbach, & A. G. G. M. Tielens.* 587, 278 (2003)

The Millenium Arecibo 21 Centimeter Absorption-Line Survey. I. Techniques and Gaussian Fits. *Carl Heiles & T. H. Troland.* 145, 329 (2003)

Kinematical Structure of the Local Interstellar Medium: The Galactic Anticenter Hemisphere. *Ricardo Génova & John E. Beckman.* 145, 355 (2003)

The G11.11−0.12 Infrared-dark Cloud: Anomalous Dust and a Nonmagnetic Isothermal Model. *Doug Johnstone, Jason D. Fiege, R. O. Redman, P. A. Feldman, & Sean J. Carey.* 588, L37 (2003)

The Pleiades Reflection Nebula. II. Simple Model Constraints on Dust Properties and Scattering Geometry. *Steven J. Gibson & Kenneth H. Nordsieck.* 589, 362 (2003)

The *Far Ultraviolet Spectroscopic Explorer* Survey of O VI Absorption in and near the Galaxy. *B. P. Wakker, B. D. Savage, K. R. Sembach, P. Richter, M. Meade, E. B. Jenkins, J. M. Shull, T. B. Ake, W. P. Blair, W. V. Dixon, S. D. Friedman, J. C. Green, R. F. Green, J. W. Kruk, H. W. Moos, E. M. Murphy, W. R. Oegerle, D. J. Sahnow, G. Sonneborn, E. Wilkinson, & D. G. York.* 146, 1 (2003)

Circumnuclear Dust in Nearby Active and Inactive Galaxies. II. Bars, Nuclear Spirals, and the Fueling of Active Galactic Nuclei. *Paul Martini, Michael W. Regan, John S. Mulchaey, & Richard W. Pogge.* 589, 774 (2003)

A Turbulent Origin for Flocculent Spiral Structure in Galaxies. *Bruce G. Elmegreen, Debra Meloy Elmegreen, & Samuel N. Leitner.* 590, 271 (2003)

On the Origin of the Global Schmidt Law of Star Formation. *Andrey V. Kravtsov.* 590, L1 (2003)

The Impact of Ionizing Stars on the Diffuse Interstellar Medium: A Swept-Up Shell and Ionized Halo around the W4 Chimney/Superbubble. *S. Terebey, M. Fich, R. Taylor, Y. Cao, & T. Hancock.* 590, 906 (2003)

Circumnuclear Dust in Nearby Active and Inactive Galaxies. I. Data. *Paul Martini, Michael W. Regan, John S. Mulchaey, & Richard W. Pogge.* 146, 353 (2003)

Feedback from the First Supernovae in Protogalaxies: The Fate of the Generated Metals. *Keiichi Wada & Aparna Venkatesan.* 591, 38 (2003)

Variable Na I Absorption toward ρ Leonis: Biased Neutral Formation in the Diffuse Interstellar Medium? *J. T. Lauroesch & David M. Meyer.* 591, L123 (2003)

High-Latitude Molecular Clouds in an H I Filament toward the MBM 53, 54, and 55 Complex: Existence of an H_2 Cloud with Low CO Intensity. *H. Yamamoto, T. Onishi, A. Mizuno, & Y. Fukui.* 592, 217 (2003)

Statistics of Velocity from Spectral Data: Modified Velocity Centroids. *A. Lazarian & A. Esquivel.* 592, L37 (2003)

Detection of OH Absorption against PSR B1849+00. *Snežana Stanimirović, Joel M. Weisberg, John M. Dickey, Anton de la Fuente, Kathryn Devine, Abigail Hedden, & Stuart B. Anderson.* 592, 953 (2003)

On the Origin of the High-Ionization Intermediate-Velocity Gas toward HD 14434. *David C. Knauth, J. Christopher Howk, Kenneth R. Sembach, James T. Lauroesch, & David M. Meyer.* 592, 964 (2003)

A Turbulent Origin for Flocculent Spiral Structure in Galaxies. II. Observations and Models of M33. *Bruce G. Elmegreen, Samuel N. Leitner, Debra Meloy Elmegreen, & Jean-Charles Cuillandre.* 593, 333 (2003)

On the Use of Fractional Brownian Motion Simulations to Determine the Three-dimensional Statistical Properties of Interstellar Gas. *M.-A. Miville-Deschênes, F. Levrier, & E. Falgarone.* 593, 831 (2003)

Local Interstellar Matter: The Apex Cloud. *Priscilla C. Frisch.* 593, 868 (2003)

Small-Scale Structure of Low-Density Gas in a Dark Cloud Envelope: Kinematic Evidence for Phase Transition? *Seiichi Sakamoto & Kazuyoshi Sunada.* 594, 340 (2003)

Loops, Drips, and Walls in the Galactic Chimney GSH 277+00+36. *N. M. McClure-Griffiths, John M. Dickey, B. M. Gaensler, & A. J. Green.* 594, 833 (2003)

Massive Stars and the Energy Balance of the Interstellar Medium. I. The Impact of an Isolated 60 $M_\odot$ Star. *Tim Freyer, Gerhard Hensler, & Harold W. Yorke.* 594, 888 (2003)

High Angular Resolution, Sensitive CS J = 2–1 and J = 3–2 Imaging of the Protostar L1551 NE: Evidence for Outflow-Triggered Star Formation? *Sozo Yokogawa, Yoshimi Kitamura, Munetake Momose, & Ryohei Kawabe.* 595, 266 (2003)

First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Galactic Signal Contamination from Sidelobe Pickup. *C. Barnes, R. S. Hill, G. Hinshaw, L. Page, C. L. Bennett, M. Halpern, N. Jarosik, A. Kogut, M. Limon, S. S. Meyer, G. S. Tucker, E. Wollack, & E. L. Wright.* 148, 51 (2003)

First-Year *Wilkinson Microwave Anisotrophy Probe* (*WMAP*) Observations: Foreground Emission. *C. L. Bennett, R. S. Hill, G. Hinshaw, M. R. Nolta, N. Odegard, L. Page, D. N. Spergel, J. L. Weiland, E. L. Wright, M. Halpern, N. Jarosik, A. Kogut, M. Limon, S. S. Meyer, G. S. Tucker, & E. Wollack.* 148, 97 (2003)

Ordinary and Viscosity-damped Magnetohydrodynamic Turbulence. *Jungyeon Cho, A. Lazarian, & Ethan T. Vishniac.* 595, 812 (2003)

Far Ultraviolet Spectroscopic Explorer Survey of the Local Interstellar Medium within 200 Parsecs. *N. Lehner, E. B. Jenkins, C. Gry, H. W. Moos, P. Chayer, & S. Lacour.* 595, 858 (2003)

Abundances and Physical Conditions in the Interstellar Gas toward HD 185418. *Paule Sonnentrucker, Scott D. Friedman, Daniel E. Welty, Donald G. York, & Theodore P. Snow.* 596, 350 (2003)

Small-Scale Structure in the Galactic Interstellar Medium: Implications for Galaxy Cluster Studies. *Joel N. Bregman, Megan C. Novicki, Jessica E. Krick, & John S. Arabadjis.* 597, 399 (2003)

Dense Molecular Clumps in the Orion Bar Photon-dominated Region. *D. C. Lis & P. Schilke.* 597, L145 (2003)

Does Tiny-Scale Atomic Structure Exist in the Interstellar Medium? *S. Stanimirović, J. M. Weisberg, A. Hedden, K. E. Devine, & J. T. Green.* 598, L23 (2003)

Pulsar Scintillation Arcs. I. Frequency Dependence. *Alex S. Hill, Daniel R. Stinebring, Henry A. Barnor, Daniel E. Berwick, & Aaron B. Webber.* 599, 457 (2003)

A Catalog of Bright Filamentary Structures in the Interstellar Medium. *Tom Jackson, Michael Werner, & T. N. Gautier III.* 149, 365 (2003)

The Wisconsin Hα Mapper Northern Sky Survey. *L. M. Haffner, R. J. Reynolds, S. L. Tufte, G. J. Madsen, K. P. Jaehnig, & J. W. Percival.* 149, 405 (2003)

ISM: SUPERNOVA REMNANTS

Limits to the Cassiopeia A ^{44}Ti Line Flux and Constraints on the Ejecta Energy and the Compact Source. *R. E. Rothschild & R. E. Lingenfelter.* 582, 257 (2003)

The Radial Structure of Supernova Remnant N103B. *Karen T. Lewis, David N. Burrows, John P. Hughes, Patrick O. Slane, Gordon P. Garmire, & John A. Nousek.* 582, 770 (2003)

Chandra X-Ray Imaging Spectroscopy of the Young Supernova Remnant Kesteven 75. *David J. Helfand, Benjamin F. Collins, & E. V. Gotthelf.* 582, 783 (2003)

The Interaction of Supernova Remnants with Interstellar Clouds: Experiments on the Nova Laser. *Richard I. Klein, Kimberly S. Budil, Theordore S. Perry, & David R. Bach.* 583, 245 (2003)

Revealing New Physical Structures in the Supernova Remnant N63A through *Chandra* Imaging Spectroscopy. *Jessica S. Warren, John P. Hughes, & Patrick O. Slane.* 583, 260 (2003)

Thermal OH (1667/1665 MHz) Absorption and Nonthermal OH (1720 MHz) Emission toward the W28 Supernova Remnant. *F. Yusef-Zadeh, M. Wardle, & D. A. Roberts.* 583, 267 (2003)

The Sizes of OH (1720 MHz) Supernova Remnant Masers: MERLIN and Very Long Baseline Array Observations of IC 443. *I. M. Hoffman, W. M. Goss, C. L. Brogan, M. J. Claussen, & A. M. S. Richards.* 583, 272 (2003)

Precursor Plerionic Activity and High-Energy Gamma-Ray Emission in the Supranova Model of Gamma-Ray Bursts. *Susumu Inoe, Dafne Guetta, & Franco Pacini.* 583, 379 (2003)

New Constraints on the Energetics, Progenitor Mass, and Age of the Supernova Remnant G292.0+1.8 Containing PSR J1124−5916. *Marjorie Gonzalez & Samar Safi-Harb.* 583, L91 (2003)

A Supernova Remnant Collision with a Stellar Wind. *Pablo F. Velázquez, Gloria Koenigsberger, & Alejandro C. Raga.* 584, 284 (2003)

A Compact Central Object in the Supernova Remnant Kesteven 79. *F. D. Seward, P. O. Slane, R. K. Smith, & M. Sun.* 584, 414 (2003)

On the Magnetic Fields and Particle Acceleration in Cassiopeia A. *Jacco Vink & J. Martin Laming.* 584, 758 (2003)

Far-Ultraviolet Spectra of a Nonradiative Shock Wave in the Cygnus Loop. *John C. Raymond, Parviz Ghavamian, Ravi Sankrit, William P. Blair, & Salvador Curiel.* 584, 770 (2003)

OH (1720 MHz) Masers and Mixed-Morphology Supernova Remnants. *F. Yusef-Zadeh, M. Wardle, J. Rho, & M. Sakano.* 585, 319 (2003)

The SN 1006 Remnant: Optical Proper Motions, Deep Imaging, Distance, and Brightness at Maximum. *P. Frank Winkler, Gaurav Gupta, & Knox S. Long.* 585, 324 (2003)

Radio Polarization from the Galactic Plane in Cygnus. *B. Uyaniker, T. L. Landecker, A. D. Gray, & R. Kothes.* 585, 785 (2003)

X-Ray Emission from Multiphase Shock in the Large Magellanic Cloud Supernova Remnant N49. *Sangwook Park, David N. Burrows, Gordon P. Garmire, John A. Nousek, John P. Hughes, & Rosa Murphy Williams.* 586, 210 (2003)

Structure of the H I Near the Northeast Limb of the Cygnus Loop. *D. A. Leahy.* 586, 224 (2003)

Chandra CCD Imagery of the Northeast and Northwest Limbs of SN 1006. *Knox S. Long, Stephen P. Reynolds, John C. Raymond, P. Frank Winkler, Kristy K. Dyer, & Robert Petre.* 586, 1162 (2003)

Far-Ultraviolet and Hα Spectroscopy of SNR 0057−7226 in the Small Magellanic Cloud H II Region N66. *Charles W. Danforth, Ravi Sankrit, William P. Blair, J. Christopher Howk, & You-Hua Chu.* 586, 1179 (2003)

Chandra Observations of the Luminous, Oxygen-rich Supernova Remnants in the Irregular Galaxy NGC 4449. *Daniel J. Patnaude & Robert A. Fesen.* 587, 221 (2003)

The Identification of Infrared Synchrotron Radiation from Cassiopeia A. *T. J. Jones, L. Rudnick, T. DeLaney, & J. Bowden.* 587, 227 (2003)

Chandra Observations of a Nonthermal Supernova Remnant Candidate AX J1843.8−0352 and Its Surroundings. *Masaru Ueno, Aya Bamba, Katsuji Koyama, & Ken Ebisawa.* 588, 338 (2003)

XMM-Newton Observations of PSR B1823−13: An Asymmetric Synchrotron Nebula around a Vela-like Pulsar. *B. M. Gaensler, N. S. Schulz, V. M. Kaspi, M. J. Pivovaroff, & W. E. Becker.* 588, 441 (2003)

The Distance to the Supernova Remnant CTB 87 and the Radial Velocity of the Perseus Arm toward $l = 75°$. Derived from H I and CO Observations. *Roland Kothes, Wolfgang Reich, Tyler Foster, & Do-Young Byun.* 588, 852 (2003)

Optical and Far-Ultraviolet Spectroscopy of Knot D in the Vela Supernova Remnant. *Ravi Sankrit, William P. Blair, & John C. Raymond.* 589, 242 (2003)

Diffuse Hard X-Ray Sources Discovered with the *ASCA* Galactic Plane Survey. *Aya Bamba, Masaru Ueno, Katsuji Koyama, & Shigeo Yamauchi.* 589, 253 (2003)

The First Measurement of Cassiopeia A's Forward Shock Expansion Rate. *Tracey DeLaney & Lawrence Rudnick.* 589, 818 (2003)

Small-Scale Structure of the SN 1006 Shock with *Chandra* Observations. *Aya Bamba, Ryo Yamazaki, Masaru Ueno, & Katsuji Koyama.* 589, 827 (2003)

Magnetars in the Metagalaxy: An Origin for Ultra–High-Energy Cosmic Rays in the Nearby Universe. *Jonathan Arons.* 589, 871 (2003)

Discovery of Radio/X-Ray/Optical–resolved Supernova Remnants in the Center of the Andromeda Galaxy. *A. K. H. Kong, L. O. Sjouwerman, B. F. Williams, M. R. Garcia, & J. R. Dickel.* 590, L21 (2003)

Star Formation History of ω Centauri Imprinted in Elemental Abundance Patterns. *Takuji Tsujimoto & Toshikazy Shigeyama.* 590, 803 (2003)

The Physics of Supernova Blast Waves. I. Kinematics of DEM L71 in the Large Magellanic Cloud. *Parviz Ghavamian, Cara E. Rakowski, John P. Hughes, & T. B. Williams.* 590, 833 (2003)

The Physics of Supernova Remnant Blast Waves. II. Electron-Ion Equilibration in DEM L71 in the Large Magellanic Cloud. *Cara E. Rakowski, Parviz Ghavamian, & John P. Hughes.* 590, 846 (2003)

X-Ray Spectra of Young Pulsars and Their Wind Nebulae: Dependence on Spin-Down Energy Loss Rate. *E. V. Gotthelf.* 591, 361 (2003)

An X-Ray Pulsar in the Oxygen-rich Supernova Remnant G292.0+1.8. *John P. Hughes, Patrick O. Slane, Sangwook Park, Peter W. A. Roming, & David N. Burrows.* 591, L139 (2003)

Chandra Detection of the High Magnetic Field Radio Pulsar J1119−6127 in the Supernova Remnant G292.2−0.5. *Marjorie Gonzalez & Samar Safi-Harb.* 591, L143 (2003)

Near-Infrared Synchrotron Emission from Cassiopeia A. *Jeonghee Rho, Stephen P. Reynolds, William T. Reach, Tom H. Jarrett, Glenn E. Allen, & John C. Wilson.* 592, 299 (2003)

Detection of Magnesium-rich Ejecta in the Middle-aged Supernova Remnant N49B. *Sangwook Park, John P. Hughes, Patrick O. Slane, David N. Burrows, Jessica S. Warren, Gordon P. Garmire, & John A. Nousek.* 592, L41 (2003)

Chandra Detection of a Pulsar Wind Nebula Associated with Supernova Remnant 3C 396. *C. M. Olbert, J. W. Keohane, K. A. Arnaud, K. K. Dyer, S. P. Reynolds, & S. Safi-Harb.* 592, L45 (2003)

Luminous Supersoft X-Ray Sources in External Galaxies. *R. Di Stefano & A. K. H. Kong.* 592, 884 (2003)

An X-Ray Image of the Composite Supernova Remnant G16.7+0.1. *David J. Helfand, Marcel A. Agueros, & E. V. Gotthelf.* 592, 941 (2003)

Pulsar PSR B0656+14, the Monogem Ring, and the Origin of the "Knee" in the Primary Cosmic-Ray Spectrum. *S. E. Thorsett, R. A. Benjamin, Walter F. Brisken, A. Golden, & W. M. Goss.* 592, L71 (2003)

Thermal X-Ray Emission from Shocked Ejecta in Type Ia Supernova Remnants. Prospects for Explosion Mechanism Identification. *Carles Badenes, Eduardo Bravo, Kazimierz J. Borkowski, & Inmaculada Domínguez.* 593, 358 (2003)

Ejecta Detection in Middle-aged Large Magellanic Cloud Supernova Remnants 0548−70.4 and 0534−69.9. *S. P. Hendrick, K. J. Borkowski, & S. P. Reynolds.* 593, 370 (2003)

RXTE, *ROSAT*, and *ASCA* Observations of G347.3−0.5 (RX J1713.7−3946): Probing Cosmic-Ray Acceleration by a Galactic Shell-Type Supernova Remnant. *Thomas G. Pannuti, Glenn E. Allen, John C. Houck, & Steven J. Sturner.* 593, 377 (2003)

Cassiopeia A and Its Clumpy Presupernova Wind. *Roger A. Chevalier & Jeffrey Oishi.* 593, L23 (2003)

X-Ray Observations of the Compact Central Object in Supernova Remnant G347.3−0.5. *J. S. Lazendic, P. O. Slane, B. M. Gaensler, P. P. Plucinsky, J. P. Hughes, D. K. Galloway, & F. Crawford.* 593, L27 (2003)

The Proper Motion, Age, and Initial Spin Period of PSR J0538+2817 in S147. *M. Kramer, A. G. Lyne, G. Hobbs, O. Löhmer, P. Carr, C. Jordan, & A. Wolszczan.* 593, L31 (2003)

Nascent Starbursts in Synchrotron-deficient Galaxies with Hot Dust. *H. Roussel, G. Helou, R. Beck, J. J. Condon, A. Bosma, K. Matthews, & T. H. Jarrett.* 593, 733 (2003)

Hubble Space Telescope Observations of High-Velocity Lyα and Hα Emission from Supernova Remnant 1987A: The Structure and Development of the Reverse Shock. *Eli Michael, Richard McCray, Roger Chevalier, Alexei V. Filippenko, Peter Lundqvist, Peter Challis, Ben Sugerman, Stephen Lawrence, C. S. J. Pun, Peter Garnavich, Robert Kirshner, Arlin Crotts, Claes Fransson, Weidong Li, Nino Panagia, Mark Phillips, Brian Schmidt, George Sonneborn, Nicholas Suntzeff, Lifan Wang, & J. Craig Wheeler.* 593, 809 (2003)

Supernova Reverse Shocks: SiC Growth and Isotopic Composition. *Ethan A.-N. Deneault, Donald D. Clayton, & Alexander Heger.* 594, 312 (2003)

A Multifrequency Radio Study of Supernova Remnant G292.0+1.8 and Its Pulsar Wind Nebula. *B. M. Gaensler & B. J. Wallace.* 594, 326 (2003)

Untwisting the Tornado: X-Ray Imaging and Spectroscopy of G357.7−0.1. *B. M. Gaensler, J. K. J. Fogel, P. O. Slane, J. M. Miller, R. Wijnands, S. S. Eikenberry, & W. H. G. Lewin.* 594, L35 (2003)

Discovery of a New Pulsar Wind Nebula in the Large Magellanic Cloud. *B. M. Gaensler, S. P. Hendrick, S. P. Reynolds, & K. J. Borkowski.* 594, L111 (2003)

Supernova Remnant Crossing a Density Jump: A Thin-Shell Model. *Yang Chen, Fan Zhang, Rosa M. Williams, & Q. Daniel Wang.* 595, 227 (2003)

Observation of TeV Gamma Rays from the Crab Nebula with Milagro Using a New Background Rejection Technique. *R. Atkins, W. Benbow, D. Berley, E. Blaufuss, J. Bussons, D. G. Coyne, R. S. Delay, T. DeYoung, B. L. Dingus, D. E. Dorfan, R. W. Ellsworth, A. Falcone, L. Fleysher, R. Fleysher, G. Gisler, M. M. Gonzalez, J. A. Goodman, T. J. Haines, E. Hays, C. M. Hoffman, L. A. Kelley, R. W. Laird, J. McCullough, J. E. McEnery, R. S. Miller, A. I. Mincer, M. F. Morales, P. Nemethy, D. Noyes,*

J. M. Ryan, F. W. Samuelson, M. Schneider, B. Shen, A. Shoup, G. Sinnis, A. J. Smith, G. W. Sullivan, O. T. Tumer, K. Wang, M. Wascko, D. A. Williams, S. Westerhoff, M. E. Wilson, X. Xu, & G. B. Yodh. 595, 803 (2003)

GRB 021004: A Possible Shell Nebula around a Wolf-Rayet Star Gamma-Ray Burst Progenitor. *N. Mirabal, J. P. Halpern, Ryan Chornock, Alexei V. Filippenko, D. M. Terndrup, E. Armstrong, J. Kemp, J. R. Thorstensen, M. Tavarez, & C. Espaillat.* 595, 935 (2003)

Supernova Remnant Candidates in the 30 Doradus Nebula. *J. S. Lazendic, J. R. Dickel, & P. A. Jones.* 596, 287 (2003)

A Kinsip between the EGRET Supernova Remnants and Sagittarius A East. *Marco Fatuzzo & Fulvio Melia.* 596, 1035 (2003)

Where Was the Iron Synthesized in Cassiopeia A? *Una Hwang & J. Martin Laming.* 597, 362 (2003)

SN 1993J VLBI. III. The Evolution of the Radio Shell. *M. F. Bietenholz, N. Bartel, & N. P. Rupen.* 597, 374 (2003)

Cold Dust in Kepler's Supernova Remnant. *H. L. Morgan, L. Dunne, S. A. Eales, R. J. Ivison, & M. G. Edmunds.* 597, L33 (2003)

Detection of the High-Energy Cosmic Rays from the Monogem Ring. *A. Chilingarian, H. Martirosia, & G. Gharagyozyan.* 597, L129 (2003)

The Origin of the Galactic Center Nonthermal Radio Filaments: Young Stellar Clusters. *F. Yusef-Zadeh.* 598, 325 (2003)

Gamma-Ray Spectra and Variability of the Crab Nebula Emission Observed by BATSE. *J. C. Ling & Wm. A. Wheaton.* 598, 334 (2003)

Optical Polarization Observations of NGC 6231: Evidence for a Past Supernova Fingerprint. *Carlos Feinstein, Ruben Martinez, M. Marcela Vergne, Gustavo Baume, & Ruben Vazquez.* 598, 349 (2003)

The Expansion of G11.2−0.3, a Radio Composite Supernova Remnant. *Cindy Tam & Mallory S. E. Roberts.* 598, L27 (2003)

0103−72.6: A New Oxygen-rich Supernova Remnant in the Small Magellanic Cloud. *Sangwook Park, John P. Hughes, David N. Burrows, Patrick O. Slane, John A. Nousek, & Gordon P. Garmire.* 598, L95 (2003)

KUIPER BELT

The Kuiper Belt as a Resonant Cavity. *William R. Ward.* 584, L39 (2003)

Occultation Searches for Kuiper Belt Objects. *Asantha Cooray & Alison J. Farmer.* 587, L125 (2003)

Detections of OH toward the Extreme Carbon Star IRC +10216. *K. E. Saavik Ford, David A. Neufeld, Paul F. Goldsmith, & Gary J. Melnick.* 589, 430 (2003)

Kuiper Belt Object Sizes and Distances from Occultation Observations. *Asantha Cooray.* 589, L97 (2003)

A Search for Small Kuiper Belt Objects by Stellar Occultations. *F. Roques, M. Moncuquet, N. Lavillonière, M. Auvergne, M. Chevreton, F. Colas, & J. Lecacheux.* 594, L63 (2003)

The Secular Evolution of the Primordial Kuiper Belt. *Joseph M. Hahn.* 595, 531 (2003)

Resonant Structure in the Kuiper Disk: An Asymmetric Plutino Disk. *Elizabeth K. Holmes, Stanley F. Dermott, Bo Å. S. Gustafson, & Keith Grogan.* 597, 1211 (2003)

Color Patterns in the Kuiper Belt: A Possible Primordial Origin. *S. C. Tegler, W. Romanishin, & G. J. Consolmagno, S.J.* 599, L49 (2003)

LINE: FORMATION

Breit-Pauli R-Matrix Calculation for Electron Impact Collision Strengths and Rates of O VI. *S. S. Tayal.* 582, 550 (2003)

Improved Estimate of the Magnetic Field in a Prominence. *A. Lopez-Ariste & R. Casini.* 582, L51 (2003)

The *ASCA* X-Ray Spectrum of Arp 102B and Evaluation of Simple Models for Its Associated, Metastable Fe II Absorber. *Michael Eracleous, Jules P. Halpern, & Jane C. Charlton.* 582, 633 (2003)

Resolving the Effects of Resonant X-Ray Line Scattering in Centaurus X-3 with *Chandra*. *Patrick S. Wojdowski, Duane A. Liedahl, Masao Sako, Steven M. Kahn, & Frederik Paerels.* 582, 959 (2003)

Indirect X-Ray Line-Formation Processes in Iron L-Shell Ions. *M. F. Gu.* 582, 1241 (2003)

Precursor Plerionic Activity and High-Energy Gamma-Ray Emission in the Supranova Model of Gamma-Ray Bursts. *Susumu Inoe, Dafne Guetta, & Franco Pacini.* 583, 379 (2003)

Solid-Phase Formation of Interstellar Vinyl Alchohol. *R. L. Hudson & M. H. Moore.* 586, L107 (2003)

Predicted Fe II Emission-Line Strengths from Active Galactic Nuclei. *T. A. A. Sigut & Anil K. Pradhan.* 145, 15 (2003)

Determination of Primordial Metallicity and Mixing in the Type II-P Supernova 1993W. *E. Baron, Peter E. Nugent, David Branch, Peter H. Hauschildt, M. Turatto, & E. Cappellaro.* 586, 1199 (2003)

Oscillator Strengths of Allowed and Intercombination Lines in P II. *S. S. Tayal.* 146, 459 (2003)

Non-LTE Model Atmospheres for Late-Type Stars. II. Restricted Non-LTE Calculations for a Solar-like Atmosphere. *Carlos Allende Prieto, Ivan Hubeny, & David L. Lambert.* 591, 1192 (2003)

XMM-Newton Observation of Broad Iron Kα Emission from Seyfert 1.9 Galaxy MCG −5-23-16. *G. C. Dewangan, R. E. Griffiths, & N. J. Schurch.* 592, 52 (2003)

Assessment of the Fluorescence and Auger Database used in Plasma Modeling. *T. W. Gorczyca, C. N. Kodituwakku, K. T. Korista, O. Zatsarinny, N. R. Badnell, E. Behar, M. H. Chen, & D. W. Savin.* 592, 636 (2003)

The Contribution of Particle Impact to the Production of Fe Kα Emission from Accreting Black Holes. *D. R. Ballantyne & A. C. Fabian.* 592, 1089 (2003)

The Accuracy of the Center-of-Gravity Method for Measuring Velocity and Magnetic Field Strength in the Solar Photosphere. *H. Uitenbroek.* 592, 1225 (2003)

Revisited Abundance Diagnostics in Quasars: Fe II/Mg II Ratios. *E. Verner, F. Bruhweiler, D. Verner, S. Johansson, & T. Gull.* 592, L59 (2003)

Recombination X-Ray Line Formation of Iron L-Shell Ions in Low Temperature Plasmas. *M. F. Gu.* 593, 1249 (2003)

Carbon-Nitrogen-Oxygen Line Radiation and the X-Ray Bowen Fluorescence Mechanism in Optically Thick, Highly Ionized Media. *Masao Sako.* 594, 1108 (2003)

Fe XXV and Fe XXVI Diagnostics of the Black Hole and Accretion Disk in Active Galaxies: *Chandra* Time-resolved Grating Spectroscopy of NGC 7314. *Tahir Yaqoob, Ian M. George, Timothy R. Kallman, Urmila Padmanabhan, Kimberly A. Weaver, & T. Jane Turner.* 596, 85 (2003)

Atmospheric Models of Red Giants with Massive-Scale Non–Local Thermodynamic Equilibrium *C. I. Short & P. H. Hauschildt.* 596, 501 (2003)

Constraints from *Infrared Space Observatory* Data on the Velocity Law and Clumpiness of WR 136. *R. Ignace, M. F. Quigley, & J. P. Cassinelli.* 596, 538 (2003)

Electron Collision Excitation Rates for O I Using the B-Spline R-Matrix Approach. *O. Zatsarinny & S. S. Tayal.* 148, 575 (2003)

Molecular Hydrogen Excitation in Ultraluminous Infrared Galaxies. *R. I. Davies, A. Sternberg, M. Lehnert, & L. E. Tacconi-Garman.* 597, 907 (2003)

Electron-Ion Recombination Rate Coefficients and Photoionization Cross Sections for Astrophysically Abundant Elements. VII. Relativistic Calculations for O VI and O VII for Ultraviolet and X-Ray Modeling. *Sultana N. Nahar & Anil K. Pradhan.* 149, 237 (2003)

LINE FORMATION

Anomalous Ultraviolet Line Flux Ratios in the Cataclysmic variables 1RXS J232953.9+062814, CE 315, BZ Ursae Majoris, and EY Cygni observed with the *Hubble Space Telescope* Space Telescope Imaging Spectrograph. *Boris T. Gänsicke, Paula Szkody, Domitilla de Martino, Klaus Beuermann, Knox S. Long, Edward M. Sion, Christian Knigge, Tom Marsh, & Ivan Hubeny.* 594, 443 (2003)

LINE: IDENTIFICATION

Metal Abundances and Kinematics of Quasar Absorbers. II. Absorption Systems toward Q0347−3819 and APM BR J0307−4945. *S. A. Levshakov, I. I. Agafonova, S. D'Odorico, A. M. Wolfe, & M. Dessauges-Zavadsky.* 582, 596 (2003)

FeH Absorption in the Near-Infared Spectra of Late M and L Dwarfs. *Michael Cushing, John T. Rayner, Sumner P. Davis, & William D. Vacca.* 582, 1066 (2003)

First Detection of Vibrationally Excited HNC in Space. *Peter Schilke, Claudio Comito, & Sven Thorwirth.* 582, L101 (2003)

High-Resolution 3 Micron Spectroscopy of Molecules in the Mesosphere and Troposphere of Titan. *T. R. Geballe, S. J. Kim, K. S. Noll, & C. A. Griffith.* 583, L39 (2003)

Rotational Spectra of the Nitrogen-Sulfur Carbon NC_nS, n = 1–7. *M. C. McCarthy, A. L. Cooksy, S. Mohamed, V. D. Gordon, & P. Thaddeus.* 144, 287 (2003)

Detection of HCN Direct l-Type Transitions Probing Hot Molecular Gas in the Proto–Planetary Nebula CRL 618. *S. Thorwirth, F. Wyrowski, P. Schilke,*

K. M. Menten, S. Brünken, H. S. P. Müller, & G. Winnewisser. 586, 338 (2003)

Predicted Fe II Emission-Line Strengths from Active Galactic Nuclei. *T. A. A. Sigut & Anil K. Pradhan.* 145, 15 (2003)

[Fe IV] Emission in Ionized Nebulae. *Monica Rodriguez.* 590, 296 (2003)

Discrete X-Ray Signatures of a Photoionized Plasma above the Accretion Disk of the Neutron Star EXO 0748−676. *M. A. Jimenez-Garate, N. S. Schulz, & H. L. Marshall.* 590, 432 (2003)

Emission-Line Spectra of Ar IX–Ar XVI in the Soft X-Ray Region 20–50 Å. *J. K. Lepson, P. Beiersdorfer, E. Behar, & S. M. Kahn.* 590, 604 (2003)

The Radio Spectrum of the Phenyl Radical. *R. J. McMahon, M. C. McCarthy, C. A. Gottlieb, J. B. Dudek, J. F. Stanton, & P. Thaddeus.* 590, L61 (2003)

Gamma-Ray Bursts as X-Ray Depth Gauges of the Universe. *P. Mészáros & M. J. Rees.* 591, L91 (2003)

The Radio Spectrum of Si_3. *M. C. McCarthy & P. Thaddeus.* 592, L91 (2003)

Interstellar Glycine. *Yi-Jehng Kuan, Steven B. Charnley, Hui-Chun Huang, Wei-Ling Tseng, & Zbigniew Kisiel.* 593, 848 (2003)

Rotational Rest Frequencies for FeN ($X\ ^2\Delta_i$) and Revised Spectroscopic Constants for FeC ($X\ ^3\Delta_i$). *P. M. Sheridan, L. M. Ziurys, & T. Hirano.* 593, L141 (2003)

Line Intensities and Molecular Opacities of the FeH $F\ ^4\Delta_i$–$X\ ^4\Delta_i$ Transition. *M. Dulick, C. W. Bauschlicher, Jr., Adam Burrows, C. M. Sharp, R. S. Ram, & Peter Bernath.* 594, 651 (2003)

New Identifications of Mn VII and Fe VIII Lines Belonging to Transitions of the Type $3p^6 4p$–$3p^6 4d$ and $3p^5 3d^2$–$3p^6 4d$. *J. O. Ekberg & U. Feldman.* 595, 517 (2003)

New Identifications of Mn IV and Fe VII Vacuum Ultraviolet Lines. *J. O. Ekberg & U. Feldman.* 148, 567 (2003)

Introducing EMILI: Computer-Aided Emission Line Identification. *Brian Sharpee, Robert Williams, Jack A. Baldwin, & Peter A. M. van Hoof.* 149, 155 (2003)

Modeling the Ne IX Triplet Spectral Region of Capella with the *Chandra* and *XMM-Newton* Gratings. *Jan-Uwe Ness, Nancy S. Brickhouse, Jeremy J. Drake, & David P. Huenemoerder.* 598, 1277 (2003)

LINE IDENTIFICATIONS

Solid-Phase Formation of Interstellar Vinyl Alchohol. *R. L. Hudson & M. H. Moore.* 586, L107 (2003)

LINE: PROFILES

The X-Ray Spectrum of the Seyfert 1 Galaxy Markarian 766: Dusty Warm Absorber or Relativistic Emission Lines? *K. O. Mason, G. Branduardi-Raymont, P. M. Ogle, M. J. Page, E. M. Puchnarewicz, E. Behar, F. A. Córdova, S. Davis, L. Maraschi, I. M. McHardy, P. T. O'Brien, W. C. Priedhorsky, & T. P. Sasseen.* 582, 95 (2003)

Improved Estimate of the Magnetic Field in a Prominence. *A. Lopez-Ariste & R. Casini.* 582, L51 (2003)

Dynamics of the Lyα and C IV Emitting Gas in 3C 273. *Stéphane Paltani & Marc Türler.* 583, 659 (2003)

Carbon Monoxide Entrapment in Interstellar Ice Analogs. *M. P. Collings, J. W. Dever, H. J. Fraser, M. R. S. McCoustra, & D. A. Williams.* 583, 1058 (2003)

Polarization of Photospheric Lines from Turbulent Dynamo Simulations. *J. Sánchez Almeida, T. Emonet, & F. Cattaneo.* 585, 536 (2003)

A *Far Ultraviolet Spectroscopic Explorer* Survey of Coronal Forbidden Lines in Late-Type Stars. *Seth Redfield, Thomas R. Ayres, Jeffrey L. Linsky, Thomas B. Ake, A. K. Dupree, Richard D. Robinson, & Peter R. Young.* 585, 993 (2003)

Physical Conditions in the Proto–Planetary Nebula CRL 618 Derived from Observations of Vibrationally Excited HC_3N. *F. Wyrowski, P. Schilke, S. Thorwirth, K. M. Menten, & G. Winnewisser.* 586, 344 (2003)

Far Ultraviolet Spectroscopic Explorer Snapshot Survey of O VI Variability in the Winds of 66 OB-Type Stars. *N. Lehner, A. W. Fullerton, D. Massa, K. R. Sembach, & J. Zsargó.* 589, 526 (2003)

The *Reuven Ramaty High Energy Solar Spectroscopic Imager* Observation of the 1809 keV Line from Galactic ^{26}Al. *D. M. Smith.* 589, L55 (2003)

Natural Coronagraphics Observations of the Eclipsing T Tauri System KH 15D: Evidence of Accretion and Bipolar Outflow in a Weak-Line T Tauri Star. *Catrina M. Hamilton, William Herbst, Reinhard Mundt, Coryn A. L. Bailer-Jones, & Christopher M. Johns-Krull.* 591, L45 (2003)

X-Ray Emission-Line Profile Modeling of O Stars: Fitting a Spherically Symmetric Analytic Wind-Shock Model to the *Chandra* Spectrum of ζ Puppis. *Roban H. Kramer, David H. Cohen, & Stanley P. Owocki.* 592, 532 (2003)

Magnetic Fields in the Quiet Sun: Observational Discrepancies and Unresolved Structure. *H. Socas-Navarro & J. Sánchez Almeida.* 593, 581 (2003)

High-Resolution Spectroscopy of Gamma-Ray Lines from the X-Class Solar Flare of 2002 July 23. *D. M. Smith, G. H. Share, R. J. Murphy, R. A. Schwartz, A. Y. Shih, & R. P. Lin.* 595, L81 (2003)

Fe XXV and Fe XXVI Diagnostics of the Black Hole and Accretion Disk in Active Galaxies: *Chandra* Time-resolved Grating Spectroscopy of NGC 7314. *Tahir Yaqoob, Ian M. George, Timothy R. Kallman, Urmila Padmanabhan, Kimberly A. Weaver, & T. Jane Turner.* 596, 85 (2003)

Testing the Binary Black Hole Paradigm through the Fe Kα Line Profile: Application to 3C 273. *Diego F. Torres, Gustavo E. Romero, Xavier Barcons, & Youjun Lu.* 596, L31 (2003)

How Well Can We Infer the Properties of the Solar Acoustic Sources? *Stuart M. Jefferies, Giuseppe Severino, Pier-Francesco Moretti, Maurizio Oliviero, & Cynthia Giebink.* 596, L117 (2003)

Detection of a Fully Resolved Compton Shoulder of the Iron Kα Line in the *Chandra* X-Ray Spectrum of GX 301-2. *Shin Watanabe, Masao Sako, Manabu Ishida, Yoshitaka Ishisaki, Steve M. Kahn, Takayoshi Kohmura, Umeyo Morita, Fumiaki Nagase, Frederik Paerels, & Tadayuki Takahashi.* 597, L37 (2003)

Apparent Sizes and Spectral Line Profiles for Spherical and Disk Masers: Solutions to the Full Equations. *W. D. Watson & H. W. Wyld.* 598, 357 (2003)

Far Ultraviolet Spectroscopic Explorer Observation of the Ultramassive White Dwarf PG 1658+441. *Jean Dupuis, Pierre Chayer, Stéphane Vennes, Nicole F. Allard, & Guillaume Hébrard.* 598, 486 (2003)

Hα and Hard X-Ray Observations of a Two-Ribbon Flare Associated with a Filament Eruption. *M. D. Ding, Q. R. Chen, J. P. Li, & P. F. Chen.* 598, 683 (2003)

Does Tiny-Scale Atomic Structure Exist in the Interstellar Medium? *S. Stanimirović, J. M. Weisberg, A. Hedden, K. E. Devine, & J. T. Green.* 598, L23 (2003)

Magnetic Maps of Prominences from Full Stokes Analysis of the He I D3 Line. *R. Casini, A. López Ariste, S. Tomczyk, & B. W. Lites.* 598, L67 (2003)

Evolution of the Nuclear Accretion Disk Emission in NGC 1097: Getting Closer to the Black Hole. *Thaisa Storchi-Bergmann, Rodrigo Nemmen da Silva, Michael Eracleous, Jules P. Halpern, Andrew S. Wilson, Alexei V. Filippenko, Maria Teresa Ruiz, R. Chris Smith, & Neil M. Nagar.* 598, 956 (2003)

The Line Emission Region in III Zw 2: Kinematics and Variability. *L. Č. Popović, E. G. Mediavilla, E. Bon, N. Stanić, & A. Kubičela.* 599, 185 (2003)

LINE PROFILES

High-Resolution Observations of Interstellar Ca I Absorption—Implications for Depletions and Electron Densities in Diffuse Clouds. *Daniel E. Welty, L. M. Hobbs, & Donald C. Morton.* 147, 61 (2003)

Broad Hα Wings in Nebulae around Evolved Stars and in Young Planetary Nebulae. *A. Arrieta & S. Torres-Peimbert.* 147, 97 (2003)

MAGNETIC FIELDS

Stellar Outflows Driven by Magnetized Wide-Angle Winds. *T. A. Gardiner, A. Frank, & L. Hartmann.* 582, 269 (2003)

Voyager 1 and *2* Observations of Magnetic Fields and Associated Cosmic-Ray Variations from 2000 through 2001: 60–87 AU. *L. F. Burlaga, N. F. Ness, F. B. McDonald, J. D. Richardson, & C. Wang.* 582, 540 (2003)

Probing Intracluster Magnetic Fields with Cosmic Microwave Background Polarization. *Hiroshi Ohno, Masahiro Takada, Klaus Dolag, Matthias Bartelmann, & Naoshi Sugiyama.* 584, 599 (2003)

On the Magnetic Fields and Particle Acceleration in Cassiopeia A. *Jacco Vink & J. Martin Laming.* 584, 758 (2003)

Role of the Hall Current in Magnetohydrodynamic Dynamos. *Pablo D. Mininni, Daniel O. Gómez, & Swadesh M. Mahajan.* 584, 1120 (2003)

Doubly Helical Coronal Ejections from Dynamos and Their Role in Sustaining the Solar Cycle. *Eric G. Blackman & Axel Brandenburg.* 584, L99 (2003)

Equation of State and Opacities for Hydrogen Atmospheres of Neutron Stars with Strong Magnetic Fields. *Alexander Y. Potekhin & Gilles Chabrier.* 585, 955 (2003)

Nonaxisymmetric Instabilities of a Toroidal Magnetic Field in a Rotating Sphere. *Keke Zhang, Xinhao Liao, & Gerald Schubert.* 585, 1124 (2003)

Large-Scale Magnetic Field Fluctuations and Development of the 1999–2000 Global Merged Interaction Region: 1–60 AU. *L. F. Burlaga, C. Wang, J. D. Richardson, & N. F. Ness.* 585, 1158 (2003)

Lepton Acceleration by Relativistic Collisionless Magnetic Reconnection. *D. A. Larrabee, R. V. E. Lovelace, & M. M. Romanova.* 586, 72 (2003)

The Long-Term Evolution of AR 7978: Testing Coronal Heating Models. *P. Démoulin, L. van Driel-Gesztelyi, C. H. Mandrini, J. A. Klimchuk, & L. Harra.* 586, 592 (2003)

Fast Dynamo Action for a Family of Parametrized Flows. *S. E. M. Tanner & D. W. Hughes.* 586, 685 (2003)

Chandra Temperature Map of A754 and Constraints on Thermal Conduction. *M. Markevitch, P. Mazzotta, A. Vikhlinin, D. Burke, Y. Butt, L. David, H. Donnelly, W. R. Forman, D. Harris, D.-W. Kim, S. Virani, & J. Vrtilek.* 586, L19 (2003)

Flaring X-Ray Emission from HST-1, a Knot in the M87 Jet. *D. E. Harris, J. A. Biretta, W. Junor, E. S. Perlman, W. B. Sparks, & A. S. Wilson.* 586, L41 (2003)

The Identification of Infrared Synchrotron Radiation from Cassiopeia A. *T. J. Jones, L. Rudnick, T. DeLaney, & J. Bowden.* 587, 227 (2003)

Dynamo Action in Magnetohydrodynamics and Hall-Magnetohydrodynamics. *Pablo D. Mininni, Daniel O. Gómez, & Swadesh M. Mahajan.* 587, 472 (2003)

Cosmic-Ray History and Its Implications for Galactic Magnetic Fields. *Ellen G. Zweibel.* 587, 625 (2003)

Lowering Infrared Cluster Magnetic Field Strengths: The Radio Galaxy Contributions. *Lawrence Rudnick & Katherine M. Blundell.* 588, 143 (2003)

Magnetohydrodynamic Simulations of Accretion to a Star in the "Propeller" Regime. *M. M. Romanova, O. D. Toropina, Yu. M. Toropin, & R. V. E. Lovelace.* 588, 400 (2003)

Transfer of Polarized Radiation in Strongly Magnetized Plasmas and Thermal Emission from Magnetars: Effect of Vacuum Polarization. *Dong Lai & Wynn C. G. Ho.* 588, 962 (2003)

Dynamics of Relativistic Reconnection. *Maxim Lyutikov & Dmitri Uzdensky.* 589, 893 (2003)

Correlations on Arcsecond Scales between Chromospheric and Transition Region Emission in Active Regions. *B. De Pontieu, T. Tarbell, & R. Erdélyi.* 590, 502 (2003)

Electrodynamics of an Outer Gap Accelerator: Formation of a Soft Power-Law Spectrum between 100 MeV and 3 GeV. *Kouichi Hirotani, Alice K. Harding, & Shinpei Shibata.* 591, 334 (2003)

Warping of Accretion Disks with Magnetically Driven Outflows: A Possible Origin for Jet Precession. *Dong Lai.* 591, L119 (2003)

Magnetic Field Evolution in Bok Globules. *Sebastian Wolf, R. Launhardt, & T. Henning.* 592, 233 (2003)

Geometrically Thin Disk Accreting into a Black Hole. *N. Afshordi & B. Paczyński.* 592, 354 (2003)

Magnetic Inhibition of Accretion and Observability of Isolated Old Neutron Stars. *O. D. Toropina, M. M. Romanova, Yu. M. Toropin, & R. V. E. Lovelace.* 593, 472 (2003)

Diagnostic Signatures of Radio and Hard X-Ray Emission on Particle Acceleration Processes in the Coma Cluster. *Ping-Hung Kuo, Chorng-Yuan Hwang, & Wing-Huen Ip.* 594, 732 (2003)

Magnetic Coupling of a Rotating Black Hole with Its Surrounding Accretion Disk. *Ding-Xiong Wang, Ren-Yi Ma, Wei-Hua Lei, & Guo-Zheng Yao.* 595, 109 (2003)

High-Energy Neutrinos from Magnetars. *Bing Zhang, Z. G. Dai, P. Mészáros, E. Waxman, & A. K. Harding.* 595, 346 (2003)

Intensity Oscillations in the Upper Transition Region above Active Region Plage. *B. De Pontieu, R. Erdélyi, & A. G. de Wijn.* 595, L63 (2003)

Ballooning Modes in Thin Accretion Disks: Limits for Their Excitation. *B. Coppi & E. A. Keyes.* 595, 1000 (2003)

Three-Dimensional Simulations of Disk Accretion to an Inclined Dipole. I. Magnetospheric Flows at Different Θ. *M. M. Romanova, G. V. Ustyugova, A. V. Koldoba, J. V. Wick, & R. V. E. Lovelace.* 595, 1009 (2003)

Interpenetrating Plasma Shells: Near-Equipartition Magnetic Field Generation and Nonthermal Particle Acceleration. *L. O. Silva, R. A. Fonseca, J. W. Tonge, J. M. Dawson, W. B. Mori, & M. V. Medvedev.* 596, L121 (2003)

On Intrinsic Magnetic Moments in Black Hole Candidates. *Stanley L. Robertson & Darryl J. Leiter.* 596, L203 (2003)

The High Angular Resolution Measurement of Ion and Neutral Spectra as a Probe of the Magnetic Field Structure in DR 21 (OH). *Shih-Ping Lai, T. Velusamy, & W. D. Langer.* 596, L239 (2003)

Are the Faraday Rotating Magnetic Fields Local to Intracluster Radio Galaxies? *Torsten A. Ensslin, Corina Vogt, T. E. Clarke, & Greg B. Taylor.* 597, 870 (2003)

Is Nonhelical Hydromagnetic Turbulence Peaked at Small Scales? *Nils Erlands L. Haugen, Axel Brandenburg, & Wolfgang Dobler.* 597, L141 (2003)

Trapping of Solar Energetic Particles by the Small-Scale Topology of Solar Wind Turbulence. *D. Ruffolo, W. H. Matthaeus, & P. Chuychai.* 597, L169 (2003)

Interferometric Mapping of Magnetic Fields in Star-Forming Regions. III. Dust and CO Polarization in DR 21(OH). *Shih-Ping Lai, José M. Girart, & Richard M. Crutcher.* 598, 392 (2003)

A Viscoelastic Theory of Turbulent Fluid Permeated with Fibril Magnetic Fields. *D. W. Longcope, T. C. B. McLeish, & G. H. Fisher.* 599, 661 (2003)

Spontaneous Generation of the Magnetic Field and Suppression of the Heat Conduction in Cold Fronts. *Nobuhiro Okabe & Makoto Hattori.* 599, 964 (2003)

Atmospheres and Spectra of Strongly Magnetized Neutron Stars. III. Partially Ionized Hydrogen Models. *Wynn C. G. Ho, Dong Lai, Alexander Y. Potekhin, & Gilles Chabrier.* 599, 1293 (2003)

Solar Seismic Models and the Neutrino Predictions. *S. Couvidat, S. Turck-Chièze, & A. G. Kosovichev.* 599, 1434 (2003)

Cosmological Magnetic Field Generation by the Weibel Instability. *R. Schlickeiser & P. K. Shukla.* 599, L57 (2003)

Month-Timescale Optical Variability in the M87 Jet. *Eric S. Perlman, D. E. Harris, John A. Biretta, William B. Sparks, & F. Duccio Macchetto.* 599, L65 (2003)

MAGNETOHYDRODYNAMICS: MHD

Magnetic Reconnection Triggered by the Parker Instability in the Galaxy: Two-Dimensional Numerical Magnetohydrodynamic Simulations and Application to the Origin of X-Ray Gas in the Galactic Halo. *Syuniti Tanuma, Takaaki Yokoyama, Takahiro Kudoh, & Kazunari Shibata.* 582, 215 (2003)

Nonlinear Effects in Models of the Galaxy. I. Midplane Stellar Orbits in the Presence of Three-Dimensional Spiral Arms. *Bárbara Pichardo, Marco Martos, Edmundo Moreno, & Julia Espresate.* 582, 230 (2003)

Stellar Outflows Driven by Magnetized Wide-Angle Winds. *T. A. Gardiner, A. Frank, & L. Hartmann.* 582, 269 (2003)

Three-Dimensional Simulations of Jets from Keplerian Disks: Self-Regulatory Stability. *Rachid Ouyed, David A. Clarke, & Ralph E. Pudritz.* 582, 292 (2003)

Formation of Minor-Ion Charge States in the Fast Solar Wind: Roles of Differential Flow Speeds of Ions of the Same Element. *Y. Chen, R. Esser, & Y. Hu.* 582, 467 (2003)

A Coupled Model for the Emergence of Active Region Magnetic Flux into the Solar Corona. *W. P. Abbett & G. H. Fisher.* 582, 475 (2003)

Magnetic Pinching of Hyperbolic Flux Tubes. I. Basic Estimations. *V. S. Titov, K. Galsgaard, & T. Neukirch.* 582, 1172 (2003)

Clamshell and Tipping Instabilities in a Two-dimensional Magnetohydrodynamic Tachocline. *Paul S. Cally, Mausumi Dikpati, & Peter A. Gilman.* 582, 1190 (2003)

The Dynamic Evolution of Twisted Magnetic Flux Tubes in a Three-dimensional Convecting Flow. I. Uniformly Buoyant Horizontal Tubes. *Y. Fan, W. P. Abbett, & G. H. Fisher.* 582, 1206 (2003)

Imbalanced Weak Magnetohydrodynamic Turbulence. *Yoram Lithwick & Peter Goldreich.* 582, 1220 (2003)

Flux-Tube Dynamics and a Model for the Origin of the Local Fluff. *Donald P. Cox & Louise Helenius.* 583, 205 (2003)

Fast Reconnection in a Two-Stage Process. *Fabian Heitsch & Ellen G. Zweibel.* 583, 229 (2003)

Short-Period Magnetic Fluctuations in *Advanced Composition Explorer* Solar Wind Data: Evidence for Anticorrelation with Alfvén Speed. *D. J. Mullan, C. W. Smith, N. F. Ness, & R. M. Skoug.* 583, 496 (2003)

Force-free Waves and Black Hole Magnetospheric Causality. *Brian Punsly.* 583, 842 (2003)

Magnetic Flux Emergence into the Solar Corona. III. The Role of Magnetic Helicity Conservation. *M. Zhang & B. C. Low.* 584, 479 (2003)

Storage and Equilibrium of Toroidal Magnetic Fields in the Solar Tacholine: A Comparison between MHD-Shallow-Water and Full MHD Approaches. *Matthias Rempel & Mausumi Dikpati.* 584, 524 (2003)

The Magnetorotational Instability in Core-Collapse Supernova Explosions. *Shizuka Akiyama, J. Craig Wheeler, David L. Meier, & Itamar Lichtenstadt.* 584, 954 (2003)

Formation of a Sporadic Plasma Jet from a Disrupting Magnetic Flux Tube. *J. I. Sakai, K. Nishi, & I. V. Sokolov.* 584, 1095 (2003)

Role of the Hall Current in Magnetohydrodynamic Dynamos. *Pablo D. Mininni, Daniel O. Gómez, & Swadesh M. Mahajan.* 584, 1120 (2003)

Numerical Simulations of Mass Outflows Driven from Accretion Disks by Radiation and Magnetic Forces. *Daniel Proga.* 585, 406 (2003)

Global Three-dimensional Magnetohydrodynamic Simulations of Black Hole Accretion Disks: X-Ray Flares in the Plunging Region. *Mami Machida & Ryoji Matsumoto.* 585, 429 (2003)

Hα, Extreme-Ultraviolet, and Microwave Observations of the 2000 March 22 Solar Flare and Spontaneous Magnetic Reconnection. *Jeongwoo Lee, Peter T. Gallagher, Dale E. Gary, Gelu M. Nita, G. S. Choe, Su-Chan Bong, & Hong Sik Yun.* 585, 524 (2003)

Polarization of Photospheric Lines from Turbulent Dynamo Simulations. *J. Sánchez Almeida, T. Emonet, & F. Cattaneo.* 585, 536 (2003)

Local Magnetohydrodynamic Models of Layered Accretion Disks. *Timothy Fleming & James M. Stone.* 585, 908 (2003)

General Relativistic Magnetohydrodynamics for the Numerical Construction of Dynamical Spacetimes. *Thomas W. Baumgarte & Stuart L. Shapiro.* 585, 921 (2003)

Collapse of a Magnetized Star to a Black Hole. *Thomas W. Baumgarte & Stuart L. Shapiro.* 585, 930 (2003)

Coronal Mass Ejection: Initiation, Magnetic Helicity, and Flux Ropes. I. Boundary Motion–driven Evolution. *T. Amari, J. F. Luciani, J. J. Aly, Z. Mikic, & J. Linker.* 585, 1073 (2003)

Kink and Longitudinal Oscillations in the Magnetic Network on the Sun: Nonlinear Effects and Mode Transformation. *S. S. Hasan, W. Kalkofen, A. A. van Ballegooijen, & P. Ulmschneider.* 585, 1138 (2003)

Lepton Acceleration by Relativistic Collisionless Magnetic Reconnection. *D. A. Larrabee, R. V. E. Lovelace, & M. M. Romanova.* 586, 72 (2003)

Interchange Method in Compressible Magnetized Couette Flow: Magnetorotational and Magnetoconvective Instabilities. *Dimitris M. Christodoulou, John Contopoulos, & Demosthenes Kazanas.* 586, 372 (2003)

Injection of Magnetic Energy and Magnetic Helicity into the Solar Atmosphere by an Emerging Magnetic Flux Tube. *T. Magara & D. W. Longcope.* 586, 630 (2003)

Fast Dynamo Action for a Family of Parametrized Flows. *S. E. M. Tanner & D. W. Hughes.* 586, 685 (2003)

A Local One-Zone Model of Magnetohydrodynamic Turbulence in Dwarf Nova Disks. *Takayoshi Sano & James M. Stone.* 586, 1297 (2003)

Petschek-like Reconnection with Current-driven Anomalous Resistivity and Its Application to Solar Flares. *Dmitri A. Uzdensky.* 587, 450 (2003)

Dynamo Action in Magnetohydrodynamics and Hall-Magnetohydrodynamics. *Pablo D. Mininni, Daniel O. Gómez, & Swadesh M. Mahajan.* 587, 472 (2003)

Cosmic-Ray History and Its Implications for Galactic Magnetic Fields. *Ellen G. Zweibel.* 587, 625 (2003)

Observational Evidence for Mode Coupling in the Chromospheric Network. *R. T. James McAteer, Peter T. Gallagher, David R. Williams, Mihalis Mathioudakis, D. Shaun Bloomfield, Kenneth J. H. Phillips, & Francis P. Keenan.* 587, 806 (2003)

Models of Three-dimensional Flux Ropes. *Joachim Birn, Terry G. Forbes, & Karl Schindler.* 588, 578 (2003)

Magnetoacoustic Waves in Sunspots. *E. V. Khomenko, M. Collados, & L. R. Bellot Rubio.* 588, 606 (2003)

Magnetic Helicity Injection by Horizontal Flows in the Quiet Sun. I. Mutual-Helicity Flux. *B. T. Welsch & D. W. Longcope.* 588, 620 (2003)

On the Formation of Magnetic Structures by the Combined Action of Velocity Shear and Magnetic Boynancy. *Kelly S. Cline, Nicholas H. Brummell, & Fausto Cattaneo.* 588, 630 (2003)

Gravity Wave–driven Flows in the Solar Tachocline. II. Stationary Flows. *Eun-jin Kim & K. B. MacGregor.* 588, 645 (2003)

A Three-dimensional Flux Rope Model for Coronal Mass Ejections Based on a Loss of Equilibrium. *Ilia I. Roussev, Terry G. Forbes, Tamas I. Gombosi, Igor V. Sokolov, Darren L. DeZeeuw, & Joachim Birn.* 588, L45 (2003)

Large Mixing Angle Oscillations as a Probe of the Deep Solar Interior. *C. Burgess, N. S. Dzhalilov, M. Maltoni, T. I. Rashba, V. B. Semikoz, M. A. Tórtola, & J. W. F. Valle.* 588, L65 (2003)

A Coupled Dynamical and Chemical Model of Starless Cores of Magnetized Molecular Clouds. II. Chemical Differentiation. *V. I. Shematovich, D. S. Wiebe, B. M. Shustov, & Zhi-Yun Li.* 588, 894 (2003)

The Effect of Cosmic-Ray Diffusion on the Parker Instability. *Dongsu Ryu, Jongsoo Kim, Seung Soo Hong, & T. W. Jones.* 589, 338 (2003)

Magnetic Star-Disk Coupling in Classical T Tauri Systems. *Manfred Küker, Thomas Henning, & Günther Rüdiger.* 589, 397 (2003)

HARM: A Numerical Scheme for General Relativistic Magnetohydrodynamics. *Charles F. Gammie, Jonathan C. McKinney, & Gábor Tóth.* 589, 444 (2003)

A Numerical Method for General Relativistic Magnetohydrodynamics. *Jean-Pierre De Villiers & John F. Hawley.* 589, 458 (2003)

Gap Formation by Planets in Turbulent Protostellar Disks. *Wayne F. Winters, Steven A. Balbus, & John F. Hawley.* 589, 543 (2003)

Solar Wind Speed and Temperature outside 10 AU and the Termination Shock. *Y. C. Whang, L. F. Burlaga, Y.-M. Wang, & N. R. Sheeley, Jr.* 589, 635 (2003)

A Morphological Study of Helical Coronal Magnetic Structures. *B. C. Low & M. A. Berger.* 589, 644 (2003)

Global Asymptotic Solutions for Magnetohydrodynamic Jets and Winds. *I. Okamoto.* 589, 671 (2003)

Time-dependent Ionization in Dynamic Solar and Stellar Atmospheres. I. Methods. *W. Rammacher & P. Ulmschneider.* 589, 988 (2003)

Two-dimensional Magnetohydrodynamic Models of the Solar Corona: Mass Loss from the Streamer Belt. *Eirik Endeve, Egil Leer, & Thomas E. Holzer.* 589, 1040 (2003)

Thermal Conduction in Magnetized Turbulent Gas. *Jungyeon Cho, A. Lazarian, Albert Honein, Bernard Knaepen, Stavros Kassinos, & Parviz Moin.* 589, L77 (2003)

The Emergence of a Twisted Magnetic Flux Tube into a Preexisting Coronal Arcade. *Y. Fan & S. E. Gibson.* 589, L105 (2003)

Suppression of Fast Reconnection by Magnetic Shear. *Fabian Heitsch & Ellen G. Zweibel.* 590, 291 (2003)

Toward an Empirical Theory of Pulsar Emission. VIII. Subbeam Circulation and the Polarization-Modal Structure of Conal Beams. *Joanna M. Rankin & R. Ramachandran.* 590, 411 (2003)

Correlations on Arcsecond Scales between Chromospheric and Transition Region Emission in Active Regions. *B. De Pontieu, T. Tarbell, & R. Erdélyi.* 590, 502 (2003)

Evolution of Magnetic Fields in Corotating Interaction Regions from 1 to 95 AU: Order to Chaos. *L. F. Burlaga, C. Wang, J. D. Richardson, & N. F. Ness.* 590, 554 (2003)

Fast Magnetic Reconnection via Jets and Current Microsheets. *P. G. Watson & I. J. D. Craig.* 590, L57 (2003)

Spectral Properties of Compressible Magnetohydrodynamic Turbulence from Numerical Simulations. *Jason G. Verstuto, Eve C. Ostriker, & James M. Stone.* 590, 858 (2003)

Locating the Launching Region of T Tauri Winds: The Case of DG Tauri. *Jeffrey M. Anderson, Zhi-Yun Li, Ruben Krasnopolsky, & Roger D. Blandford.* 590, L107 (2003)

Photoelectric Heating and [C II] Cooling in Translucent Clouds: Results for Cloud Models Based on Simulations of Compressible Magnetohydrodynamic Turbulence. *M. Juvela, P. Padoan, & R. Jimenez.* 591, 258 (2003)

Rayleigh-Taylor Gravity Waves and Quasi-periodic Oscillation Phenomena in X-Ray Binaries. *Lev Titarchuk.* 591, 354 (2003)

Dissipation in Poynting-Flux–dominated Flows: The σ-Problem of the Crab Pulsar Wind. *J. G. Kirk & O. Skjaeraasen.* 591, 366 (2003)

Probing the Edge of the Solar System: Formation of an Unstable Jet-Sheet. *Merav Opher, Paulett C. Liewer, Tamas I. Gombosi, Ward Manchester, Darren L. DeZeeuw, Igor Sokolov, & Gabor Toth.* 591, L61 (2003)

Warping of Accretion Disks with Magnetically Driven Outflows: A Possible Origin for Jet Precession. *Dong Lai.* 591, L119 (2003)

Analysis of Clumps in Molecular Cloud Models: Mass Spectrum, Shapes, Alignment, and Rotation. *Charles F. Gammie, Yen-Ting Lin, James M. Stone, & Eve C. Ostriker.* 592, 203 (2003)

Relativistic Acceleration of Magnetically Driven Jets. *Akira Tomimatsu & Masaaki Takahashi.* 592, 321 (2003)

Numerical Simulations of Astrophysical Jets from Keplerian Disks with Periodic Ejection. *B. F. Vitorino, V. Jatenco-Pereira, & R. Opher.* 592, 332 (2003)

Grain Acceleration by Magnetohydrodynamic Turbulence: Gyroresonance Mechanism. *Huirong Yan & A. Lazarian.* 592, L33 (2003)

Statistics of Velocity from Spectral Data: Modified Velocity Centroids. *A. Lazarian & A. Esquivel.* 592, L37 (2003)

Accretion of Low Angular Momentum Material onto Black Holes: Two-dimensional Magnetohydrodynamic Case. *Daniel Proga & Mitchell C. Begelman.* 592, 767 (2003)

Three-dimensional Magnetohydrodynamic Simulations of Radiatively Inefficient Accretion Flows. *Igor V. Igumenshchev, Ramesh Narayan, & Marek A. Abramowicz.* 592, 1042 (2003)

Global General Relativistic Magnetohydrodynamic Simulations of Accretion Tori. *Jean-Pierre De Villiers & John F. Hawley.* 592, 1060 (2003)

Viscosity-driven Winds from Magnetized Accretion Disks. *Daizo Maruta & Osamu Kaburaki.* 593, 85 (2003)

Gravitational Collapse of Filamentary Magnetized Molecular Clouds. *David A. Tilley & Ralph E. Pudritz.* 593, 426 (2003)

Local Three-dimensional Simulations of Magnetorotational Instability in Radiation-dominated Accretion Disks. *N. J. Turner, J. M. Stone, J. H. Krolik, & T. Sano.* 593, 992 (2003)

Role of Magnetic Flux Distribution in Coronal Energy Storage. *Richard Wolfson.* 593, 1208 (2003)

Magnetohydrodynamic Numerical Simulations of Solar X-Ray Jets Based on the Magnetic Reconnection Model That Includes Chromospheric Evaporation. *Takehiro Miyagoshi & Takaaki Yokoyama.* 593, L133 (2003)

Binary and Multiple Star Formation in Magnetic Clouds: Bar Growth and Fragmentation. *Fumitaka Nakamura & Zhi-Yun Li.* 594, 363 (2003)

Alfvénic Turbulence in the Extended Solar Corona: Kinetic Effects and Proton Heating. *S. R. Cranmer & A. A. van Ballegooijen.* 594, 573 (2003)

Numerical Study of Compressible Magnetohydrodynamic Turbulence in Two Dimensions. *Hyesook Lee, Dongsu Ryu, Jongsoo Kim, T. W. Jones, & Dinshaw Balsara.* 594, 627 (2003)

Neutron-rich Hydromagnetic Outflows in Gamma-Ray Burst Sources. *Nektarios Vlahakis, Fang Peng, & Arieh Königl.* 594, L23 (2003)

The Mass of a Solar Quiescent Prominence. *B. C. Low, B. Fong, & Y. Fan.* 594, 1060 (2003)

Linear Polarization in Gamma-Ray Bursts: The Case for an Ordered Magnetic Field. *Jonathan Granot & Arieh Königl.* 594, L83 (2003)

Toward a Reconnection Model for Solar Flare Statistics. *M. S. Wheatland & I. J. D. Craig.* 595, 458 (2003)

Gradient Particle Magnetohydrodynamics: A Lagrangian Particle Code for Astrophysical Magnetohydrodynamics. *Jason L. Maron & Gregory G. Howes.* 595, 564 (2003)

A Three-dimensional Model of the Solar Wind Incorporating Solar Magnetogram Observations. *I. I. Roussev, T. I. Gombosi, I. V. Sokolov, M. Velli, W. Manchester IV, D. L. DeZeeuw, P. Liewer, G. Tóth, & J. Luhmann.* 595, L57 (2003)

Magnetocentrifugal Launching of Jets from Accretion Disks. II. Inner Disk-driven Winds. *Ruben Krasnopolsky, Zhi-Yun Li, & Roger D. Blandford.* 595, 631 (2003)

Ordinary and Viscosity-damped Magnetohydrodynamic Turbulence. *Jungyeon Cho, A. Lazarian, & Ethan T. Vishniac.* 595, 812 (2003)

Intrinsic, Observed, and Retrieved Properties of Interstellar Turbulence. *Christopher M. Brunt, Mark H. Heyer, Enrique Vázquez-Semadeni, & Bárbara Pichardo.* 595, 824 (2003)

Nonlinear Hydromagnetic Wave Support of a Stratified Molecular Cloud. *Takahiro Kudoh & Shantanu Basu.* 595, 842 (2003)

Ballooning Modes in Thin Accretion Disks: Limits for Their Excitation. *B. Coppi & E. A. Keyes.* 595, 1000 (2003)

Coronal Mass Ejection: Initiation, Magnetic Helicity, and Flux Ropes. II. Turbulent Diffusion–driven Evolution. *T. Amari, J. F. Luciani, J. J. Aly, Z. Mikic, & J. Linker.* 595, 1231 (2003)

Three-Dimensional Reconnection of Untwisted Magnetic Flux Tubes. *M. G. Linton & E. R. Priest.* 595, 1259 (2003)

Black Hole Accretion Disks On The Edge. *Kristen Menou.* 596, 414 (2003)

Local Radiative Hydrodynamic and Magnetohydrodynamic Instabilities in Optically Thick Media. *Omer Blaes & Aristotle Socrates.* 596, 509 (2003)

Magnetohydrodynamic Shock Heating of the Solar Corona. *J. A. Orta, M. A. Huerta, & G. C. Boynton.* 596, 646 (2003)

Coronal Plume Heating and Kinetic Dissipation of Kinetic Alfvén Waves. *D. J. Wu & C. Fang.* 596, 656 (2003)

Stability Analysis of Tachocline Latitudinal Differential Rotation and Coexisting Toroidal Band Using a Shallow-Water Model. *Mausumi Dikpati, Peter A. Gilman, & Matthias Rempel.* 596, 680 (2003)

The Most Probable Cause for the High Gamma-Ray Polarization in GRB 021206. *Jonathan Granot.* 596, L17 (2003)

Relativistic Magnetohydrodynamics with Application to Gamma-Ray Burst Outflows. I. Theory and Semianalytic Trans-Alfvénic Solutions. *Nektarios Vlahakis & Arieh Königl.* 596, 1080 (2003)

Relativistic Magnetohydrodynamics with Applications to Gamma-Ray Burst Outflows. II. Semianalytic Super-Alfvénic Solutions. *Nektarios Vlahakis & Arieh Königl.* 596, 1104 (2003)

Transition from Collisionless to Collisional Magnetorotational Instability. *Prateek Sharma, Gregory W. Hammett, & Eliot Quataert.* 596, 1121 (2003)

Global Asymptotic Solutions for Relativistic Magnetohydrodynamic Jets and Winds. *Jean Heyvaerts & Colin Norman.* 596, 1240 (2003)

Kinetic Energy Flux versus Poynting Flux in Magnetohydrodynamic Winds and Jets: The Intermediate Regime. *Jean Heyvaerts & Colin Norman.* 596, 1256 (2003)

Global Asymptomatic Solutions for Nonrelativistic Magnetohydrodynamic Jets and Winds. *Jean Heyvaerts & Colin Norman.* 596, 1270 (2003)

Flux Rope Acceleration and Enhanced Magnetic Reconnection Rate. *C. Z. Cheng, Y. Ren, G. S. Choe, & Y.-J. Moon.* 596, 1341 (2003)

The Fate of Nonradiative Magnetized Accretion Flows: Magnetically Frustrated Convection. *Ue-Li Pen, Christopher D. Matzner, & Shingkwong Wong.* 596, L207 (2003)

Detection of a Taylor-like Plasma Relaxation Process in the Sun. *Dibyendu Nandy, Michael Hahn, Richard C. Canfield, & Dana W. Longcope.* 597, L73 (2003)

Test Particle Acceleration in Three-dimensional Magnetohydrodynamic Turbulence. *P. Dmitruk, W. H. Matthaeus, N. Seenu, & M. R. Brown.* 597, L81 (2003)

Polarization of Prompt Gamma-Ray Burst Emission: Evidence for Electromagnetically Dominated Outflow. *M. Lyutikov, V. I. Pariev, & R. D. Blandford.* 597, 998 (2003)

Low-Frequency Waves and Turbulence in an Open Magnetic Region: Timescales and Heating Efficiency. *Pablo Dmitruk & William H. Matthaeus.* 597, 1097 (2003)

Is Nonhelical Hydromagnetic Turbulence Peaked at Small Scales? *Nils Erlands L. Haugen, Axel Brandenburg, & Wolfgang Dobler.* 597, L141 (2003)

On the Axisymmetric Force-free Pulsar Magnetosphere. *Dmitri A. Uzdensky.* 598, 446 (2003)

The Origin of Jovian Planets in Protostellar Disks: The Role of Dead Zones. *Soko Matsumura & Ralph E. Pudritz.* 598, 645 (2003)

Binary Reconnection and the Heating of the Solar Corona. *E. R. Priest, D. W. Longcope, & V. S. Titov.* 598, 667 (2003)

The Effect of Proton Temperature Anisotropy on the Solar Minimum Corona and Wind. *Alberto M. Vásquez, Adrian A. van Ballegooijen, & John C. Raymond.* 598, 1361 (2003)

Self-consistent Mean Field Theory in Weakly Ionized Media. *Nicolas Leprovost & Eun-jin Kim.* 598, L99 (2003)

Collapse of Magnetized Singular Isothermal Toroids. I. The Nonrotating Case. *Anthony Allen, Frank H. Shu, & Zhi-Yun Li.* 599, 351 (2003)

Collapse of Magnetized Singular Isothermal Toroids. II. Rotation and Magnetic Braking. *Anthony Allen, Zhi-Yun Li, & Frank H. Shu.* 599, 363 (2003)

Waves in the Magnetized Solar Atmosphere. II. Waves from Localized Sources in Magnetic Flux Concentrations. *T. J. Bogdan, M. Carlsson, V. Hansteen, A. McMurray, C. S. Rosenthal, M. Johnson, S. Petty-Powell, E. J. Zita, R. F. Stein, S. W. McIntosh, & Å. Nordlund.* 599, 626 (2003)

A Viscoelastic Theory of Turbulent Fluid Permeated with Fibril Magnetic Fields. *D. W. Longcope, T. C. B. McLeish, & G. H. Fisher.* 599, 661 (2003)

Anisotropic Turbulence in Two-dimensional Electrom Magnetohydrodynamics. *S. Dastgeer & G. P. Zank.* 599, 715 (2003)

Axisymmetric Magnetohydrodynamic Simulations of the Collapsar Model for Gamma-Ray Bursts. *Daniel Proga, Andrew I. MacFadyen, Philip J. Armitage, & Mitchell C. Begelman.* 599, L5 (2003)

Magnetorotationally Driven Galactic Turbulence and the Formation of Giant Molecular Clouds. *Woong-Tae Kim, Eve C. Ostriker, & James M. Stone.* 599, 1157 (2003)

Magnetically Driven Accretion Flows in the Kerr Metric. I. Models and Overall Structure. *Jean-Pierre De Villiers, John F. Hawley, & Julian H. Krolik.* 599, 1238 (2003)

Magnetic Braking and Viscous Damping of Differential Rotation in Cylindrical Stars. *James N. Cook, Stuart L. Shapiro, & Branson C. Stephens.* 599, 1272 (2003)

Particle Acceleration by Slow Modes in Strong Compressible Magnetohydrodynamic Turbulence, with Application to Solar Flares. *Benjamin D. G. Chandran.* 599, 1426 (2003)

Dynamo Action Driven by Shear and Magnetic Buoyancy. *Kelly S. Cline, Nicholas H. Brummell, & Fausto Cattaneo.* 599, 1449 (2003)

A Free, Fast, Simple, and Efficient Total Variation Diminishing Magnetohydrodynamic Code. *Ue-Li Pen, Phil Arras, & ShingKwong Wong.* 149, 447 (2003)

MASERS

The Discovery of H_2O Maser Emission in Seven Active Galactic Nuclei and at High Velocities in the Circinus Galaxy. *L. J. Greenhill, P. T. Kondrakto, J. E. J. Lovell, T. B. H. Kuiper, J. M. Moran, D. L. Jauncey, & G. P. Baines.* 582, L11 (2003)

The Sizes of OH (1720 MHz) Supernova Remnant Masers: MERLIN and Very Long Baseline Array Observations of IC 443. *I. M. Hoffman, W. M. Goss, C. L. Brogan, M. J. Claussen, & A. M. S. Richards.* 583, 272 (2003)

Detection of a Second, Strong Submillimeter HCN Laser Line toward Carbon Stars. *Peter Schilke & Karl M. Menten.* 583, 446 (2003)

Water Maser Survey toward Low-Mass Young Stellar Objects in the Northern Sky with the Nobeyama 45 Meter Telescope and the Very Large Array. *Ray S. Furuya, Yoshimi Kitamura, Alwyn Wooten, Mark J. Claussen, & Ryohei Kawabe.* 144, 71 (2003)

A High Spectral Resolution VLBI Study of the 12 GHz Methanol Masers in W3(OH): Their Submilliarcsecond Structure and Clues on Saturation. *L. Moscadelli, K. M. Menten, C. M. Walmsley, & M. J. Reid.* 583, 776 (2003)

Expansion of the R4 H_2O Maser Arc near Cepheus A HW2. *J. F. Gallimore, R. J. Cool, M. D. Thornley, & J. McMullin.* 586, 306 (2003)

The Position of Sagittarius A*. II. Accurate Positions and Proper Motions of Stellar SiO Masers near the Galactic Center. *M. J. Reid, K. M. Menten, R. Genzel, T. Ott, R. Schödel, & A. Eckart.* 587, 208 (2003)

A Polarization Survey of SiO Maser Variability in Evolved Stars. *J. Glenn, P. R. Jewell, R. Fourre, & L. Miaja.* 588, 478 (2003)

Observations of Water Masers and Radio Continuum Emission in AFGL 2591. *Miguel A. Trinidad, Salvador Curiel, Jorge Cantó, Paola D'Alessio, Luis F. Rodríguez, José M. Torrelles, José F. Gómez, Nimesh Patel, & Paul T. P. Ho.* 589, 386 (2003)

The Flaring H_2O Megamaser and Conpact Radio Source in Markarian 348. *A. B. Peck, C. Henkel, J. S. Ulvestad, A. Brunthaler, H. Falcke, M. Elitzur, K. M. Menten, & J. F. Gallimore.* 590, 149 (2003)

A Warped Accretion Disk and Wide-Angle Outflow in the Inner Parsec of the Circinus Galaxy. *L. J. Greenhill, R. S. Booth, S. P. Ellingsen, J. R. Herrnstein, D. L. Jauncey, P. M. McCulloch, J. M. Moran, R. P. Norris, J. E. Reynolds, & A. K. Tzioumis.* 590, 162 (2003)

Images of Astrophysical Masers and Their Variability in a Turbulent Medium: The 25 GHz Methanol Masers. *A. M. Sobolev, W. D. Watson, & V. A. Okorokov.* 590, 333 (2003)

The Three-dimensional Kinematics of Water Masers around the Semiregular Variable RT Virginis. *Hiroshi Imai, Katsunori M. Shibata, Kevin B. Marvel, Philip J. Diamond, Tetsuo Sasao, Makoto Miyoshi, Makoto Inoue, Victor Migenes, & Yasuhiro Murata.* 590, 460 (2003)

A Survey for H_2O Megamasers. III. Monitoring Water Vapor Masers in Active Galaxies. *J. A. Braatz, A. S. Wilson, C. Henkel, R. Gough, & M. Sinclair.* 146, 249 (2003)

A Class of Interstellar OH Masers Associated with Protostellar Outflows. *Alice L. Argon, Mark J. Reid, & Karl M. Menten.* 593, 925 (2003)

Magnetic Field Morphology of Orion IRc2 from 86 GHz SiO Maser Polarization Images. *R. L. Plambeck, M. C. H. Wright, & R. Rao.* 594, 911 (2003)

Cyclotron Maser Radiation from Astrophysical Shocks. *R. Bingham, B. J. Kellett, R. A. Cairns, J. Tonge, & J. T. Mendonça.* 595, 279 (2003)

Linear Polarization Observations of Water Masers in W3 IRS 5. *Hiroshi Imai, Shinji Horiuchi, Shuji Deguchi, & Osamu Kameya.* 595, 285 (2003)

Interstellar Hydroxyl Masers in the Galaxy. II. Zeeman Pairs and the Galactic Magnetic Field. *Vincent L. Fish, Mark J. Reid, Alice L. Argon, & Karl M. Menten.* 596, 328 (2003)

Photon Orbital Angular Momentum in Astrophysics. *Martin Harwit.* 597, 1266 (2003)

Apparent Sizes and Spectral Line Profiles for Spherical and Disk Masers: Solutions to the Full Equations. *W. D. Watson & H. W. Wyld.* 598, 357 (2003)

The Formaldehyde Masers in NGC 7538 and G29.96−0.02: Very Long Baseline Array, Multielement Radio-linked Interferometer Network, and Very Large Array Observations. *Ian M. Hoffman, W. M. Goss, Patrick Palmer, & A. M. S. Richards.* 598, 1061 (2003)

A Search for Mid-Infrared Emission from Hot Molecular Core Candidates. *J. M. De Buizer, J. T. Radomski, C. M. Telesco, & R. K. Piña.* 598, 1127 (2003)

Evidence for Evolution of the Outflow Collimation in Very Young Stellar Objects. *J. M. Torrelles, N. A. Patel, G. Anglada, J. F. Gómez, P. T. P. Ho, L. Lara, A. Alberdi, J. Cantó, S. Curiel, G. Garay, & L. F. Rodríguez.* 598, L115 (2003)

Phase-Referenced Very Long Baseline Array Observations of OH Masers at 4765 MHz. *Patrick Palmer, W. M. Goss, & K. E. Devine.* 599, 323 (2003)

A Movie of a Star: Multiepoch Very Long Baseline Array Imaging of the SiO Masers toward the Mira Variable TX Cam. *P. J. Diamond & A. J. Kemball.* 599, 1372 (2003)

METEORS, METEOROIDS

Cool Bottom Processes on the Thermally Pulsing Asymptotic Giant Branch and the Isotopic Composition of Circumstellar Dust Grains. *Kenneth M. Nollett, M. Busso, & G. J. Wasserburg.* 582, 1036 (2003)

Heliocentric Dependence of the Sodium Emission of Comet 153P/Ikeya-Zhang. *Jun-ichi Watanabe, Hideyo Kawakita, Reiko Furusho, & Mitsugu Fujii.* 585, L159 (2003)

Some Nucleosynthesis Effects Associated with r-Process Jets. *A. G. W. Cameron.* 587, 327 (2003)

Zinc Crystal Growth in Microgravity. *B. P. Michael, Joseph A. Nuth III, & Lembit U. Lilleleht.* 590, 579 (2003)

Solar System Abundances and Condensation Temperatures of the Elements. *Katharina Lodders.* 591, 1220 (2003)

A Fluorescent Aerogel for Capture and Identification of Interplanetary and Interstellar Dust. *Gerardo Domínguez, Andrew J. Westphal, Mark L. F. Phillips, & Steven M. Jones.* 592, 631 (2003)

Evaporation of Interstellar Organic Materials in the Solar Nebula. *Hideyuki Nakano, Akira Kouchi, Shogo Tachibana, & Akira Tsuchiyama.* 592, 1252 (2003)

The Astrobiology of Nucleobases. *Z. Peeters, O. Botta, S. B. Charnley, R. Ruiterkamp, & P. Ehrenfreud.* 593, L129 (2003)

Possible Distortion of the Interplanetary Magnetic Field by the Dust Trail of Comet 122P/de Vico. *G. H. Jones, A. Balogh, C. T. Russell, & M. K. Dougherty.* 597, L61 (2003)

METHODS: ANALYTICAL

How Sensitive Are Weak Lensing Statistics to Dark Energy Content? *Dipak Munshi & Yun Wang.* 583, 566 (2003)

Eddington Limit and Radiative Transfer in Highly Inhomogeneous Atmospheres. *Mateusz Ruszkowski & Mitchell C. Begelman.* 586, 384 (2003)

Time-dependent Density Functional Theory Calculations of Large Compact Polycyclic Aromatic Hydrocarbon Cations: Implications for the Diffuse Interstellar Bands. *Jennifer L. Weisman, Timothy J. Lee, Farid Salama, & Martin Head-Gordon.* 587, 256 (2003)

Inner Boundary Conditions for Advection-dominated Accretion onto Black Holes. *Peter A. Becker & Truong Le.* 588, 408 (2003)

The Initial Abundance of ^{60}Fe in the Solar System. *S. Tachibana & G. R. Huss.* 588, L41 (2003)

Measuring Feedback Using the Intergalactic Medium State and Evolution Inferred from the Soft X-Ray Background. *Pengjie Zhang & Ue-Li Pen.* 588, 704 (2003)

Evolution of the Cosmological Density Distribution Function from the Local Collapse Model. *Yasuhiro Ohta, Issha Kayo, & Atsushi Taruya.* 589, 1 (2003)

The Pleiades Reflection Nebula. II. Simple Model Constraints on Dust Properties and Scattering Geometry. *Steven J. Gibson & Kenneth H. Nordsieck.* 589, 362 (2003)

Emission-Line Spectra of Ar IX–Ar XVI in the Soft X-Ray Region 20–50 Å. *J. K. Lepson, P. Beiersdorfer, E. Behar, & S. M. Kahn.* 590, 604 (2003)

Mitigation of Radar Interference in L-Band Radio Astronomy. *S. W. Ellingson & G. A. Hampson.* 147, 167 (2003)

A Simplified Model for an Evolving Protoplanetary Nebula. *Sanford S. Davis.* 592, 1193 (2003)

The Origin of Cores and Density Profiles of Gaseous Baryonic Structures. *Steen H. Hansen & Joachim Stadel.* 595, L37 (2003)

Ballooning Modes in Thin Accretion Disks: Limits for Their Excitation. *B. Coppi & E. A. Keyes.* 595, 1000 (2003)

The Fate of Star Clusters near the Galactic Center. I. Analytic Considerations. *Stephen L. W. McMillan & Simon F. Portegies Zwart.* 596, 314 (2003)

The Structure of High Strehl Ratio Point-Spread Functions. *Marshall D. Perrin, Anand Sivaramakrishnan, Russell B. Makidon, Ben R. Oppenheimer, & James R. Graham.* 596, 702 (2003)

Relativistic Magnetohydrodynamics with Application to Gamma-Ray Burst Outflows. I. Theory and Semianalytic Trans-Alfvénic Solutions. *Nektarios Vlahakis & Arieh Königl.* 596, 1080 (2003)

Relativistic Magnetohydrodynamics with Applications to Gamma-Ray Burst Outflows. II. Semianalytic Super-Alfvénic Solutions. *Nektarios Vlahakis & Arieh Königl.* 596, 1104 (2003)

Occurrence and Stability of Apsidal Resonance in Multiple Planetary Systems. *Ji-Lin Zhou & Yi-Sui Sun.* 598, 1290 (2003)

Modeling Dynamical Dark Energy. *R. Mainini, A. V. Macciò, S. A. Bonometto, & A. Klypin.* 599, 24 (2003)

Halo Properties in Models with Dynamical Dark Energy. *A. Klypin, A. V. Macciò, R. Mainini, & S. A. Bonometto.* 599, 31 (2003)

METHODS: DATA ANALYSIS

How Sample Completeness Affects Gamma-Ray Burst Classification. *Jon Hakkila, Timothy W. Giblin, Richard J. Roiger, David J. Haglin, William S. Paciesas, & Charles A. Meegan.* 582, 320 (2003)

Chandra Spectra of the Soft X-Ray Diffuse Background. *M. Markevitch, M. W. Bautz, B. Biller, Y. Butt, R. Edgar, T. Gaetz, G. Garmire, C. E. Grant, P. Green, M. Juda, P. P. Plucinsky, D. Schwartz, R. Smith, A. Vikhlinin, S. Virani, B. J. Wargelin, & S. Wolk.* 583, 70 (2003)

A CLEAN-based Method for Deconvolving Interstellar Pulse Broadening from Radio Pulses. *N. D. R. Bhat, J. M. Cordes, & S. Chatterjee.* 584, 782 (2003)

Electron Properties and Coulomb Collisions in the Solar Wind at 1 AU: *WIND* Observations. *C. Salem, D. Hubert, C. Lacombe, S. D. Bale, A. Mangeney, D. E. Larson, & R. P. Lin.* 585, 1147 (2003)

Reconstructing Cepheid Light Curve with Fourier Techniques. I. The Fourier Expansion and Interrelations. *Chow-Choong Ngeow, Shashi M. Kanbur, Sergei Nikolaev, Nial R. Tanvir, & Martin A. Hendry.* 586, 959 (2003)

Rapid Brightness Fluctuations in Q0957+561A,B: Microlensing or Seeing? *Wesley N. Colley, Irwin I. Shapiro, Jennifer Pegg, Edwin L. Turner, Tomislav Kundić, Karen Loomis, N. C. Hastings, & Russet McMillan.* 588, 711 (2003)

Point Sources in the *Wilkinson Microwave Anisotropy Probe* Sky Maps. *Elena Pierpaoli.* 589, 58 (2003)

A New Search Technique for Short Orbital Period Binary Pulsars. *Scott M. Ransom, James M. Cordes, & Stephen S. Eikenberry.* 589, 911 (2003)

High Resolution X-Ray Spectroscopic Constraints on Cooling-Flow Models for Clusters of Galaxies. *J. R. Peterson, S. M. Kahn, F. B. S. Paerels, J. S. Kaastra, T. Tamura, J. A. M. Bleeker, C. Ferrigno, & J. G. Jernigan.* 590, 207 (2003)

Refining *Chandra*/ACIS Subpixel Event Repositioning Using a Backside-illuminated CCD Model. *Jingqiang Li, Joel H. Kastner, Gregory Y. Prigozhin, & Norbert S. Schulz.* 590, 586 (2003)

Non-Gaussianity of the Derived Maps from the First-Year *Wilkinson Microwave Anisotropy Probe* Data. *Lung-Yih Chiang, Pavel D. Naselsky, Oleg V. Verkhodanov, & Michael J. Way.* 590, L65 (2003)

Karhunen-Loève Estimation of the Power Spectrum Parameters from the Angular Distribution of Galaxies in Early Sloan Digital Sky Survey Data. *Alexander S. Szalay, Bhuvnesh Jain, Takahiko Matsubara, Ryan Scranton, Michael S. Vogeley, Andrew Connelly, Scott Dodelson, Daniel Eisenstein, Joshua A. Frieman, James E. Gunn, Lam Hui, David Johnston, Stephen Kent, Martin Kerscher, Jon Loveday, Avery Meiksin, Vijay Narayanan, Robert C. Nichol, Liam O'Connell, Adrian Pope, Roman Scoccimarro, Ravi K. Sheth, Albert Stebbins, Michael A. Strauss, István Szapudi, Max Tegmark, Idit Zehavi, James Annis, Neta Bahcall, Jon Brinkmann, István Csabai, Masataka Fukugita, Greg Hennessy, Zeljko Ivezic, Gillian R. Knapp, Peter A. Kunszt, Don Q. Lamb, Brian C. Lee, Robert H. Lupton, Jeffrey A. Munn, John Peoples, Jeffrey R. Pier, Constance Rockosi, David Schlegel, Christopher Stoughton, Douglas L. Tucker, Brian Yanny, & Donald G. York.* 591, 1 (2003)

A Comparison of Solar *p*-Mode Parameters from MDI and GONG: Mode Frequencies and Structure Inversion. *S. Basu, J. Christensen-Dalsgaard, R. Howe, J. Schou, M. J. Thompson, F. Hill, & R. Komm.* 591, 432 (2003)

Peculiar Pair of Distant Periodic Comets C/2002 A1 and C/2002 A2 (LINEAR). *Zdenek Sekanina, Paul W. Chodas, Miloš Tichý, Jana Tichá, & Michal Kočer.* 591, L67 (2003)

A Fast Gridded Method for the Estimation of the Power Spectrum of the Cosmic Microwave Background from Interferometer Data with Application to the Cosmic Background Imager. *S. T. Myers, C. R. Contaldi, J. R. Bond, U.-L. Pen, D. Pogosyan, S. Prunet, J. L. Sievers, B. S. Mason, T. J. Pearson, A. C. S. Readhead, & M. C. Shepherd.* 591, 575 (2003)

The Cross-Wavelet Transform and Analysis of Quasi-periodic Behavior in the Pearson-Readhead VLBI Survey Sources. *Brandon C. Kelly, Philip A. Hughes, Hugh D. Aller, & Margo F. Aller.* 591, 695 (2003)

SMAUG: A New Technique for the Deprojection of Galaxy Clusters. *Fabio Pizzolato, Silvano Molendi, Simona Ghizzardi, & Sabrina De Grandi.* 592, 62 (2003)

Luminous Supersoft X-Ray Sources in External Galaxies. *R. Di Stefano & A. K. H. Kong.* 592, 884 (2003)

Prediction of the Sidereal Time Distribution of Gravitational Wave Events for Different Detectors. *G. Paturel & Yu. Baryshev.* 592, L99 (2003)

Cloning Dropouts: Implications for Galaxy Evolution at High Redshift. *Rychard Bouwens, Tom Broadhurst, & Garth Illingworth.* 593, 640 (2003)

A Uniform Database of 2.4–45.4 Micron Spectra from the *Infrared Space Observatory* Short Wavelength Spectrometer. *G. C. Sloan, Kathleen E. Kraemer, Stephan D. Price, & Russell F. Shipman.* 147, 379 (2003)

Measuring Stellar Limb Darkening by Gravitational Microlensing. *David Heyrovský.* 594, 464 (2003)

Detecting Reflected Light from Close-in Extrasolar Giant Planets with the *Kepler* Photometer. *Jon M. Jenkins & Laurance R. Doyle.* 595, 429 (2003)

Possible Photometric Evidence of Ejection of Bullet-like Features in the Relativistic Jet Source SS 433. *Sandip K. Chakrabarti, S. Pal, A. Nandi, B. G. Anandarao, & Soumen Mondal.* 595, L45 (2003)

First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Galactic Signal Contamination from Sidelobe Pickup. *C. Barnes, R. S. Hill, G. Hinshaw, L. Page, C. L. Bennett, M. Halpern, N. Jarosik, A. Kogut, M. Limon, S. S. Meyer, G. S. Tucker, E. Wollack, & E. L. Wright.* 148, 51 (2003)

First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Data Processing Methods and Systematic Errors Limits. *G. Hinshaw, C. Barnes, C. L. Bennett, M. R. Greason, M. Halpern, R. S. Hill, N. Jarosik, A. Kogut, M. Limon, S. S. Meyer, N. Odegard, L. Page, D. N. Spergel, G. S. Tucker, J. L. Weiland, E. Wollack, & E. L. Wright.* 148, 63 (2003)

First-Year *Wilkinson Microwave Anisotrophy Probe* (*WMAP*) Observations: Parameter Estimation Methodology. *L. Verde, H. V. Peiris, D. N. Spergel, M. R. Nolta, C. L. Bennett, M. Halpern, G. Hinshaw, N. Jarosik, A. Kogut, M. Limon, S. S. Meyer, L. Page, G. S. Tucker, E. Wollack, & E. L. Wright.* 148, 195 (2003)

Normal Parameters for an Analytic Description of the Cosmic Microwave Background Cosmological Parameter Likelihood. *Mike Chu, Manoj Kaplinghat, & Lloyd Knox.* 596, 725 (2003)

Variability of EGRET Gamma-Ray Sources. *P. L. Nolan, W. F. Tompkins, I. A. Grenier, & P. F. Michelson.* 597, 615 (2003)

Erosion Model for the Sungrazing Comets Observed with the *Solar and Heliospheric Observatory*. *Zdenek Sekanina.* 597, 1237 (2003)

Multicolor Photometry of the Galaxies in A2255 by the Beijing-Arizona-Taiwan-Connecticut Survey and Sloan Digital Sky Survey. *Qirong Yaun, Xu Zhou, & Zhaoji Jiang.* 149, 53 (2003)

Introducing EMILI: Computer-Aided Emission Line Identification. *Brian Sharpee, Robert Williams, Jack A. Baldwin, & Peter A. M. van Hoof.* 149, 155 (2003)

The Internal Ultraviolet–Optical Color Dispersion: Quantifying the Morphological *K*-Correction. *Casey Papovich, Mauro Giavalisco, Mark Dickinson, Christopher J. Conselice, & Henry C. Ferguson.* 598, 827 (2003)

Spectroscopic Detection of Type Ia Supernovae in the Sloan Digital Sky Survey. *Darren S. Madgwick, Paul C. Hewett, Daniel J. Mortlock, & Lifan Wang.* 599, L33 (2003)

Phase Cross-Correlation of the *Wilkinson Microwave Anisotropy Probe* Internal Linear Combination Map and Foregrounds. *Pavel D. Naselsky, Andrey G. Doroshkevich, & Oleg V. Verkhodanov.* 599, L53 (2003)

A Catalog of Bright Filamentary Structures in the Interstellar Medium. *Tom Jackson, Michael Werner, & T. N. Gautier III.* 149, 365 (2003)

METHODS: LABORATORY

Laboratory Precision Measurements of the Rotational Spectrum of $^{12}C^{17}O$ and $^{13}C^{17}O$. *Gabriele Klapper, Leonid Surin, Frank Lewen, Holger S. P. Müller, Igor Pak, & Gisbert Winnewisser.* 582, 262 (2003)

Stellar Neutron Capture on Promethium: Implications for the s-Process Neutron Density. *R. Reifarth, C. Arlandini, M. Heil, F. Käppeler, P. V. Sedyshev, A. Mengoni, M. Herman, T. Rauscher, R. Gallino, & C. Travaglio.* 582, 1251 (2003)

The Interaction of Supernova Remnants with Interstellar Clouds: Experiments on the Nova Laser. *Richard I. Klein, Kimberly S. Budil, Theordore S. Perry, & David R. Bach.* 583, 245 (2003)

The s-Process Branching at ^{185}W. *K. Sonnabend, P. Mohr, K. Vogt, A. Zilges, A. Mengoni, T. Rauscher, H. Beer, F. Käppeler, & R. Gallino.* 583, 506 (2003)

Luminescence from Vacuum-Ultraviolet–irradiated Cosmic Ice Analogs and Residues. *Murthy S. Gudipati, Jason P. Dworkin, Xavier D.F. Chillier, & Louis J. Allamandola.* 583, 514 (2003)

Infrared Absorption Spectra of Deuterated Amorphous Carbon. *V. I. Grishko & W. W. Duley.* 583, L43 (2003)

Carbon Monoxide Entrapment in Interstellar Ice Analogs. *M. P. Collings, J. W. Dever, H. J. Fraser, M. R. S. McCoustra, & D. A. Williams.* 583, 1058 (2003)

Trans-Ethyl Methyl Ether: Assignments and Predictions up to 400 GHz for the Vibrational-Torsional Ground State. *Ulrike Fuchs, Gisbert Winnewisser, Peter Groner, Frank C. De Lucia, & Eric Herbst.* 144, 277 (2003)

Rotational Spectra of the Nitrogen-Sulfur Carbon NC_nS, $n = 1$–7. *M. C. McCarthy, A. L. Cooksy, S. Mohamed, V. D. Gordon, & P. Thaddeus.* 144, 287 (2003)

A Concise New Look at the l-Type Spectrum of $H^{12}C^{14}N$. *S. Thorwirth, H. S. P. Müller, F. Lewen, S. Brünken, V. Ahrens, & G. Winnewisser.* 585, L163 (2003)

An Atlas of the Intersystem Transitions of CO. *M. Eidelsberg & F. Rostas.* 145, 89 (2003)

The Effects of Ion Irradiation on the Evolution of the Carrier of the 3.4 Micron Interstellar Absoprtion Band. *V. Mennella, G. A. Baratta, A. Esposito, G. Ferini, & Y. J. Pendleton.* 587, 727 (2003)

Experimental Transition Rate of the Green Coronal Line of Fe XIV. *P. Beiersdorfer, E. Träbert, & E. H. Pinnington.* 587, 836 (2003)

Precise Millimeter-Wave Laboratory Frequences for CS and $C^{34}S$. *C. A. Gottlieb, P. C. Myers, & P. Thaddeus.* 588, 655 (2003)

Dependence of H_2CO and CH_3OH Formation on Temperature and Thickness of H_2O-CO Ice during the Successive Hydrogenation of CO. *Naoki Watanabe, Takahiro Shiraki, & Akira Kouchi.* 588, L121 (2003)

Zinc Crystal Growth in Microgravity. *B. P. Michael, Joseph A. Nuth III, & Lembit U. Lilleleht.* 590, 579 (2003)

Emission-Line Spectra of Ar IX–Ar XVI in the Soft X-Ray Region 20–50 Å. *J. K. Lepson, P. Beiersdorfer, E. Behar, & S. M. Kahn.* 590, 604 (2003)

Photodestruction of Relevant Interstellar Molecules in Ice Mixtures. *Hervé Cottin, Marla H. Moore, & Yves Bénilan.* 590, 874 (2003)

Accurate Laboratory Wavelengths of the Vacuum Ultraviolet $A(\Upsilon' = 3) - X(\Upsilon'' = 0)$ Band of $^{12}C^{17}O$ and $^{12}C^{18}O$. *Christine Steinmann, Erich G. Rohwer, & Herbert Stafast.* 590, L123 (2003)

Absolute Photoionization Cross Section Measurements of O II Ions from 29.7 to 46.2 eV. *A. Aguilar, A. M. Covington, G. Hinojosa, R. A. Phaneuf, I. Álvarez, C. Cisneros, J. D. Bozek, I. Dominguez, M. M. Sant'Anna, A. S. Schlachter, S. N. Nahar, & B. M. McLaughlin.* 146, 467 (2003)

Laboratory Infrared Spectroscopy of Cationic Polycyclic Aromatic Hydrocarbon Molecules. *Jos Oomens, A. G. G. M. Tielens, Boris G. Sartakov, Gert von Helden, & Gerard Meijer.* 591, 968 (2003)

Evaporation of Interstellar Organic Materials in the Solar Nebula. *Hideyuki Nakano, Akira Kouchi, Shogo Tachibana, & Akira Tsuchiyama.* 592, 1252 (2003)

Precise Laboratory Frequencies of the $J = 1$–0 and $J = 2$–1 Rotational Transitions of $C^{18}O$. *G. Cazzoli, C. Puzzarini, & A. V. Lapinov.* 592, L95 (2003)

The Astrobiology of Nucleobases. *Z. Peeters, O. Botta, S. B. Charnley, R. Ruiterkamp, & P. Ehrenfreud.* 593, L129 (2003)

Rotational Rest Frequencies for FeN ($X\ ^2\Delta_i$) and Revised Spectroscopic Constants for FeC ($X\ ^3\Delta_i$). *P. M. Sheridan, L. M. Ziurys, & T. Hirano.* 593, L141 (2003)

Dielectronic Recombination of the Fe XXI and Fe XXII via $N = 2 \rightarrow N' = 2$ Core Excitations. *D. W. Savin, S. M. Kahn, G. Gwinner, M. Grieser, R. Repnow, G. Saathoff, D. Schwalm, A. Wolf, A. Müller, S. Schippers, P. A. Závodszky, M. H. Chen, T. W. Gorczyca, O. Zatsarinny, & M. F. Gu.* 147, 421 (2003)

New Laboratory Spectra of Isolated β-SiC Nanoparticles: Comparison with Spectra Taken by the *Infrared Space Observatory*. *D. Clément, H. Mutschke, R. Klein, & Th. Henning.* 594, 642 (2003)

Transitions from Autoionized Single-ionized Tin States: A Theoretical Study of the $5s5p\ (^3P^o)\ nl$ ($nl = 5d$, $6s$) Levels of Sn II. *A. Alonso-Medina, C. Colón, & C. Herrán Martínez.* 595, 550 (2003)

Measurement of the Kinetic Energy of Hydrogen Molecules Desorbing from Amorphous Water Ice. *J. E. Roser, S. Swords, G. Vidali, G. Manicò, & V. Pirronello.* 596, L55 (2003)

Laboratory Spectrum of the 1_{11}–2_{02} Rotational Transition of CH_2. *Ernest A. Michael, Frank Lewen, Gisbert Winnewisser, Hiroyuki Ozeki, Hideta Habara, & Eric Herbst.* 596, 1356 (2003)

Facile Generation and Storage of Polycyclic Aromatic Hydrocarbon Ions in Astrophysical Ices. *Murthy S. Gudipati & Louis J. Allamandola.* 596, L195 (2003)

New Identifications of Mn IV and Fe VII Vacuum Ultraviolet Lines. *J. O. Ekberg & U. Feldman.* 148, 567 (2003)

Measurements and Calculations of Photoionization Cross Sections of Multiply Charged Ions in Ground and Metastable States along the Isonuclear Series of Oxygen: O^{2+} to O^{4+}. *J.-P. Champeaux, J.-M. Bizau, D. Cubaynes, C. Blancard, S. Nahar, D. Hitz, J. Bruneau, & F. J. Wuilleumier.* 148, 583 (2003)

The Millimeter- and Submillimeter-Wave Spectrum of the Trans-Trans Conformer of Diethyl Ether ($C_2H_5OC_2H_5$). *Ivan Medvedev, Manfred Winnewisser, Frank C. De Lucia, Eric Herbst, Ewa Białkowski–Jaworska, Oleksandr Desyatnyk, Lech Pszczołkowski, Zbigniew Kisiel, Enyi Yi, Lai Peng Leong, & Ryan P. A. Bettens.* 148, 593 (2003)

Laboratory Submillimeter-Wave Detection of D_2H^+: A New Probe into Multiple Deuteration? *T. Hirano & T. Amano.* 597, L85 (2003)

Oxirane: An Exotic Oxygenated Organic Compound in Titan? *Patrice Coll, Jean-Michel Bernard, Rafael Navarro-González, & François Raulin.* 598, 700 (2003)

Rotation of a Pulsed Jet, or Plume in a Rotation Flow: A Source of Helicity for an α-ω Astrophysical Dynamo. *Howard F. Beckley, Stirling A. Colgate, Van D. Romero, & Ragnar Ferrel.* 599, 702 (2003)

Infrared Properties of Solid Titanium Oxides: Exploring Potential Primary Dust Condensates. *T. Posch, F. Kerschbaum, D. Fabian, H. Mutschke, J. Dorschner, A. Tamanai, & T. Henning.* 149, 437 (2003)

METHODS: MISCELLANEOUS

An Outer Galaxy Molecular Cloud Catalog. *Christopher M. Brunt, C. R. Kerton, & Caroline Pomerleau.* 144, 47 (2003)

A New Technique for Determining the Number of X-Ray Sources per Flux Density Interval. *A. T. Kenter & S. S. Murray.* 584, 1016 (2003)

METHODS: N-BODY SIMULATIONS

On the Central Structure of M15. *Holger Baumgardt, Piet Hut, Junichiro Makino, Steve McMillan, & Simon Portegies Zwart.* 582, L21 (2003)

Dynamic Habitability of Known Extrasolar Planetary Systems. *Kristen Menou & Serge Tabachnik.* 583, 473 (2003)

NGC 4608 and NGC 5701: Barred Galaxies without Disks? *D. A. Gadotti & R. E. de Souza.* 583, L75 (2003)

The Structural Evolution of Substructure. *Eric Hayashi, Julio F. Navarro, James E. Taylor, Joachim Stadel, & Thomas Quinn.* 584, 541 (2003)

Toward a Measurement of the Cosmological Geometry at $z \sim 2$: Predicting Lyα Forest Correlation in Three Dimensions and the Potential of Future Data Sets. *Patrick McDonald.* 585, 34 (2003)

Smooth Potential Chaos and N-Body Simulations. *Henry E. Kandrup & Ioannis V. Sideris.* 585, 244 (2003)

Could the 55 Cancri Planetary System Really Be in the 3:1 Mean Motion Resonance? *Jianghui Ji, Hiroshi Kinoshita, Lin Liu, & Guangyu Li.* 585, L139 (2003)

Tree Particle-Mesh: An Adaptive, Efficient, and Parallel Code for Collisionless Cosmological Simulation. *Paul Bode & Jeremiah P. Ostriker.* 145, 1 (2003)

Morphological and Kinematic Properties of Disk Galaxies Perturbed by a Satellite. *R. Chan & S. Junqueira.* 586, 780 (2003)

The Janus Head of the HD 12661 Planetary System. *Krzysztof Gożdziewski & Andrzej J. Maciejewski.* 586, L153 (2003)

Shadowing-based Reliability Decay in Softened n-Body Simulations. *Wayne B. Hayes.* 587, L59 (2003)

Mass of Clusters in Simulations. *Andrea V. Macciò, Giuseppe Murante, & Silvio P. Bonometto.* 588, 35 (2003)

Disk-Bulge-Halo Models for the Andromeda Galaxy. *Lawrence M. Widrow, Kathryn M. Perrett, & Sherry H. Suyu.* 588, 311 (2003)

Structure of Dark Matter Halos from Hierarchical Clustering. II. Dependence of Cosmological Models in Cluster-sized Halos. *Toshiyuki Fukushige & Junichiro Makino.* 588, 674 (2003)

Models of the Morphology, Kinematics, and Star Formation History of the Prototypical Collisional Starburst System NGC 7714/7715=Arp 284. *Curtis Struck & Beverly J. Smith.* 589, 157 (2003)

White Dwarf Sequences in Dense Star Clusters. *Jarrod R. Hurley & Michael M. Shara.* 589, 179 (2003)

A Dynamical Model for the Globular Cluster G1. *Holger Baumgardt, Junichiro Makino, Piet Hut, Steve McMillan, & Simon Portegies Zwart.* 589, L25 (2003)

Simulations of Galaxy Formation in a ΛCDM Universe. III. The Dissipative Formation of an Elliptical Galaxy. *Andrés Meza, Julio F. Navarro, Matthias Steinmetz, & Vincent R. Eke.* 590, 619 (2003)

On the Spatial Correlations of Lyman Break Galaxies. *Evan Scannapieco & Robert J. Thacker.* 590, L69 (2003)

The Librating Companions in HD 37124, HD 12661, HD 82943, 47 Ursa Majoris, and GJ 876: Alignment or Antialignment? *Jianghui Ji, Lin Liu, Hiroshi Kinoshita, Jilin Zhou, Hiroshi Nakai, & Guangyu Li.* 591, L57 (2003)

Effects of Wandering on the Coalescence of Black Hole Binaries in Galactic Centers. *Pinaki Chatterjee, Lars Hernquist, & Abraham Loeb.* 592, 32 (2003)

Successive Refinements in Long-Term Integrations of Planetary Orbits. *F. Varadi, B. Runnegar, & M. Ghil.* 592, 620 (2003)

On the Origin of the Inner Structure of Halos. *Alberto Manrique, Andreu Raig, Eduard Salvador-Solé, Teresa Sanchis, & José María Solanes.* 593, 26 (2003)

The Origin of IRS 16: Dynamically Driven Inspiral of a Dense Star Cluster to the Galactic Center? *Simon F. Portegies Zwart, Stephen L. W. McMillan, & Ortwin Gerhard.* 593, 352 (2003)

Intracluster Stellar Population Properties from N-Body Cosmological Simulations. I. Constraints at $z = 0$. *Nicola R. Napolitano, Maurilio Pannella, Magda Arnaboldi, Ortwin Gerhard, J. Alfonso L. Aguerri, Kenneth C. Freeman, Massimo Capaccioli, Sebastiano Ghigna, Fabio Governato, Tom Quinn, & Joachim Stadel.* 594, 172 (2003)

Where Is the Second Planet in the HD 160691 Planetary System? *Krzysztof Gozdziewski, Maciej Konacki, & Andrzej J. Maciejewski.* 594, 1019 (2003)

Does M15 Possess an Intermediate-Mass Black Hole in Its Core? *B. J. McNamara, T. E. Harrison, & J. Anderson.* 595, 187 (2003)

The White Dwarf Deficit in Open Clusters: Dynamical Processes. *M. Fellhauer, D. N. C. Lin, M. Bolte, S. J. Aarseth, & K. A. Williams.* 595, L53 (2003)

Dynamical Friction on Star Clusters near the Galactic Center. *Sungsoo S. Kim & Mark Morris.* 597, 312 (2003)

The Effects of Non-Gaussian Initial Conditions on the Structure and Substructure of Cold Dark Matter Halos. *Vladimir Avila-Reese, Pedro Colín, Gabriella Piccinelli, & Claudio Firmani.* 598, 36 (2003)

Early Structure Formation and Reionization in a Cosmological Model with a Running Primordial Power Spectrum. *Naoki Yoshida, Aaron Sokasian, Lars Hernquist, & Volker Springel.* 598, 73 (2003)

METHODS: NUMERICAL

Accretion of Low Angular Momentum Material onto Black Holes: Two-dimensional Hydrodynamical Inviscid Case. *Daniel Proga & Mitchell C. Begelman.* 582, 69 (2003)

To Circularize or Not to Circularize?—Orbital Evolution of Satellite Galaxies. *Yoshikazu Hashimoto, Yoko Funato, & Junichiro Makino.* 582, 196 (2003)

A Coupled Model for the Emergence of Active Region Magnetic Flux into the Solar Corona. *W. P. Abbett & G. H. Fisher.* 582, 475 (2003)

Turbulence in Accretion Disks: Vorticity Generation and Angular Momentum Transport via the Global Baroclinic Instability. *H. H. Klahr & P. Bodenheimer.* 582, 869 (2003)

The Dynamic Evolution of Twisted Magnetic Flux Tubes in a Three-dimensional Convecting Flow. I. Uniformly Buoyant Horizontal Tubes. *Y. Fan, W. P. Abbett, & G. H. Fisher.* 582, 1206 (2003)

Relativistic Dyson Rings and Their Black Hole Limit. *M. Ansorg, A. Kleinwächter, & R. Meinel.* 582, L87 (2003)

A Fast Algorithm for Solving the Poisson Equation on a Nested Grid. *Tomoaki Matsumoto & Tomoyuki Hanawa.* 583, 296 (2003)

How Sensitive Are Weak Lensing Statistics to Dark Energy Content? *Dipak Munshi & Yun Wang.* 583, 566 (2003)

Non-Oscillatory Central Difference and Artificial Viscosity Schemes for Relativistic Hydrodynamics. *Peter Anninos & P. Chris Fragile.* 144, 243 (2003)

Gamma Rays from Intergalactic Shocks. *Uri Keshet, Eli Waxman, Abraham Loeb, Volker Springel, & Lars Hernquist.* 585, 128 (2003)

Numerical Simulations of Mass Outflows Driven from Accretion Disks by Radiation and Magnetic Forces. *Daniel Proga.* 585, 406 (2003)

Relativistic Jets in Collapsars. *Weiqun Zhang, S. E. Woosley, & A. I. MacFadyen.* 586, 356 (2003)

Eddington Limit and Radiative Transfer in Highly Inhomogeneous Atmospheres. *Mateusz Ruszkowski & Mitchell C. Begelman.* 586, 384 (2003)

Orbital Migration and Mass Accretion of Protoplanets in Three-dimensional Global Computations with Nested Grids. *Gennaro D'Angelo, Willy Kley, & Thomas Henning.* 586, 540 (2003)

Injection of Magnetic Energy and Magnetic Helicity into the Solar Atmosphere by an Emerging Magnetic Flux Tube. *T. Magara & D. W. Longcope.* 586, 630 (2003)

Tree Particle-Mesh: An Adaptive, Efficient, and Parallel Code for Collisionless Cosmological Simulation. *Paul Bode & Jeremiah P. Ostriker.* 145, 1 (2003)

Small-Scale Clustering in Isotropic Arrival Distribution of Ultra–High-Energy Cosmic Rays and Implications for Their Source Candidates. *Hiroyuki Yoshiguchi, Shigehiro Nagataki, Sin-ya Tsubaki, & Katsuhiko Sato.* 586, 1211 (2003)

2-DUST: A Dust Radiative Transfer Code for an Axisymmetric System. *Toshiya Ueta & Margaret Meixner.* 586, 1338 (2003)

The Janus Head of the HD 12661 Planetary System. *Krzysztof Goździewski & Andrzej J. Maciejewski.* 586, L153 (2003)

The Influence of Ω_b on High-Redshit Structure. *Jeffrey P. Gardner, Neal Katz, Lars Hernquist, & David H. Weinberg.* 587, 1 (2003)

Electron Neutrino Pair Annihilation: A New Source for Muon and Tau Neutrinos in Supernovae. *Robert Buras, Hans-Thomas Janka, Mathias Th. Keil, Georg G. Raffelt, & Markus Rampp.* 587, 320 (2003)

White Dwarf Asteroseismology and the $^{12}C(\alpha, \gamma)^{16}O$ Rate. *Travis S. Metcalfe.* 587, L43 (2003)

Cold Fronts in Cold Dark Matter Clusters. *Daisuke Nagai & Andrey V. Kravtsov.* 587, 514 (2003)

Effect of Internal Flows on Sunyaev-Zeldovich Measurements of Cluster Peculiar Velocities. *Daisuke Nagai, Andrey V. Kravtsov, & Arthur Kosowsky.* 587, 524 (2003)

On the Coupling between Helium Settling and Rotation-induced Mixing in Stellar Radiative Zones. II. Numerical Approach. *Sylvie Théado & Sylvie Vauclair.* 587, 784 (2003)

Cluster Morphology as a Test of Different Cosmological Models. *Tamon Suwa, Asao Habe, Kohji Yoshikawa, & Takashi Okamoto.* 588, 7 (2003)

Runaway Migration and the Formation of Hot Jupiters. *F. S. Masset & J. C. B. Papaloizou.* 588, 494 (2003)

HARM: A Numerical Scheme for General Relativistic Magnetohydrodynamics. *Charles F. Gammie, Jonathan C. McKinney, & Gábor Tóth.* 589, 444 (2003)

On the Early Evolution of Forming Jovian Planets. I. Initial Conditions, Systematics, and Qualitative Comparisons to Theory. *Andrew F. Nelson & Willy Benz.* 589, 556 (2003)

On the Early Evolution of Forming Jovian Planets. II. Analysis of Accretion and Gravitational Torques. *Andrew F. Nelson & Willy Benz.* 589, 578 (2003)

Two-dimensional Magnetohydrodynamic Models of the Solar Corona: Mass Loss from the Streamer Belt. *Eirik Endeve, Egil Leer, & Thomas E. Holzer.* 589, 1040 (2003)

On the Origin of the Global Schmidt Law of Star Formation. *Andrey V. Kravtsov.* 590, L1 (2003)

Spatial and Dynamical Biases in Velocity Statistics of Galaxies. *Kohji Yoshikawa, Y. P. Jing, & Gerhard Börner.* 590, 654 (2003)

Supernova Enrichment of Dwarf Spheroidal Galaxies. *P. Chris Fragile, Stephen D. Murray, Peter Anninos, & Douglas N. C. Lin.* 590, 778 (2003)

On the Rapidly Cooling Interior of Supergalactic Winds. *S. Silich, G. Tenorio-Tagle, & C. Muñoz-Tuñón.* 590, 791 (2003)

Spectral Properties of Compressible Magnetohydrodynamic Turbulence from Numerical Simulations. *Jason G. Verstuto, Eve C. Ostriker, & James M. Stone.* 590, 858 (2003)

A Grid of Non-LTE Line-Blanketed Model Atmospheres of O-Type Stars. *Thierry Lanz & Ivan Hubeny.* 146, 417 (2003)

Feedback from the First Supernovae in Protogalaxies: The Fate of the Generated Metals. *Keiichi Wada & Aparna Venkatesan.* 591, 38 (2003)

Electrodynamics of an Outer Gap Accelerator: Formation of a Soft Power-Law Spectrum between 100 MeV and 3 GeV. *Kouichi Hirotani, Alice K. Harding, & Shinpei Shibata.* 591, 334 (2003)

Simulations of Galaxy Formation in a Λ Cold Dark Matter Universe. I. Dynamical and Photometric Properties of a Simulated Disk Galaxy. *Mario G. Abadi, Julio F. Navarro, Matthias Steinmetz, & Vincent R. Eke.* 591, 499 (2003)

Dark and Luminous Matter Connections from Smoothed Particle Hydrodynamic Simulations of Isolated Triaxial Collapsing Systems. *P. Mazzei & A. Curir.* 591, 784 (2003)

Analysis of Clumps in Molecular Cloud Models: Mass Spectrum, Shapes, Alignment, and Rotation. *Charles F. Gammie, Yen-Ting Lin, James M. Stone, & Eve C. Ostriker.* 592, 203 (2003)

Arrival Distribution of Ultra–High-Energy Cosmic Rays: Prospects for the Future. *Hiroyuki Yoshiguchi, Shigehiro Nagataki, & Katsuhiko Sato.* 592, 311 (2003)

The Effect of Angular Structure of Gamma-Ray Burst Outflows on the Afterglow Emission. *A. Panaitescu & P. Kumar.* 592, 390 (2003)

On Resonance-Line Profiles Predicted by Radiation-driven Disk-Wind Models. *Daniel Proga.* 592, L9 (2003)

Cosmos: A Radiation-Chemo-Hydrodynamics Code for Astrophysical Problems. *Peter Anninos, P. Chris Fragile, & Stephen D. Murray.* 147, 177 (2003)

The Numerical Simulation of Radiative Shocks. I. The Elimination of Numerical Shock Instabilities Using a Local Oscillation Filter. *Ralph S. Sutherland, David K. Bisset, & Geoffrey V. Bicknell.* 147, 187 (2003)

Beyond Flux-limited Diffusion: Parallel Algorithms for Multidimensional Radiation Hydrodynamics. *John C. Hayes & Michael L. Norman.* 147, 197 (2003)

Accretion of Low Angular Momentum Material onto Black Holes: Two-dimensional Magnetohydrodynamic Case. *Daniel Proga & Mitchell C. Begelman.* 592, 767 (2003)

The Accuracy of the Center-of-Gravity Method for Measuring Velocity and Magnetic Field Strength in the Solar Photosphere. *H. Uitenbroek.* 592, 1225 (2003)

Revisited Abundance Diagnostics in Quasars: Fe II/Mg II Ratios. *E. Verner, F. Bruhweiler, D. Verner, S. Johansson, & T. Gull.* 592, L59 (2003)

Black Hole Growth and Activity in a Λ Cold Dark Matter Universe. *Tiziana Di Matteo, Rupert A. C. Croft, Volker Springel, & Lars Hernquist.* 593, 56 (2003)

Roche Lobe Overflow from Dwarf Stellar Systems. *Stephen D. Murray, Shawfeng Dong, & Douglas N. C. Lin.* 593, 301 (2003)

Cosmological Shock Waves and Their Role in the Large-Scale Structure of the Universe. *Dongsu Ryu, Hyesung Kang, Eric Hallman, & T. W. Jones.* 593, 599 (2003)

Monte Carlo Simulations of Globular Cluster Evolution. III. Primordial Binary Interactions. *J. M. Fregeau, M. A. Gürkan, K. J. Joshi, & F. A. Rasio.* 593, 772 (2003)

On the Use of Fractional Brownian Motion Simulations to Determine the Three-dimensional Statistical Properties of Interstellar Gas. *M.-A. Miville-Deschênes, F. Levrier, & E. Falgarone.* 593, 831 (2003)

X-Ray Absorption by the Low-Redshift Intergalactic Medium: A Numerical Study of the Λ Cold Dark Matter Model. *Xuelei Chen, David H. Weinberg, Neal Katz, & Romeel Davé.* 594, 42 (2003)

Numerical Study of Compressible Magnetohydrodynamic Turbulence in Two Dimensions. *Hyesook Lee, Dongsu Ryu, Jongsoo Kim, T. W. Jones, & Dinshaw Balsara.* 594, 627 (2003)

Nonthermal Particles and Radiation Produced by Cluster Merger Shocks. *Robert C. Berrington & Charles D. Dermer.* 594, 709 (2003)

Where Is the Second Planet in the HD 160691 Planetary System? *Krzysztof Gozdźiewski, Maciej Konacki, & Andrzej J. Maciejewski.* 594, 1019 (2003)

Relaxation of a Collisionless System and the Transition to a New Equilibrium Velocity Distribution. *Thomas E. C. Merrall & Richard N. Henriksen.* 595, 43 (2003)

Anisotropic Neutrino Radiation in Rotational Core Collapse. *Kei Kotake, Shoichi Yamada, & Katsuhiko Sato.* 595, 304 (2003)

Gradient Particle Magnetohydrodynamics: A Lagrangian Particle Code for Astrophysical Magnetohydrodynamics. *Jason L. Maron & Gregory G. Howes.* 595, 564 (2003)

A Three-dimensional Model of the Solar Wind Incorporating Solar Magnetogram Observations. *I. I. Roussev, T. I. Gombosi, I. V. Sokolov, M. Velli, W. Manchester IV, D. L. DeZeeuw, P. Liewer, G. Tóth, & J. Luhmann.* 595, L57 (2003)

Magnetocentrifugal Launching of Jets from Accretion Disks. II. Inner Disk-driven Winds. *Ruben Krasnopolsky, Zhi-Yun Li, & Roger D. Blandford.* 595, 631 (2003)

Nonlinear Hydromagnetic Wave Support of a Stratified Molecular Cloud. *Takahiro Kudoh & Shantanu Basu.* 595, 842 (2003)

Fragmentation of a Molecular Cloud Core versus Fragmentation of the Massive Protoplanetary Disk in the Main Accretion Phase. *Tomoaki Matsumoto & Tomoyuki Hanawa.* 595, 913 (2003)

The Response of Model and Astrophysical Thermonuclear Flames to Curvature and Stretch. *L. J. Dursi, M. Zingale, A. C. Calder, B. Fryxell, F. X. Timmes, N. Vladimirova, R. Rosner, A. Caceres, D. Q. Lamb, K. Olson, P. M. Ricker, K. Riley, A. Siegel, & J. W. Truran.* 595, 955 (2003)

Constrained Simulations of the Real Universe: The Local Supercluster. *Anatoly Klypin, Yehuda Hoffman, Andrey V. Kravtsov, & Stefan Gottlöber.* 596, 19 (2003)

Galaxy Formation: Cold Dark Matter, Feedback, and the Hubble Sequence. *Jesper Sommer-Larsen, Martin Götz, & Laura Portinari.* 596, 47 (2003)

Constraints of the Clumpiness of Dark Matter Halos through Heating of the Disk Galaxies. *Eliani Ardi, Toshio Tsuchiya, & Andreas Burkert.* 596, 204 (2003)

Explosive Nucleosynthesis Associated with Formation of Jet-induced Gamma-Ray Bursts in Massive Stars. *S. Nagataki, A. Mizuta, S. Yamada, H. Takabe, & K. Sato.* 596, 401 (2003)

Model Spectral Energy Distributions of Circumstellar Debris Disks. I. Analytic Disk Density Distributions. *Sebastian Wolf & Lynne A. Hillenbrand.* 596, 603 (2003)

Magnetohydrodynamic Shock Heating of the Solar Corona. *J. A. Orta, M. A. Huerta, & G. C. Boynton.* 596, 646 (2003)

What Causes *p*-Mode Asymmetry Reversal? *Dali Georgobiani, Robert F. Stein, & Åke Nordlund.* 596, 698 (2003)

The Structure of High Strehl Ratio Point-Spread Functions. *Marshall D. Perrin, Anand Sivaramakrishnan, Russell B. Makidon, Ben R. Oppenheimer, & James R. Graham.* 596, 702 (2003)

A New Method for Calculating Arrival Distribution of Ultra–High-Energy Cosmic Rays above 10^{19} eV with Modifications by the Galactic Magnetic Field. *Hiroyuki Yoshiguchi, Shigehiro Nagataki, & Katsuhiko Sato.* 596, 1044 (2003)

Flux Rope Acceleration and Enhanced Magnetic Reconnection Rate. *C. Z. Cheng, Y. Ren, G. S. Choe, & Y.-J. Moon.* 596, 1341 (2003)

The Probability Distribution Function of Light in the Universe: Results from Hydrodynamic Simulations. *Jeremiah P. Ostriker, Kentaro Nagamine, Renyue Cen, & Masataka Fukugita.* 597, 1 (2003)

Simulations of Galaxy Formation in a Λ Cold Dark Matter Universe. II. The Fine Structure of Simulated Galactic Disks. *Mario G. Abadi, Julio F. Navarro, Matthias Steinmetz, & Vincent R. Eke.* 597, 21 (2003)

High-Resolution Simulations of Non-Gaussian Cosmic Microwave Background Maps in Spherical Coordinates. *M. Liguori, S. Matarrese, & L. Moscardini.* 597, 57 (2003)

Mass and Redshift Dependence of Dark Halo Structure. *D. H. Zhao, Y. P. Jing, H. J. Mo, & G. Börner.* 597, L9 (2003)

Lensing Effects of Misaligned Disks in Dark Matter Halos. *Ryan Quadri, Ole Möller, & Priyamvada Natarajan.* 597, 659 (2003)

Circumnulear Structures in the Interacting Seyfert Galaxy of NGC 1241: Kinematics and Optical/Infrared Morphology. *Rubén J. Díaz, Horacio Dottori, Nelson Vera-Villamizar, & Gustavo Carranza.* 597, 860 (2003)

Conservation Laws in Smooth Particle Hydrodynamics: The DEVA Code. *A. Serna, R. Domínguez-Tenreiro, & A. Sáiz.* 597, 878 (2003)

Statistical Properties of Collisionless Equal- and Unequal-Mass Merger Remnants of Disk Galaxies. *Thorsten Naab & Andreas Burkert.* 597, 893 (2003)

The Importance of Spheroidal and Mixed Mergers for Early-Type Galaxy Formation. *S. Khochfar & A. Burkert.* 597, L117 (2003)

The Effect of Multiple Scattering on the Polarization from Binary Star Envelopes. I. Self- and Externally Illuminated Disks. *Jennifer L. Hoffman, Barbara A. Whitney, & Kenneth H. Nordsieck.* 598, 572 (2003)

Direct Wavelet Expansion of the Primordial Power Spectrum. *Pia Mukherjee & Yun Wang.* 598, 779 (2003)

Occurrence and Stability of Apsidal Resonance in Multiple Planetary Systems. *Ji-Lin Zhou & Yi-Sui Sun.* 598, 1290 (2003)

Modeling Dynamical Dark Energy. *R. Mainini, A. V. Macciò, S. A. Bonometto, & A. Klypin.* 599, 24 (2003)

Halo Properties in Models with Dynamical Dark Energy. *A. Klypin, A. V. Macciò, R. Mainini, & S. A. Bonometto.* 599, 31 (2003)

Thermohydrodynamics of Circumstellar Disks with High-Mass Planets. *Gennaro D'Angelo, Thomas Henning, & Willy Kley.* 599, 548 (2003)

Anisotropic Turbulence in Two-dimensional Electrom Magnetohydrodynamics. *S. Dastgeer & G. P. Zank.* 599, 715 (2003)

Axisymmetric Magnetohydrodynamic Simulations of the Collapsar Model for Gamma-Ray Bursts. *Daniel Proga, Andrew I. MacFadyen, Philip J. Armitage, & Mitchell C. Begelman.* 599, L5 (2003)

A Free, Fast, Simple, and Efficient Total Variation Diminishing Magnetohydrodynamic Code. *Ue-Li Pen, Phil Arras, & ShingKwong Wong.* 149, 447 (2003)

METHODS: OBSERVATIONAL

Predictions for Cosmological Infrared Surveys from Space with the Multiband Imaging Photometer for *SIRTF*. *H. Dole, G. Lagache, & J.-L. Puget.* 585, 617 (2003)

METHODS: STATISTICAL

How Sample Completeness Affects Gamma-Ray Burst Classification. *Jon Hakkila, Timothy W. Giblin, Richard J. Roiger, David J. Haglin, William S. Paciesas, & Charles A. Meegan.* 582, 320 (2003)

Improved Astrometry and Photometry for the Luyten Catalog. I. Bright Stars. *Andrew Gould & Samir Salim.* 582, 1001 (2003)

Improved Astrometry and Photometry for the Luyten Catalog. II. Faint Stars and Revised Catalog. *Samir Salim & Andrew Gould.* 582, 1011 (2003)

Large-Scale Turbulence in Molecular Clouds. *Christopher M. Brunt.* 583, 280 (2003)

Cosmological Perturbation Theory Using the Schrödinger Equation. *István Szapudi & Nick Kaiser.* 583, L1 (2003)

How Sensitive Are Weak Lensing Statistics to Dark Energy Content? *Dipak Munshi & Yun Wang.* 583, 566 (2003)

Statistics of Smoothed Cosmic Fields in Perturbation Theory. I. Formation and Useful Formulae in Second-Order Perturbation Theory. *Takahiko Matsubara.* 584, 1 (2003)

The Universality of Turbulence in the Molecular Interstellar Medium and Its Exploitation as a Distance Estimator. *Christopher M. Brunt.* 584, 293 (2003)

Average Spectra of Massive Galaxies in the Sloan Digital Sky Survey. *Daniel J. Eisenstein, David W. Hogg, Masataka Fukugita, Osamu Nakamura, Mariangela Bernardi, Douglas P. Finkbeiner, David J. Schlegel, J. Brinkmann, Andrew J. Connolly, István Csabai, James E. Gunn, Željko Ivezić, Don Q. Lamb, Jon Loveday, Jeffrey A. Munn, Robert C. Nichol, Donald P. Schneider, Michael A. Strauss, Alex Szalay, & Don G. York.* 585, 694 (2003)

Transit Target Selection Using Reduced Proper Motions. *Andrew Gould & Christopher W. Morgan.* 585, 1056 (2003)

Deprojecting Densities from Angular Cross-Correlations. *Daniel J. Eisenstein.* 586, 718 (2003)

The Rate and the Origin of Type Ia Supernovae in Radio Galaxies. *Massimo Della Valle & Nino Panagia.* 587, L71 (2003)

The Luminosity Function of *IRAS* Point Source Catalog Redshift Survey Galaxies. *Tsutomu T. Takeuchi, Kohji Yoshikawa, & Takako T. Ishii.* 587, L89 (2003)

Age, Metallicity, and Star Formation History of Cluster Galaxies at $z \sim 0.3$. *P. Merluzzi, F. La Barbera, M. Massarotti, G. Busarello, & M. Capaccioli.* 589, 147 (2003)

Universal Behavior of Phase Correlations in Nonlinear Gravitational Clustering. *Peter Watts, Peter Coles, & Adrian Melott.* 589, L61 (2003)

Karhunen-Loève Estimation of the Power Spectrum Parameters from the Angular Distribution of Galaxies in Early Sloan Digital Sky Survey Data. *Alexander S. Szalay, Bhuvnesh Jain, Takahiko Matsubara, Ryan Scranton, Michael S. Vogeley, Andrew Connelly, Scott Dodelson, Daniel Eisenstein, Joshua A. Frieman, James E. Gunn, Lam Hui, David Johnston, Stephen Kent, Martin Kerscher, Jon Loveday, Avery Meiksin, Vijay Narayanan, Robert C. Nichol, Liam O'Connell, Adrian Pope, Roman Scoccimarro, Ravi K. Sheth, Albert Stebbins, Michael A. Strauss, István Szapudi, Max Tegmark, Idit Zehavi, James Annis, Neta Bahcall, Jon Brinkmann, István Csabai, Masataka Fukugita, Greg Hennessy, Željko Ivezic, Gillian R. Knapp, Peter A. Kunszt, Don Q. Lamb, Brian C. Lee, Robert H. Lupton, Jeffrey A. Munn, John Peoples, Jeffrey R. Pier, Constance Rockosi, David Schlegel, Christopher Stoughton, Douglas L. Tucker, Brian Yanny, & Donald G. York.* 591, 1 (2003)

On the Mass-Ratio Distribution of Spectroscopic Binaries. *Dorit Goldberg, Tsevi Mazeh, & David W. Latham.* 591, 397 (2003)

Phase Correlations in Non-Gaussian Fields. *Takahiko Matsubara.* 591, L79 (2003)

A Bayesian Analysis of the Cepheid Distance Scale. *Thomas G. Barnes III, W. H. Jefferys, J. O. Berger, Peter J. Mueller, K. Orr, & R. Rodriguez.* 592, 539 (2003)

On the Use of Fractional Brownian Motion Simulations to Determine the Three-dimensional Statistical Properties of Interstellar Gas. *M.-A. Miville-Deschênes, F. Levrier, & E. Falgarone.* 593, 831 (2003)

First-Year *Wilkinson Microwave Anisotrophy Probe* (*WMAP*) Observations: Parameter Estimation Methodology. *L. Verde, H. V. Peiris, D. N. Spergel, M. R. Nolta, C. L. Bennett, M. Halpern, G. Hinshaw, N. Jarosik, A. Kogut, M. Limon, S. S. Meyer, L. Page, G. S. Tucker, E. Wollack, & E. L. Wright.* 148, 195 (2003)

Intrinsic, Observed, and Retrieved Properties of Interstellar Turbulence. *Christopher M. Brunt, Mark H. Heyer, Enrique Vázquez-Semadeni, & Bárbara Pichardo.* 595, 824 (2003)

Photospheric Magnetic Field Properties of Flaring versus Flare-Quiet Active Regions. III. Discriminant Analysis. *K. D. Leka & G. Barnes.* 595, 1296 (2003)

Three-dimensional Statistics of Radio Polarimetry. *Mark M. McKinnon.* 148, 519 (2003)

High-Resolution Simulations of Non-Gaussian Cosmic Microwave Background Maps in Spherical Coordinates. *M. Liguori, S. Matarrese, & L. Moscardini.* 597, 57 (2003)

Variability of EGRET Gamma-Ray Sources. *P. L. Nolan, W. F. Tompkins, I. A. Grenier, & P. F. Michelson.* 597, 615 (2003)

Probing Dark Energy with Baryonic Acoustic Oscillations from Future Large Galaxy Redshift Surveys. *Hee-Jong Seo & Daniel J. Eisenstein.* 598, 720 (2003)

MINOR PLANETS, ASTEROIDS

Occultation Searches for Kuiper Belt Objects. *Asantha Cooray & Alison J. Farmer.* 587, L125 (2003)

Kuiper Belt Object Sizes and Distances from Occultation Observations. *Asantha Cooray.* 589, L97 (2003)

Recent Origin of the Solar System Dust Bands. *David Nesvorný, William F. Bottke, Harold F. Levison, & Luke Dones.* 591, 486 (2003)

Evaporation of Interstellar Organic Materials in the Solar Nebula. *Hideyuki Nakano, Akira Kouchi, Shogo Tachibana, & Akira Tsuchiyama.* 592, 1252 (2003)

Stable 1:2 Resonant Periodic Orbits in Elliptic Three-Body Systems. *Nader Haghighipour, Jocelyn Couetdic, Ferenc Varadi, & William B. Moore.* 596, 1332 (2003)

MOLECULAR DATA

Laboratory Precision Measurements of the Rotational Spectrum of $^{12}C^{17}O$ and $^{13}C^{17}O$. *Gabriele Klapper, Leonid Surin, Frank Lewen, Holger S. P. Müller, Igor Pak, & Gisbert Winnewisser.* 582, 262 (2003)

The Molecular Line Opacity of MgH in Cool Stellar Atmospheres. *P. F. Weck, A. Schweitzer, P. C. Stancil, P. H. Hauschildt, & K. Kirby.* 582, 1059 (2003)

FeH Absorption in the Near-Infared Spectra of Late M and L Dwarfs. *Michael Cushing, John T. Rayner, Sumner P. Davis, & William D. Vacca.* 582, 1066 (2003)

$B' \leftarrow X$ Rovibrationally Resolved Photodissociation of ^{24}MgH. *P. F. Weck, P. C. Stancil, & K. Kirby.* 582, 1263 (2003)

Luminescence from Vacuum-Ultraviolet–irradiated Cosmic Ice Analogs and Residues. *Murthy S. Gudipati, Jason P. Dworkin, Xavier D.F. Chillier, & Louis J. Allamandola.* 583, 514 (2003)

The Molecular Continuum Opacity of ^{24}MgH in Cool Stellar Atmospheres. *P. F. Weck, A. Schweitzer, P. C. Stancil, P. H. Hauschildt, & K. Kirby.* 584, 459 (2003)

Trans-Ethyl Methyl Ether: Assignments and Predictions up to 400 GHz for the Vibrational-Torsional Ground State. *Ulrike Fuchs, Gisbert Winnewisser, Peter Groner, Frank C. De Lucia, & Eric Herbst.* 144, 277 (2003)

Rotational Spectra of the Nitrogen-Sulfur Carbon NC_nS, n = 1–7. *M. C. McCarthy, A. L. Cooksy, S. Mohamed, V. D. Gordon, & P. Thaddeus.* 144, 287 (2003)

A Concise New Look at the *l*-Type Spectrum of $H^{12}C^{14}N$. *S. Thorwirth, H. S. P. Müller, F. Lewen, S. Brünken, V. Ahrens, & G. Winnewisser.* 585, L163 (2003)

An Atlas of the Intersystem Transitions of CO. *M. Eidelsberg & F. Rostas.* 145, 89 (2003)

Precise Millimeter-Wave Laboratory Frequences for CS and $C^{34}S$. *C. A. Gottlieb, P. C. Myers, & P. Thaddeus.* 588, 655 (2003)

Dependence of H_2CO and CH_3OH Formation on Temperature and Thickness of H_2O-CO Ice during the Successive Hydrogenation of CO. *Naoki Watanabe, Takahiro Shiraki, & Akira Kouchi.* 588, L121 (2003)

Saturated Hydrocarbons in Comet 153P/Ikeya-Zhang: Ethane, Methane, and Monodeuterio-Methane. *Hideyo Kawakita, Jun-ichi Watanabe, Daisuke Kinoshita, Masateru Ishiguro, & Ryosuke Nakamura.* 590, 573 (2003)

The Radio Spectrum of the Phenyl Radical. *R. J. McMahon, M. C. McCarthy, C. A. Gottlieb, J. B. Dudek, J. F. Stanton, & P. Thaddeus.* 590, L61 (2003)

Accurate Laboratory Wavelengths of the Vacuum Ultraviolet $A(\Upsilon' = 3) - X(\Upsilon'' = 0)$ Band of $^{12}C^{17}O$ and $^{12}C^{18}O$. *Christine Steinmann, Erich G. Rohwer, & Herbert Stafast.* 590, L123 (2003)

Laboratory Infrared Spectroscopy of Cationic Polycyclic Aromatic Hydrocarbon Molecules. *Jos Oomens, A. G. G. M. Tielens, Boris G. Sartakov, Gert von Helden, & Gerard Meijer.* 591, 968 (2003)

The Radio Spectrum of Si_3. *M. C. McCarthy & P. Thaddeus.* 592, L91 (2003)

Precise Laboratory Frequencies of the J = 1–0 and J = 2–1 Rotational Transitions of $C^{18}O$. *G. Cazzoli, C. Puzzarini, & A. V. Lapinov.* 592, L95 (2003)

First Detection of Doubly Deuterated Hydrogen Sulfide. *C. Vastel, T. G. Phillips, C. Ceccarelli, & J. Pearson.* 593, L97 (2003)

Rotational Rest Frequencies for FeN ($X\ ^2\Delta_i$) and Revised Spectroscopic Constants for FeC ($X\ ^3\Delta_i$). *P. M. Sheridan, L. M. Ziurys, & T. Hirano.* 593, L141 (2003)

Line Intensities and Molecular Opacities of the FeH $F\ ^4\Delta_i$–$X\ ^4\Delta_i$ Transition. *M. Dulick, C. W. Bauschlicher, Jr., Adam Burrows, C. M. Sharp, R. S. Ram, & Peter Bernath.* 594, 651 (2003)

Locally Aromatic Polycyclic Hydrocarbons as Potential Carriers of Infrared Emission Features. *Simon Petrie, Robert Stranger, & Walter W. Duley.* 594, 869 (2003)

Laboratory Spectrum of the 1_{11}–2_{02} Rotational Transition of CH_2. *Ernest A. Michael, Frank Lewen, Gisbert Winnewisser, Hiroyuki Ozeki, Hideta Habara, & Eric Herbst.* 596, 1356 (2003)

The Millimeter- and Submillimeter-Wave Spectrum of the Trans-Trans Conformer of Diethyl Ether ($C_2H_5OC_2H_5$). *Ivan Medvedev, Manfred Winnewisser, Frank C. De Lucia, Eric Herbst, Ewa Bialkowski–Jaworska, Oleksandr Desyatnyk, Lech Pszczolkowski, Zbigniew Kisiel, Enyi Yi, Lai Peng Leong, & Ryan P. A. Bettens.* 148, 593 (2003)

New Theoretical Line List for the $B'\ ^2\Sigma^+ \leftarrow X\ ^2\Sigma^+$ System of ^{24}MgH. *S. Skory, P. F. Weck, P. C. Stancil, & K. Kirby.* 148, 599 (2003)

FUSE Measurements of Rydberg Bands of Interstellar CO between 925 and 1150 Å. *Yaron Sheffer, S. R. Federman, & B.-G. Andersson.* 597, L29 (2003)

Propane on Titan. *H. G. Roe, T. K. Greathouse, M. J. Richter, & J. H. Lacy.* 597, L65 (2003)

Laboratory Submillimeter-Wave Detection of D_2H^+: A New Probe into Multiple Deuteration? *T. Hirano & T. Amano.* 597, L85 (2003)

Infrared Properties of Solid Titanium Oxides: Exploring Potential Primary Dust Condensates. *T. Posch, F. Kerschbaum, D. Fabian, H. Mutschke, J. Dorschner, A. Tamanai, & T. Henning.* 149, 437 (2003)

MOLECULAR PROCESSES

Fluorescence Efficiencies of Monodeuterio-Methane in Comets: Toward the Determination of the Deuterium/Hydrogen Ratio in Methane. *Hideyo Kawakita & Jun-ichi Watanabe.* 582, 534 (2003)

Side Group Addition to the Polycyclic Aromatic Hydrocarbon Coronene by Proton Irradiation in Cosmic Ice Analogs. *Max P. Bernstein, Marla H. Moore, Jamie E. Elsila, Scott A. Sandford, Louis J. Allamandola, & Richard N. Zare.* 582, L25 (2003)

Inferring Physical Conditions in Interstellar Clouds of H_2. *Matthew K. Browning, Jason Tumlinson, & J. Michael Shull.* 582, 810 (2003)

$B' \leftarrow X$ Rovibrationally Resolved Photodissociation of ^{24}MgH. *P. F. Weck, P. C. Stancil, & K. Kirby.* 582, 1263 (2003)

High-Resolution 3 Micron Spectroscopy of Molecules in the Mesosphere and Troposphere of Titan. *T. R. Geballe, S. J. Kim, K. S. Noll, & C. A. Griffith.* 583, L39 (2003)

Comparing Gas-Phase and Grain-catalyzed H_2 Formation. *Simon C. O. Glover.* 584, 331 (2003)

The Molecular Continuum Opacity of ^{24}MgH in Cool Stellar Atmospheres. *P. F. Weck, A. Schweitzer, P. C. Stancil, P. H. Hauschildt, & K. Kirby.* 584, 459 (2003)

Trans-Ethyl Methyl Ether: Assignments and Predictions up to 400 GHz for the Vibrational-Torsional Ground State. *Ulrike Fuchs, Gisbert Winnewisser, Peter Groner, Frank C. De Lucia, & Eric Herbst.* 144, 277 (2003)

Rotational Spectra of the Nitrogen-Sulfur Carbon NC_nS, n = 1–7. *M. C. McCarthy, A. L. Cooksy, S. Mohamed, V. D. Gordon, & P. Thaddeus.* 144, 287 (2003)

Chemical Evolution in Protostellar Envelopes: Cocoon Chemistry. *S. D. Rodgers & S. B. Charnley.* 585, 355 (2003)

Ozone Depletion from Nearby Supernovae. *Neil Gehrels, Claude M. Laird, Charles H. Jackman, John K. Cannizzo, Barbara J. Mattson, & Wan Chen.* 585, 1169 (2003)

Transition from L to T Dwarfs of the Color-Magnitude Diagram. *Takashi Tsuji & Tadashi Nakajima.* 585, L151 (2003)

Solid-Phase Formation of Interstellar Vinyl Alchohol. *R. L. Hudson & M. H. Moore.* 586, L107 (2003)

CH, CO, and $E(B-V)$ as Molecular Gas Tracers in a Translucent Cloud. *Loris Magnani, Raymond J. Chastain, Hyekyung Clarisse Kim, Dap Hartmann, Anthony T. Truong, & Patrick Thaddeus.* 586, 1111 (2003)

An S_2 Fluorescence Model for Interpreting High-Resolution Cometary Spectra. I. Model Description and Initial Results. *Celine Reyle & D. C. Boice.* 587, 464 (2003)

Radiative Relaxation and Isomeric Branching of Highly Excited H/C/N: The Importance of Delocalized Vibrational States. *Troy Barger, Alec M. Wodtke, & Joel M. Bowman.* 587, 841 (2003)

Precise Millimeter-Wave Laboratory Frequences for CS and $C^{34}S$. *C. A. Gottlieb, P. C. Myers, & P. Thaddeus.* 588, 655 (2003)

Nonequilibrium CO Chemistry in the Solar Atmosphere. *A. Asensio Ramos, J. Trujillo Bueno, M. Carlsson, & J. Cernicharo.* 588, L61 (2003)

Theoretical Spectra and Atmospheres of Extrasolar Giant Planets. *David Sudarsky, Adam Burrows, & Ivan Hubeny.* 588, 1121 (2003)

Dependence of H_2CO and CH_3OH Formation on Temperature and Thickness of H_2O-CO Ice during the Successive Hydrogenation of CO. *Naoki Watanabe, Takahiro Shiraki, & Akira Kouchi.* 588, L121 (2003)

The Radio Spectrum of the Phenyl Radical. *R. J. McMahon, M. C. McCarthy, C. A. Gottlieb, J. B. Dudek, J. F. Stanton, & P. Thaddeus.* 590, L61 (2003)

Photodestruction of Relevant Interstellar Molecules in Ice Mixtures. *Hervé Cottin, Marla H. Moore, & Yves Bénilan.* 590, 874 (2003)

Submillimeter Wave Astronomy Satellite Mapping Observations of Water Vapor around Sagittarius B2. *David A. Neufeld, Edwin A. Bergin, Gary J. Melnick, & Paul F. Goldsmith.* 590, 882 (2003)

Enhanced Deuterium Fractionation in Dense Interstellar Cores Resulting from Multiply Deuterated H_3^+. *Helen Roberts, Eric Herbst, & T. J. Millar.* 591, L41 (2003)

Multiwavelength Spectroscopy of the Bipolar Outflow from Cepheus E. *Michael D. Smith, Dirk Froebrich, & Jochen Eislöffel.* 592, 245 (2003)

The Radio Spectrum of Si_3. *M. C. McCarthy & P. Thaddeus.* 592, L91 (2003)

First Detection of Doubly Deuterated Hydrogen Sulfide. *C. Vastel, T. G. Phillips, C. Ceccarelli, & J. Pearson.* 593, L97 (2003)

Beyond the T Dwarfs: Theoretical Spectra, Colors, and Detectability of the Coolest Brown Dwarfs. *Adam Burrows, David Sudarsky, & Jonathan I. Lunine.* 596, 587 (2003)

Measurement of the Kinetic Energy of Hydrogen Molecules Desorbing from Amorphous Water Ice. *J. E. Roser, S. Swords, G. Vidali, G. Manicò, & V. Pirronello.* 596, L55 (2003)

Facile Generation and Storage of Polycyclic Aromatic Hydrocarbon Ions in Astrophysical Ices. *Murthy S. Gudipati & Louis J. Allamandola.* 596, L195 (2003)

Molecular Hydrogen Excitation in Ultraluminous Infrared Galaxies. *R. I. Davies, A. Sternberg, M. Lehnert, & L. E. Tacconi-Garman.* 597, 907 (2003)

Effects of a Decaying Cosmological Term on the Formation of Molecules and First Objects. *M. Hashimoto, T. Kamikawa, & K. Arai.* 598, 13 (2003)

MOON

Heliocentric Dependence of the Sodium Emission of Comet 153P/Ikeya-Zhang. *Jun-ichi Watanabe, Hideyo Kawakita, Reiko Furusho, & Mitsugu Fujii.* 585, L159 (2003)

Helium in Lunar Samples Analyzed by High-Resolution Stepwise Etching: Implications for the Temporal Constancy of Solar Wind Isotopic Composition. *Veronika S. Heber, Heinrich Baur, & Rainer Wieler.* 597, 602 (2003)

NEBULAE: INDIVIDUAL

Name: ρ Ophiuchi

Distribution of the C I Emission in the ρ Ophiuchi Dark Cloud. *Kazuhisa Kamegai, Masafumi Ikeda, Hiroyuki Maezawa, Tetsuya Ito, Mitsuhiro Iwata, Takeshi Sakai, Tomoharu Oka, Satoshi Yamamoto, Yutaro Sekimoto, Ken'ichi Tatematsu, Takashi Noguchi, Shuji Saito, Hideo Fujiwara, Hiroyuki Ozeki, Junji Inatani, & Masatoshi Ohishi.* 589, 378 (2003)

NEBULAE: SUPERNOVA REMNANTS

On the Determination of Ejecta Structure and Explosion Asymmetry from the X-Ray Knots of Cassiopeia A. *J. Martin Laming & Una Hwang.* 597, 347 (2003)

NEUTRINOS

Off-Axis Neutrino Scattering in Gamma-Ray Burst Central Engines. *Warner A. Miller, Nathan D. George, Arkady Kheyfets, & John M. McGhee.* 583, 833 (2003)

Our Sun. IV. The Standard Model and Helioseismology: Consequences of Uncertainties in Input Physics and in Observed Solar Parameters. *Arnold I. Boothroyd & I.-Juliana Sackmann.* 583, 1004 (2003)

Search for Point Sources of High-Energy Neutrinos with AMANDA. *J. Ahrens, X. Bai, G. Barouch, S. W. Barwick, R. C. Bay, T. Becka, K.-H. Becker, D. Bertrand, F. Binon, A. Biron, S. Boeser, O. Botner, A. Bouchta, O. Bouhali, T. Burgess, S. Carius, T. Castermans, D. Chirkin, J. Conrad, J. Cooley, D. F. Cowen, A. Davour, C. De Clercq, T. DeYoung, P. Desiati, J.-P. Dewulf, P. Doksus, J. Edsjö, P. Ekström, T. Feser, T. K. Gaisser, M. Gaug, L. Gerhardt, A. Goldschmidt, A. Hallgren, F. Halzen, K. Hanson, R. Hardtke, T. Hauschildt, M. Hellwig, P. Herquet, G. C. Hill, P. O. Hulth, K. Hultqvist, S. Hundertmark, J. Jacobsen, A. Karle, J. Kim, L. Köpke, M. Kowalski, K. Kuehn, J. I. Lamoureux, H. Leich, M. Leuthold, P. Lindahl, J. Madsen, P. Marciniewski, H. Matis, C. P. McParland, T. C. Miller, Y. Minaeva, P. Miocinović, P. C. Mock, R. Morse, T. Neunhöffer, P. Niessen, D. R. Nygren, H. Ögelman, P. Olbrechts, C. Pérez de los Heros, A. C. Pohl, P. B. Price, G. T. Przybylski, K. Rawlins, E. Resconi, W. Rhode, M. Ribordy, S. Richter, J. Rodríguez Martino, P. Romenesko, D. Ross, H.-G. Sander, T. Schmidt, D. Schneider, R. Schwarz, A. Silvestri, M. Solarz, G. M. Spiczak, C. Spiering, D. Steele, P. Steffen, R. G. Stokstad, K.-H. Sulanke, I. Taboada, L. Thollander, S. Tilav, C. Walck, C. Weinheimer, C. H. Wiebusch, C. Wiedemann, R. Wischnewski, H. Wissing, K. Woschnagg, W. Wu, G. Yodh, & S. Young (The AMANDA Collaboration).* 583, 1040 (2003)

Electron Neutrino Pair Annihilation: A New Source for Muon and Tau Neutrinos in Supernovae. *Robert Buras, Hans-Thomas Janka, Mathias Th. Keil, Georg G. Raffelt, & Markus Rampp.* 587, 320 (2003)

Neutrinos from Accreting Neutron Stars. *Luis A. Anchordoqui, Diego F. Torres, Thomas P. McCauley, Gustavo E. Romero, & Felix A. Aharonian.* 589, 481 (2003)

Monte Carlo Study of Supernova Neutrino Spectra Formation. *Mathias Th. Keil, Georg G. Raffelt, & Hans-Thomas Janka.* 590, 971 (2003)

Neutrinos from the Propagation of a Relativistic Jet through a Star. *Jason Pruet.* 591, 1104 (2003)

Shock Breakout in Core-Collapse Supernovae and Its Neutrino Signature. *Todd A. Thompson, Adam Burrows, & Philip A. Pinto.* 592, 434 (2003)

Gamma-Ray Bursts from Neutron Star Kicks. *Y. F. Huang, Z. G. Dai, T. Lu, K. S. Cheng, & X. F. Wu.* 594, 919 (2003)

Time-Series Analysis of Super-Kamiokande Measurements of the Solar Neutrino Flux. *P. A. Sturrock.* 594, 1102 (2003)

Anisotropic Neutrino Radiation in Rotational Core Collapse. *Kei Kotake, Shoichi Yamada, & Katsuhiko Sato.* 595, 304 (2003)

Solar Seismic Models and the Neutrino Predictions. *S. Couvidat, S. Turck-Chièze, & A. G. Kosovichev.* 599, 1434 (2003)

NUCLEAR REACTIONS

Relics of Subluminous Supernovae in Metal-poor Stars. *Takuji Tsujimoto & Toshikazu Shigeyama.* 584, L87 (2003)

NUCLEAR REACTIONS, NUCLEOSYNTHESIS, ABUNDANCES

Limits to the Cassciopeia A ^{44}Ti Line Flux and Constraints on the Ejecta Energy and the Compact Source. *R. E. Rothschild & R. E. Lingenfelter.* 582, 257 (2003)

Observed and Physical Properties of Core-Collapse Supernovae. *Mario Hamuy.* 582, 905 (2003)

Cool Bottom Processes on the Thermally Pulsing Asymptotic Giant Branch and the Isotopic Composition of Circumstellar Dust Grains. *Kenneth M. Nollett, M. Busso, & G. J. Wasserburg.* 582, 1036 (2003)

Stellar Neutron Capture on Promethium: Implications for the *s*-Process Neutron Density. *R. Reifarth, C. Arlandini, M. Heil, F. Käppeler, P. V. Sedyshev, A. Mengoni, M. Herman, T. Rauscher, R. Gallino, & C. Travaglio.* 582, 1251 (2003)

Iron-rich Ejecta in the Supernova Remnant DEM L71. *John P. Hughes, Parviz Ghavamian, Cara E. Rakowski, & Patrick O. Slane.* 582, L95 (2003)

The *s*-Process Branching at ^{185}W. *K. Sonnabend, P. Mohr, K. Vogt, A. Zilges, A. Mengoni, T. Rauscher, H. Beer, F. Käppeler, & R. Gallino.* 583, 506 (2003)

Updated Formula for Calculating Partial Cross Sections for Nuclear Reactions of Nuclei with $Z \leq 28$ and $E > 150$ MeV per Nucleon in Hydrogen Targets. *W. R. Webber, A. Soutoul, J. C. Kish, & J. M. Rockstroh.* 144, 153 (2003)

The Chemical Composition of White Dwarfs as a Test of Convective Efficiency during Core Helium Burning. *Oscar Straniero, Immaculada Domínguez, Gianluca Imbriani, & Luciano Piersanti.* 583, 878 (2003)

Photodisintegration-triggered Nuclear Energy Release in Superbursts. *Hendrik Schatz, Lars Bildsten, & Andrew Cumming.* 583, L87 (2003)

p-Process Nucleosynthesis inside Supernova-driven Supercritical Accretion Disks. *Shin-ichirou Fujimoto, Masa-aki Hashimoto, Osamu Koike, Kenzo Arai, & Ryuichi Matsuba.* 585, 418 (2003)

Diffusive Nuclear Burning in Neutron Star Envelopes. *Philip Chang & Lars Bildsten.* 585, 464 (2003)

Magnetic Protoneutron Star Winds and *r*-Process Nucleosynthesis. *Todd A. Thompson.* 585, L33 (2003)

On the Baryometric Status of ^{3}He. *Elisabeth Vangioni-Flam, Keith A. Olive, Brian D. Fields, & Michel Cassé.* 585, 611 (2003)

Measurement of the Europium Isotope Ratio for the Extremely Metal-poor, *r*-Process–enhanced Star CS 31082-001. *Wako Aoki, Satoshi Honda, Timothy C. Beers, & Christopher Sneden.* 586, 506 (2003)

Challenging Cosmic-Ray Propagation with Antiprotons: Evidence for a "Fresh" Nuclei Component? *Igor V. Moskalenko, Andrew W. Strong, Stepan G. Mashnik, & Jonathan F. Ormes.* 586, 1050 (2003)

On the Variation of Deuterium and Oxygen Abundances in the Local Interstellar Medium. *Gary Steigman.* 586, 1120 (2003)

Determination of Primordial Metallicity and Mixing in the Type II-P Supernova 1993W. *E. Baron, Peter E. Nugent, David Branch, Peter H. Hauschildt, M. Turatto, & E. Cappellaro.* 586, 1199 (2003)

Nucleosynthesis in Gamma-Ray Burst Accretion Disks. *Jason Pruet, S. E. Woosley, & R. D. Hoffman.* 586, 1254 (2003)

s-Process Nucleosynthesis in Asymptotic Giant Branch Stars: A Test for Stellar Evolution. *Maria Lugaro, Falk Herwig, John C. Lattanzio, Roberto Gallino, & Oscar Straniero.* 586, 1305 (2003)

Enhancement of Resonant Thermonuclear Reaction Rates in Extremely Dense Stellar Plasmas. *Naoki Itoh, Nami Tomizawa, Shinya Wanajo, & Satoshi Nozawa.* 586, 1436 (2003)

Some Nucleosynthesis Effects Associated with *r*-Process Jets. *A. G. W. Cameron.* 587, 327 (2003)

White Dwarf Asteroseismology and the ^{12}C(α, γ)^{16}O Rate. *Travis S. Metcalfe.* 587, L43 (2003)

Jet-induced Nucleosynthesis in Misaligned Microquasars. *Yousaf M. Butt, Thomas J. Maccarone, & Nikos Prantzos.* 587, 748 (2003)

The Initial Abundance of ^{60}Fe in the Solar System. *S. Tachibana & G. R. Huss.* 588, L41 (2003)

Nuclear Composition of Gamma-Ray Burst Fireballs. *Andrei M. Beloborodov.* 588, 931 (2003)

Stellar Sources for Heavy *r*-Process Nuclei. *Y.-Z. Qian & G. J. Wasserburg.* 588, 1099 (2003)

Chemical Composition of the Early Universe. *Martin Harwit & Marco Spaans.* 589, 53 (2003)

Testing Two Nuclear Physics Approximations Used in the Standard Leaky-Box Model for the Spallogenic Production of LiBeB. *J. P. Kneller, J. R. Phillips, & T. P. Walker.* 589, 217 (2003)

The *Reuven Ramaty High Energy Solar Spectroscopic Imager* Observation of the 1809 keV Line from Galactic ^{26}Al. *D. M. Smith.* 589, L55 (2003)

The Superbubble Origin of ^{22}Ne in Cosmic Rays. *J. C. Higdon & R. E. Lingenfelter.* 590, 822 (2003)

Eddington-limited X-Ray Bursts as Distance Indicators. I. Systematic Trends and Spherical Symmetry in Bursts from 4U 1728−34. *Duncan K. Galloway, Dimitrios Psaltis, Deepto Chakrabarty, & Michael P. Muno.* 590, 999 (2003)

On Variations in the Peak Luminosity of Type Ia Supernovae. *F. X. Timmes, Edward F. Brown, & J. W. Truran.* 590, L83 (2003)

Actinides in the Source of Cosmic Rays and the Present Interstellar Medium. *R. E. Lingenfelter, J. C. Higdon, K.-L. Kratz, & B. Pfeiffer.* 591, 228 (2003)

Atomic Spectral Features during Thermonuclear Flashes on Neutron Stars. *Lars Bildsten, Philip Chang, & Frits Paerels.* 591, L29 (2003)

The Extremely Metal-poor, Neutron Capture–rich Star CS 22892−052: A Comprehensive Abundance Analysis. *Christopher Sneden, John J. Cowan, James E. Lawler, Inese I. Ivans, Scott Burles, Timothy C. Beers, Francesca Primas, Vanessa Hill, James W. Truran, George M. Fuller, Bernd Pfeiffer, & Karl-Ludwig Kratz.* 591, 936 (2003)

Evolution, Explosion, and Nucleosynthesis of Core-Collapse Supernovae. *Marco Limongi & Alessandro Chieffi.* 592, 404 (2003)

Binary Blue Metal-Poor Stars: Evidence for Asymptotic Giant Branch Mass Transfer. *Christopher Sneden, George W. Preston, & John J. Cowan.* 592, 504 (2003)

Constraints on the Origin of Manganese from the Composition of the Sagittarius Dwarf Spheroidal Galaxy and the Galactic Bulge. *Andrew McWilliam, R. Michael Rich, & Tammy A. Smecker-Hane.* 592, L21 (2003)

Chemical Substructure in the Milky Way Halo: A New Population of Old Stars. *Inese I. Ivans, Christopher Sneden, C. Renée James, George W. Preston, Jon P. Fulbright, Peter A. Höflich, Bruce W. Carney, & J. Craig Wheeler.* 592, 906 (2003)

Europium Isotope Ratios in *s*-Process Element-enhanced Metal-poor Stars: A New Probe of the ^{151}Sm Branching. *Wako Aoki, Sean G. Ryan, Nobuyuki Iwamoto, Timothy C. Beers, John E. Norris, Hiroyasu Ando, Toshitaka Kajino, Grant J. Mathews, & Masayuki Y. Fujimoto.* 592, L67 (2003)

Thermal X-Ray Emission from Shocked Ejecta in Type Ia Supernova Remnants. Prospects for Explosion Mechanism Identification. *Carles Badenes, Eduardo Bravo, Kazimierz J. Borkowski, & Inmaculada Domínguez.* 593, 358 (2003)

Isotopic Compositions of Strontium, Zirconium, Molybdenum, and Barium in Single Presolar SiC Grains and Asymptotic Giant Branch Stars. *Maria Lugaro, Andrew M. Davis, Roberto Gallino, Michael J. Pellin, Oscar Straniero, & Franz Käppeler.* 593, 486 (2003)

On the Spectrum and Spectropolarimetry of Type Ic Hypernova SN 2003dh/GRB 030329. *K. S. Kawabata, J. Deng, L. Wang, P. Mazzali, K. Nomoto, K. Maeda, N. Tominaga, H. Umeda, M. Iye, G. Kosugi, Y. Ohyama, T. Sasaki, P. Höflich, J. C. Wheeler, D. J. Jeffery, K. Aoki, N. Kashikawa, T. Takata, N. Kawai, T. Sakamoto, Y. Urata, A. Yoshida, T. Tamagawa, K. Torii, W. Aoki, N. Kobayashi, Y. Komiyama, Y. Mizumoto, J. Noumaru, R. Ogasawara, K. Sekiguchi, Y. Shirasaki, T. Totani, J. Watanabe, & T. Yamada.* 593, L19 (2003)

Iron Abundance in the Intracluster Medium at High Redshift. *P. Tozzi, P. Rosati, S. Ettori, S. Borgani, V. Mainieri, & C. Norman.* 593, 705 (2003)

The *r*-Process in Supernovae Explosions from the Collapse of O-Ne-Mg Cores. *Shinya Wanajo, Masaya Tamamura, Naoki Itoh, Ken'ichi Nomoto, Yuhri Ishimaru, Timothy C. Beers, & Satoshi Nozawa.* 593, 968 (2003)

The *s*-Process in Rotating Asymptotic Giant Branch Stars. *Falk Herwig, Norbert Langer, & Maria Lugaro.* 593, 1056 (2003)

Nuclear Partition Functions at Temperatures Exceeding 10^{10} K. *T. Rauscher.* 147, 403 (2003)

The Predictable Collateral Consequences of Nucleosynthesis by Spallation Reactions in the Early Solar System. *I. Leya, A. N. Halliday, & R. Wieler.* 594, 605 (2003)

Neutron-rich Hydromagnetic Outflows in Gamma-Ray Burst Sources. *Nektarios Vlahakis, Fang Peng, & Arieh Königl.* 594, L23 (2003)

On the Origin of HE 0107−5240, the Most Iron-deficient Star Presently Known. *Marco Limongi, Alessandro Chieffi, & Piercarlo Bonifacio.* 594, L123 (2003)

Nucleosynthesis in Baryon-Rich Outflows Associated with Gamma-Ray Bursts. *Susumu Inoue, Nobuyuki Iwamoto, Manabu Orito, & Mariko Terasawa.* 595, 294 (2003)

Pion Production in the Inner Disk Around Cygnus X-1. *Cesar Meirelles Filho, Celso L. Lima, Hideaki Miyake, & Varese Timoteo.* 595, 322 (2003)

Damped Lyα Gas Metallicities at Redshifts $z = 0.9$–2.0 from Sloan Digital Sky Survey Spectra. *Daniel B. Nestor, Sandhya M. Rao, David A. Turnshek, & Daniel Vanden Berk.* 595, L5 (2003)

The Response of Model and Astrophysical Thermonuclear Flames to Curvature and Stretch. *L. J. Dursi, M. Zingale, A. C. Calder, B. Fryxell, F. X. Timmes, N. Vladimirova, R. Rosner, A. Caceres, D. Q. Lamb, K. Olson, P. M. Ricker, K. Riley, A. Siegel, & J. W. Truran.* 595, 955 (2003)

Physical Implications of *RHESSI* Neutron-Capture Line Measurements. *R. J. Murphy, G. H. Share, X.-M. Hua, R. P. Lin, D. M. Smith, & R. A. Schwartz.* 595, L93 (2003)

^{138}L Anomaly in the Early Solar System. *Jason Jiun-San Shen & Typhoon Lee.* 596, L109 (2003)

On Nonprimordial Deuterium Production by Accelerated Particles. *Tijana Prodanović & Brian D. Fields.* 597, 48 (2003)

Where Was the Iron Synthesized in Cassiopeia A? *Una Hwang & J. Martin Laming.* 597, 362 (2003)

Helium in Lunar Samples Analyzed by High-Resolution Stepwise Etching: Implications for the Temporal Constancy of Solar Wind Isotopic Composition. *Veronika S. Heber, Heinrich Baur, & Rainer Wieler.* 597, 602 (2003)

The Impact of the Chemical Stratification of White Dwarfs on the Classification of Classical Novae. *Jordi José, Margarita Hernanz, Enrique García-Berro, & Pilar Gil-Pons.* 597, L41 (2003)

A Presolar Galactic Merger Spawned the SiC-Grain Mainstream. *Donald D. Clayton.* 598, 313 (2003)

The Cosmological Baryon Density from the Deuterium-to-Hydrogen Ratio in QSO Absorption Systems: D/H toward Q1243+3047. *David Kirkman, David Tytler, Nao Suzuki, John M. O'Meara, & Dan Lubin.* 149, 1 (2003)

Estimates of Stellar Weak Interaction Rates for Nuclei in the Mass Range $A = 65$–80. *Jason Pruet & George M. Fuller.* 149, 187 (2003)

Bipolar Supernova Explosions: Nucleosynthesis and Implications for Abundances in Extremely Metal-Poor Stars. *Keiichi Maeda & Ken'ichi Nomoto.* 598, 1163 (2003)

A New ^{17}F$(p, \gamma)^{18}$Ne Reaction Rate and Its Implications for Nova Nucleosynthesis. *S. Parete-Koon, W. R. Hix, M. S. Smith, S. Starrfield, D. W. Bardayan, M. W. Guidry, & A. Mezzacappa.* 598, 1239 (2003)

The Type Ic Hypernova SN 2003dh/GRB 030329. *Paolo A. Mazzali, Jinsong Deng, Nozomu Tominaga, Keiichi Maeda, Ken'ichi Nomoto, Thomas Matheson, Koji S. Kawabata, Krzysztof Z. Stanek, & Peter M. Garnavich.* 599, L95 (2003)

NUCLEOSYNTHESIS

Relics of Subluminous Supernovae in Metal-poor Stars. *Takuji Tsujimoto & Toshikazu Shigeyama.* 584, L87 (2003)

Explosive Nucleosynthesis Associated with Formation of Jet-induced Gamma-Ray Bursts in Massive Stars. *S. Nagataki, A. Mizuta, S. Yamada, H. Takabe, & K. Sato.* 596, 401 (2003)

OCCULTATIONS

Scintillation Caustics in Planetary Occultation Light Curves. *Asantha R. Cooray & J. L. Elliot.* 587, L121 (2003)

Occultation Searches for Kuiper Belt Objects. *Asantha Cooray & Alison J. Farmer.* 587, L125 (2003)

Measuring the Oblateness and Rotation of Transiting Extrasolar Giant Planets. *Jason W. Barnes & Jonathan J. Fortney.* 588, 545 (2003)

Kuiper Belt Object Sizes and Distances from Occultation Observations. *Asantha Cooray.* 589, L97 (2003)

Microlensing of Large Sources. *Eric Agol.* 594, 449 (2003)

Sensitivity of Transit Searches to Habitable-Zone Planets. *Andrew Gould, Joshua Pepper, & D. L. DePoy.* 594, 533 (2003)

A Search for Small Kuiper Belt Objects by Stellar Occultations. *F. Roques, M. Moncuquet, N. Lavillonière, M. Auvergne, M. Chevreton, F. Colas, & J. Lecacheux.* 594, L63 (2003)

PLANETS: RINGS

Probing Structures of Distant Extrasolar Planets with Microlensing. *B. Scott Gaudi, Heon-Young Chang, & Cheongho Han.* 586, 527 (2003)

PLANETS AND SATELLITES: GENERAL

Transit Target Selection Using Reduced Proper Motions. *Andrew Gould & Christopher W. Morgan.* 585, 1056 (2003)

Probing Structures of Distant Extrasolar Planets with Microlensing. *B. Scott Gaudi, Heon-Young Chang, & Cheongho Han.* 586, 527 (2003)

Saturation of the Corotation Resonance in a Gaseous Disk. *G. I. Ogilvie & S. H. Lubow.* 587, 398 (2003)

"Weather" Variability of Close-in Extrasolar Giant Planets. *Kristen Menou, James Y-K. Cho, Sara Seager, & Bradley M. S. Hansen.* 587, L113 (2003)

The Changing Face of the Extrasolar Giant Planet HD 209458b. *Kristen Menou, James Y-K. Cho, Bradley M. S. Hansen, & Sara Seager.* 587, L117 (2003)

Measuring the Oblateness and Rotation of Transiting Extrasolar Giant Planets. *Jason W. Barnes & Jonathan J. Fortney.* 588, 545 (2003)

Theoretical Spectra and Atmospheres of Extrasolar Giant Planets. *David Sudarsky, Adam Burrows, & Ivan Hubeny.* 588, 1121 (2003)

Spiderweb Masks for High-Contrast Imaging. *Robert J. Vanderbei, David N. Spergel, & N. Jeremy Kasdin.* 590, 593 (2003)

On the Radii of Extrsolar Giant Planets. *Peter Bodenheimer, Gregory Laughlin, & Douglas N. C. Lin.* 592, 555 (2003)

Secular Evolution of Hierarchical Planetary Systems. *Man Hoi Lee & S. J. Peale.* 592, 1201 (2003)

A Theory for the Radius of the Transiting Giant Planet HD 209458b. *Adam Burrows, D. Sudarsky, & W. B. Hubbard.* 594, 545 (2003)

A Possible Bifurcation in Atmospheres of Strongly Irradiated Stars and Planets. *Ivan Hubeny, Adam Burrows, & David Sudarsky.* 594, 1011 (2003)

Probing the Spatial Distribution of Extrasolar Planets with Gravitational Microlensing. *Cheongho Han & Young Woon Kang.* 596, 1320 (2003)

Signs of Planetary Microlensing Signals. *Cheongho Han & Kyongae Chang.* 597, 1070 (2003)

PLANETS AND SATELLITES: FORMATION

A Reduced Efficiency of Terrestrial Planet Formation Following Giant Planet Migration. *Philip J. Armitage.* 582, L47 (2003)

Detection of Gaps in Circumstellar Disks. *J. Steinacker & Th. Henning.* 583, L35 (2003)

Protoplanetary Disk Mass Distribution in Young Binaries. *Eric L. N. Jensen & Rachel L. Akeson.* 584, 875 (2003)

Halting Planet Migration by Photoevaporation from the Central Source. *Isamu Matsuyama, Doug Johnstone, & Norman Murray.* 585, L143 (2003)

The Thermal Regulation of Gravitational Instabilities in Protoplanetary Disks. *Brian K. Pickett, Annie C. Mejía, Richard H. Durisen, Patrick M. Cassen, Donald K. Berry, & Robert P. Link.* 590, 1060 (2003)

Evaporation of Interstellar Organic Materials in the Solar Nebula. *Hideyuki Nakano, Akira Kouchi, Shogo Tachibana, & Akira Tsuchiyama.* 592, 1252 (2003)

On the Formation Timescale and Core Masses of Gas Giant Planets. *W. K. M. Rice & Philip J. Armitage.* 598, L55 (2003)

PLANETS AND SATELLITES: INDIVIDUAL

Epsilon Ring

Excitation of Orbital Eccentricities by Repeated Resonance Crossings: Requirements. *E. I. Chiang.* 584, 465 (2003)

HD 209458b

Measuring the Oblateness and Rotation of Transiting Extrasolar Giant Planets. *Jason W. Barnes & Jonathan J. Fortney.* 588, 545 (2003)

Jupiter

First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Beam Profiles and Window Functions. *L. Page, C. Barnes, G. Hinshaw, D. N. Spergel, J. L. Weiland, E. Wollack, C. L. Bennett, M. Halpern, N. Jarosik, A. Kogut, M. Limon, S. S. Meyer, G. S. Tucker, & E. L. Wright.* 148, 39 (2003)

On the Formation Timescale and Core Masses of Gas Giant Planets. *W. K. M. Rice & Philip J. Armitage.* 598, L55 (2003)

Mars

Our Sun. V. A Bright Young Sun Consistent with Helioseismology and Warm Temperatures on Ancient Earth and Mars. *J.-Juliana Sackmann & Arnold I. Boothroyd.* 583, 1024 (2003)

Nereid

The Short Rotation Period of Nereid. *Tommy Grav, Matthew J. Holman, & J. J. Kavelaars.* 591, L71 (2003)

Saturn

Scintillation Caustics in Planetary Occultation Light Curves. *Asantha R. Cooray & J. L. Elliot.* 587, L121 (2003)

Three-dimensional Dynamics of Narrow Planetary Rings. *Eugene I. Chiang & Christopher J. Culter.* 599, 675 (2003)

Titan

High-Resolution 3 Micron Spectroscopy of Molecules in the Mesosphere and Troposphere of Titan. *T. R. Geballe, S. J. Kim, K. S. Noll, & C. A. Griffith.* 583, L39 (2003)

Propane on Titan. *H. G. Roe, T. K. Greathouse, M. J. Richter, & J. H. Lacy.* 597, L65 (2003)

Oxirane: An Exotic Oxygenated Organic Compound in Titan? *Patrice Coll, Jean-Michel Bernard, Rafael Navarro-González, & François Raulin.* 598, 700 (2003)

Uranus

Excitation of Orbital Eccentricities by Repeated Resonance Crossings: Requirements. *E. I. Chiang.* 584, 465 (2003)

Three-dimensional Dynamics of Narrow Planetary Rings. *Eugene I. Chiang & Christopher J. Culter.* 599, 675 (2003)

PLASMAS

The Effect of Vacuum Polarization and Proton Cyclotron Resonances on Photon Propagation in Strongly Magnetized Plasmas. *Feryal Özel.* 583, 402 (2003)

Energy Levels, Radiative Rates, and Collision Strengths for Transitions in Fe XVII. *K. M. Aggarwal, F. P. Keenan, & A. Z. Msezane.* 144, 169 (2003)

Atomic Data and Spectral Line Intensities for Si VII. *A. K. Bhatia & E. Landi.* 585, 587 (2003)

Equation of State and Opacities for Hydrogen Atmospheres of Neutron Stars with Strong Magnetic Fields. *Alexander Y. Potekhin & Gilles Chabrier.* 585, 955 (2003)

Nonthermal Mass Motions within the High-Temperature Plasmas above a Complex Solar Active Region. *U. Feldman, E. Landi, & W. Curdt.* 585, 1087 (2003)

Electron Properties and Coulomb Collisions in the Solar Wind at 1 AU: *WIND* Observations. *C. Salem, D. Hubert, C. Lacombe, S. D. Bale, A. Mangeney, D. E. Larson, & R. P. Lin.* 585, 1147 (2003)

Lepton Acceleration by Relativistic Collisionless Magnetic Reconnection. *D. A. Larrabee, R. V. E. Lovelace, & M. M. Romanova.* 586, 72 (2003)

Enhancement of Resonant Thermonuclear Reaction Rates in Extremely Dense Stellar Plasmas. *Naoki Itoh, Nami Tomizawa, Shinya Wanajo, & Satoshi Nozawa.* 586, 1436 (2003)

Magnetohydrodynamic Simulations of Accretion to a Star in the "Propeller" Regime. *M. M. Romanova, O. D. Toropina, Yu. M. Toropin, & R. V. E. Lovelace.* 588, 400 (2003)

Magnetars in the Metagalaxy: An Origin for Ultra–High-Energy Cosmic Rays in the Nearby Universe. *Jonathan Arons.* 589, 871 (2003)

Dynamics of Relativistic Reconnection. *Maxim Lyutikov & Dmitri Uzdensky.* 589, 893 (2003)

Atomic Data and Emission-Line Intensities for Ca VII. *E. Landi & A. K. Bhatia.* 589, 1075 (2003)

Ionization Fractions of Slow Ions in a Plasma with Kappa Distributions for the Electron Velocity. *S. Wannawichian, D. Ruffolo, & Yu. Yu. Kartavykh.* 146, 443 (2003)

The Numerical Simulation of Radiative Shocks. II. Thermal Instabilities in Two-dimensional Models. *Ralph S. Sutherland, Geoffrey V. Bicknell, & Michael A. Dopita.* 591, 238 (2003)

Dissipation in Poynting-Flux–dominated Flows: The σ-Problem of the Crab Pulsar Wind. *J. G. Kirk & O. Skjaeraasen.* 591, 366 (2003)

Properties of Solar Plasmas near Solar Maximum above Two Quiet Regions at Distances of 1.02–1.34 $R_\odot$. *E. Landi & U. Feldman.* 592, 607 (2003)

Magnetic Inhibition of Accretion and Observability of Isolated Old Neutron Stars. *O. D. Toropina, M. M. Romanova, Yu. M. Toropin, & R. V. E. Lovelace.* 593, 472 (2003)

Generation of Suprathermal Electrons by Resonant Wave-Particle Interaction in the Solar Corona and Wind. *C. Vocks & G. Mann.* 593, 1134 (2003)

Free-Free Emission in the Far-Ultraviolet Spectral Range: A Resource for Diagnosing Solar and Stellar Flare Plasmas. *U. Feldman, E. Landi, G. A. Doschek, I. Dammasch, & W. Curdt.* 593, 1226 (2003)

Atomic Data and Spectral Line Intensities for S X. *A. K. Bhatia & E. Landi.* 147, 409 (2003)

Alfvénic Turbulence in the Extended Solar Corona: Kinetic Effects and Proton Heating. *S. R. Cranmer & A. A. van Ballegooijen.* 594, 573 (2003)

X-Ray Modeling of Very Young Early-Type Stars in the Orion Trapezium: Signatures of Magnetically Confined Plasmas and Evolutionary Implications. *N. S. Schulz, C. Canizares, D. Huenemoerder, & K. Tibbets.* 595, 365 (2003)

Three-Dimensional Simulations of Disk Accretion to an Inclined Dipole. I. Magnetospheric Flows at Different Θ. *M. M. Romanova, G. V. Ustyugova, A. V. Koldoba, J. V. Wick, & R. V. E. Lovelace.* 595, 1009 (2003)

Coronal Plume Heating and Kinetic Dissipation of Kinetic Alfvén Waves. *D. J. Wu & C. Fang.* 596, 656 (2003)

The Influence of Electron Impact Ionization in the Relativistic Pickup of Interstellar Neutrals. *R. Schlickeiser, M. Pohl, & R. Vainio.* 596, 840 (2003)

Transition from Collisionless to Collisional Magnetorotational Instability. *Prateek Sharma, Gregory W. Hammett, & Eliot Quataert.* 596, 1121 (2003)

Preferential Heating of Particles by H-Cyclotron Waves Generated by a Global Magnetohydrodynamic Mode in Solar Coronal Holes. *T. X. Zhang.* 597, L69 (2003)

Binary Reconnection and the Heating of the Solar Corona. *E. R. Priest, D. W. Longcope, & V. S. Titov.* 598, 667 (2003)

Atomic Data and Spectral Line Intensities for S XI. *E. Landi & A. K. Bhatia.* 149, 249 (2003)

The Cosmic Dispersion Measure from Gamma-Ray Burst Afterglows: Probing the Reionization History and the Burst Environment. *Kunihito Ioka.* 598, L79 (2003)

Spontaneous Generation of the Magnetic Field and Suppression of the Heat Conduction in Cold Fronts. *Nobuhiro Okabe & Makoto Hattori.* 599, 964 (2003)

Cosmological Magnetic Field Generation by the Weibel Instability. *R. Schlickeiser & P. K. Shukla.* 599, L57 (2003)

POLARIZATION

Mid-Infrared Imaging Polarimetry of NGC 7027. *C. A. Jurgenson, R. E. Stencel, D. S. Theil, D. I. Klebe, & T. Ueta.* 582, L35 (2003)

The Effect of Vacuum Polarization and Proton Cyclotron Resonances on Photon Propagation in Strongly Magnetized Plasmas. *Feryal Özel.* 583, 402 (2003)

The Unified Model and Evolution of Active Galaxies: Implications from a Spectropolarimetric Study. *Hien D. Tran.* 583, 632 (2003)

The Strongly Polarized Afterglow of GRB 020405. *D. Bersier, B. McLeod, P. M. Garnavich, M. J. Holman, T. Gray, J. Quinn, J. Kaluzny, P. M. Challis, R. G. Bower, D. J. Wilman, J. S. Heyl, S. T. Holland, V. Hradecky, S. Jha, & K. Z. Stanek.* 583, L63 (2003)

First Results from the Submillimeter Polarimeter for Antarctic Remote Observations: Evidence of Large-Scale Toroidal Magnetic Fields in the Galactic Center. *G. Novak, D. T. Chuss, T. Renbarger, G. S. Griffin, M. G. Newcomb, J. B. Peterson, R. F. Loewenstein, D. Pernic, & J. L. Dotson.* 583, L83 (2003)

Optical Spectropolarimetry of the GRB 020813 Afterglow. *Aaron J. Barth, Re'em Sari, Marshall H. Cohen, Robert W. Goodrich, Paul A. Price, Derek W. Fox, J. S. Bloom, Alicia M. Soderberg, & S. R. Kulkarni.* 584, L47 (2003)

Radio Polarization from the Galactic Plane in Cygnus. *B. Uyaniker, T. L. Landecker, A. D. Gray, & R. Kothes.* 585, 785 (2003)

Polarized Gravitational Waves from Gamma-Ray Bursts. *Shiho Kobayashi & Peter Mészáros.* 585, L89 (2003)

Explaining the Observed Polarization from Brown Dwarfs by Single Dust Scattering. *Sujan Sengupta.* 585, L155 (2003)

Pearson-Readhead Survey Sources. II. The Long-Term Centimeter-Band Total Flux and Linear Polarization Properties of a Complete Radio Sample. *M. F. Aller, H. D. Aller, & P. A. Hughes.* 586, 33 (2003)

The Identification of Infrared Synchrotron Radiation from Cassiopeia A. *T. J. Jones, L. Rudnick, T. DeLaney, & J. Bowden.* 587, 227 (2003)

Optical Polarization and Near-Infrared Photometry of the Proto–Planetary Nebula Henize 3-1475. *Claudia V. Rodrigues, Francisco J. Jablonski, Jane Gregorio-Hetem, Gabriel R. Hickel, & Marilia J. Sartori.* 587, 312 (2003)

Rotation Measures of Compact Sources in the Canadian Galactic Plane Survey. *J. C. Brown, A. R. Taylor, & B. J. Jackel.* 145, 213 (2003)

Lowering Infrared Cluster Magnetic Field Strengths: The Radio Galaxy Contributions. *Lawrence Rudnick & Katherine M. Blundell.* 588, 143 (2003)

Interferometric Detection of Linear Polarization from Sagittarius A* at 230 GHz. *Geoffrey C. Bower, Melvyn C. H. Wright, Heino Falcke, & Donald C. Backer.* 588, 331 (2003)

A Polarization Survey of SiO Maser Variability in Evolved Stars. *J. Glenn, P. R. Jewell, R. Fourre, & L. Miaja.* 588, 478 (2003)

Magnetic Structure of a Dark Bok Globule. *Jacques P. Vallée, Jane S. Greaves, & Jason D. Fiege.* 588, 910 (2003)

Radiative Torques on Interstellar Grains. III. Dynamics with Thermal Relaxation. *Joseph C. Weingartner & B. T. Draine.* 589, 289 (2003)

VLBI Polarimetry of 177 Sources from the Caltech–Jodrell Bank Flat-Spectrum Survey. *L. K. Pollack, G. B. Taylor, & R. T. Zavala.* 589, 733 (2003)

Toward an Empirical Theory of Pulsar Emission. VIII. Subbeam Circulation and the Polarization-Modal Structure of Conal Beams. *Joanna M. Rankin & R. Ramachandran.* 590, 411 (2003)

Discovery of Highly Dynamic Matter Enhancements along the Polar Axis and Equatorial Plane in the Luminous Blue Variable Binary HD 5980. *A. Villar-Sbaffi, Anthony F. J. Moffat, & N. St-Louis.* 590, 483 (2003)

Radio Polarization of the Young High-Magnetic-Field Pulsar PSR J1119−6127. *Fronefield Crawford & Nathan C. Keim.* 590, 1020 (2003)

The Transition between Nonorthogonal Polarization Modes in PSR B2016+28 at 1404 MHz. *Mark M. McKinnon.* 590, 1026 (2003)

Simultaneous Optical and Near-Infrared Spectropolorimetry of Type 2 Seyfert Galaxies. *Makoto Watanabe, Tetsuya Nagata, Shuji Sato, Hidehiko Nakaya, & J. H. Hough.* 591, 714 (2003)

Two-dimensional Radiative Transfer in Protostellar Envelopes. I. Effects of Geometry on Class I Sources. *Barbara A. Whitney, Kenneth Wood, J. E. Bjorkman, & Michael J. Wolff.* 591, 1049 (2003)

Magnetic Field Evolution in Bok Globules. *Sebastian Wolf, R. Launhardt, & T. Henning.* 592, 233 (2003)

On Large-Scale Magnetic Field Reversals in the Outer Galaxy. *J. C. Brown, A. R. Taylor, R. Wielebinski, & P. Mueller.* 592, L29 (2003)

The Accuracy of the Center-of-Gravity Method for Measuring Velocity and Magnetic Field Strength in the Solar Photosphere. *H. Uitenbroek.* 592, 1225 (2003)

On the Detection of the Signature of Silicon Nanoparticle Dust Grains in Coronal Holes. *Shadia Rifai Habbal, Martina Belz Arndt, Munir H. Nayfeh, Jean Arnaud, Judd Johnson, Steve Hegwer, Richard Woo, Alexandru Ene, & Feras Habbal.* 592, L87 (2003)

Modeling the Transport of Polarized Radiation Due to Scattering in Spherical Dust Shells. *David A. Joiner & Chun Ming Leung.* 593, 402 (2003)

On the Spectrum and Spectropolarimetry of Type Ic Hypernova SN 2003dh/GRB 030329. *K. S. Kawabata, J. Deng, L. Wang, P. Mazzali, K. Nomoto, K. Maeda, N. Tominaga, H. Umeda, M. Iye, G. Kosugi, Y. Ohyama, T. Sasaki, P. Höflich, J. C. Wheeler, D. J. Jeffery, K. Aoki, N. Kashikawa, T. Takata, N. Kawai, T. Sakamoto, Y. Urata, A. Yoshida, T. Tamagawa, K. Torii, W. Aoki, N. Kobayashi, Y. Komiyama, Y. Mizumoto, J. Noumaru, R. Ogasawara, K. Sekiguchi, Y. Shirasaki, T. Totani, J. Watanabe, & T. Yamada.* 593, L19 (2003)

Optical Spectropolarimetry of Quasi-stellar Objects Discovered by the Two-Micron All Sky Survey. *Paul S. Smith, Gary D. Schmidt, Dean C. Hines, & Craig B. Foltz.* 593, 676 (2003)

Analysis of the Flux and Polarization Spectra of the Type Ia Supernova SN 2001el: Exploring the Geometry of the High-Velocity Ejecta. *Daniel Kasen, Peter Nugent, Lifan Wang, D. A. Howell, J. Craig Wheeler, Peter Höflich, Dietrich Baade, E. Baron, & P. H. Hauschildt.* 593, 788 (2003)

Polarization Observations in a Low Synchrotron Emission Field at 1.4 GHz. *G. Bernardi, E. Carretti, S. Cortiglioni, R. J. Sault, M. J. Kesteven, & S. Poppi.* 594, L5 (2003)

Magnetic Field Morphology of Orion IRc2 from 86 GHz SiO Maser Polarization Images. *R. L. Plambeck, M. C. H. Wright, & R. Rao.* 594, 911 (2003)

Linear Polarization in Gamma-Ray Bursts: The Case for an Ordered Magnetic Field. *Jonathan Granot & Arieh Königl.* 594, L83 (2003)

Circular Polarization from Gamma-Ray Burst Afterglows. *Makoto Matsumiya & Kunihito Ioka.* 595, L25 (2003)

Experimental Study of Light Scattering by Large Dust Aggregates Consisting of Micron-Sized SiO_2 Monospheres. *Gerhard Wurm, Helena Relke, & Johann Dorschner.* 595, 891 (2003)

The Most Probable Cause for the High Gamma-Ray Polarization in GRB 021206. *Jonathan Granot.* 596, L17 (2003)

$H\alpha$ Impact Polarization Observed in a Gradual Flare. *Y. Hanaoka.* 596, 1347 (2003)

Three-dimensional Statistics of Radio Polarimetry. *Mark M. McKinnon.* 148, 519 (2003)

Are the Faraday Rotating Magnetic Fields Local to Intracluster Radio Galaxies? *Torsten A. Ensslin, Corina Vogt, T. E. Clarke, & Greg B. Taylor.* 597, 870 (2003)

Polarization of Prompt Gamma-Ray Burst Emission: Evidence for Electromagnetically Dominated Outflow. *M. Lyutikov, V. I. Pariev, & R. D. Blandford.* 597, 998 (2003)

Optical Pulse-Phased Photopolarimetry of PSR B0656+14. *B. Kern, C. Martin, B. Mazin, & J. P. Halpern.* 597, 1049 (2003)

Optical Polarization Observations of NGC 6231: Evidence for a Past Supernova Fingerprint. *Carlos Feinstein, Ruben Martinez, M. Marcela Vergne, Gustavo Baume, & Ruben Vazquez.* 598, 349 (2003)

Interferometric Mapping of Magnetic Fields in Star-Forming Regions. III. Dust and CO Polarization in DR 21(OH). *Shih-Ping Lai, José M. Girart, & Richard M. Crutcher.* 598, 392 (2003)

The Effect of Multiple Scattering on the Polarization from Binary Star Envelopes. I. Self- and Externally Illuminated Disks. *Jennifer L. Hoffman, Barbara A. Whitney, & Kenneth H. Nordsieck.* 598, 572 (2003)

Magnetic Maps of Prominences from Full Stokes Analysis of the He I D3 Line. *R. Casini, A. López Ariste, S. Tomczyk, & B. W. Lites.* 598, L67 (2003)

Scattering by Interstellar Dust Grains. I. Optical and Ultraviolet. *B. T. Draine.* 598, 1017 (2003)

Scattering by Interstellar Dust Grains. II. X-Rays. *B. T. Draine.* 598, 1026 (2003)

Two-dimensional Radiative Transfer in Protostellar Envelopes. II. An Evolutionary Sequence. *Barbara A. Whitney, Kenneth Wood, J. E. Bjorkman, & Martin Cohen.* 598, 1079 (2003)

A Failed Gamma-Ray Burst with Dirty Energetic Jets Spirited Away? New Implications for the Gamma-Ray Burst–Supernova Connection from SN 2002ap. *Tomonori Totani.* 598, 1151 (2003)

A Movie of a Star: Multiepoch Very Long Baseline Array Imaging of the SiO Masers toward the Mira Variable TX Cam. *P. J. Diamond & A. J. Kemball.* 599, 1372 (2003)

PULSARS

Three New Long-Period X-Ray Pulsars Discovered in the Small Magellanic Cloud. *D. J. Macomb, D. W. Fox, R. C. Lamb, & T. A. Prince.* 584, L79 (2003)

Chandra Observations of the Anomalous X-Ray Pulsar 4U 0142+61. *Sandeep K. Patel, Chryssa Kouveliotou, Peter M. Woods, Allyn F. Tennant, Martin C. Weisskopf, Mark H. Finger, Colleen Wilson-Hodge, Ersin Göğüş, Michiel van der Klis, & Tomaso Belloni.* 587, 367 (2003)

QUASARS

Relation between BL Lacertae Objects and Flat-Spectrum Radio Quasars. *J. H. Fan.* 585, L23 (2003)

Black Hole Mass and Spin Coevolution by Mergers. *Scott A. Hughes & Roger D. Blandford.* 585, L101 (2003)

The Host Galaxies of Optically Bright Quasi-stellar Objects: Molecular Gas in $z \leq 0.1$ Palomar-Green Quasi-stellar Objects. *N. Z. Scoville, D. T. Frayer, E. Schinnerer, & M. Christopher.* 585, L105 (2003)

Clear Evidence for Intranight Optical Variability in Radio-quiet Quasars. *Gopal-Krishna, C. S. Stalin, Ram Sagar, & Paul J. Wiita.* 586, L25 (2003)

Keck Spectroscopy of Four Quasi-stellar Object Host Galaxies. *J. S. Miller & A. I. Sheinis.* 588, L9 (2003)

RADIATION MECHANISMS: GENERAL

A New Kinetic Equation for Compton Scattering. *George B. Rybicki.* 584, 528 (2003)

The Phase Coherence of Light from Extragalactic Sources: Direct Evidence against First-Order Planck-Scale Fluctuations in Time and Space. *Richard Lieu & Lloyd W. Hillman.* 585, L77 (2003)

X-Ray Spectra of Young Pulsars and Their Wind Nebulae: Dependence on Spin-Down Energy Loss Rate. *E. V. Gotthelf.* 591, 361 (2003)

Probing Planck-Scale Physics with Extragalactic Sources? *Y. Jack Ng, W. A. Christiansen, & H. van Dam.* 591, L87 (2003)

RADIATION MECHANISMS

A Method for Black Hole Mass Determination in Accretion-powered X-Ray Sources. *Chris R. Shrader & Lev Titarchuk.* 598, 168 (2003)

RADIATION MECHANISMS: NONTHERMAL

A Disk-Jet Interaction Model for the X-Ray Variability in Microquasars. *L. Nobili.* 582, 954 (2003)

Precursor Plerionic Activity and High-Energy Gamma-Ray Emission in the Supranova Model of Gamma-Ray Bursts. *Susumu Inoe, Dafne Guetta, & Franco Pacini.* 583, 379 (2003)

The Effect of Vacuum Polarization and Proton Cyclotron Resonances on Photon Propagation in Strongly Magnetized Plasmas. *Feryal Özel.* 583, 402 (2003)

Nonthermal Radiation from Clusters of Galaxies: The Role of Merger Shocks in Particle Acceleration. *Stefano Gabici & Pasquale Blasi.* 583, 695 (2003)

A *BeppoSAX* Observation of the IC 1262 Galaxy Cluster. *Daniel S. Hudson, Mark J. Henriksen, & Sergio Colafrancesco.* 583, 706 (2003)

Ultrafast Self-Compton Cooling. *Kunihito Ioka.* 583, 819 (2003)

Implications of Variability Patterns Observed in TeV Blazars on the Structure of the Inner Jet. *Chiharu Tanihata, Tadayuki Takahashi, Jun Kataoka, & Greg M. Medejski.* 584, 153 (2003)

Nonthermal Emissions from Particles Accelerated by Turbulence in Clusters of Galaxies. *Yutaka Fujita, Motokazu Takizawa, & Craig L. Sarazin.* 584, 190 (2003)

Understanding the Radio Emission Geometry of Multiple-Component Radio Pulsars from Retardation and Aberration Effects. *Y. Gupta & R. T. Gangadhara.* 584, 418 (2003)

Gamma Rays from Intergalactic Shocks. *Uri Keshet, Eli Waxman, Abraham Loeb, Volker Springel, & Lars Hernquist.* 585, 128 (2003)

Hα, Extreme-Ultraviolet, and Microwave Observations of the 2000 March 22 Solar Flare and Spontaneous Magnetic Reconnection. *Jeongwoo Lee, Peter T. Gallagher, Dale E. Gary, Gelu M. Nita, G. S. Choe, Su-Chan Bong, & Hong Sik Yun.* 585, 524 (2003)

Neutron-fed Afterglows of Gamma-Ray Bursts. *Andrei M. Beloborodov.* 585, L19 (2003)

Diffuse X-Rays from a Distributed Component of Dark Surrounding Sagittarius A*. *Martin Pessah & Fulvio Melia.* 585, L29 (2003)

High-Energy Emission from the Prompt Gamma-Ray Burst. *Dafne Guetta & Jonathan Granot.* 585, 885 (2003)

Three-dimensional Simulations of Relativistic Precessing Jets Probing the Structure of Superluminal Sources. *Miguel-Ángel Aloy, José-María Martí, José-Luís Gómez, Iván Agudo, Ewald Müller, & José-María Ibáñez.* 585, L109 (2003)

Radio/X-Ray Offsets of Large-Scale Jets Caused by Synchrotron Time Lags. *J. M. Bai & Myung Gyoon Lee.* 585, L113 (2003)

Neutral Beams from Blazar Jets. *Armen M. Atoyan & Charles D. Dermer.* 586, 79 (2003)

Detection of X-Ray Emission from the Eastern Radio Lobe of Pictor A. *Paola Grandi, Matteo Guainazzi, Laura Maraschi, Raffaella Morganti, Roberto Fusco-Femiano, Mariateresa Fiocchi, Lucia Ballo, & Fabrizio Tavecchio.* 586, 123 (2003)

Detection of HCN Direct *l*-Type Transitions Probing Hot Molecular Gas in the Proto–Planetary Nebula CRL 618. *S. Thorwirth, F. Wyrowski, P. Schilke, K. M. Menten, S. Brünken, H. S. P. Müller, & G. Winnewisser.* 586, 338 (2003)

Two-dimensional Monte Carlo/Fokker-Planck Simulations of Flares in Accretion Disk Corona Models. *M. Böttcher, D. R. Jackson, & E. P. Liang.* 586, 389 (2003)

Flaring X-Ray Emission from HST-1, a Knot in the M87 Jet. *D. E. Harris, J. A. Biretta, W. Junor, E. S. Perlman, W. B. Sparks, & A. S. Wilson.* 586, L41 (2003)

The Identification of Infrared Synchrotron Radiation from Cassiopeia A. *T. J. Jones, L. Rudnick, T. DeLaney, & J. Bowden.* 587, 227 (2003)

Gyrosynchrotron Emission from Anisotropic Electron Distributions. *G. D. Fleishman & V. F. Melnikov.* 587, 823 (2003)

Radiative Relaxation and Isomeric Branching of Highly Excited H/C/N: The Importance of Delocalized Vibrational States. *Troy Barger, Alec M. Wodtke, & Joel M. Bowman.* 587, 841 (2003)

What Types of Jets Does Nature Make? A New Population of Radio Quasars. *Paolo Padovani, Eric S. Perlman, Hermine Landt, Paolo Giommi, & Matteo Perri.* 588, 128 (2003)

Interferometric Detection of Linear Polarization from Sagittarius A* at 230 GHz. *Geoffrey C. Bower, Melvyn C. H. Wright, Heino Falcke, & Donald C. Backer.* 588, 331 (2003)

Extended Acceleration in Slot Gaps and Pulsar High-Energy Emission. *Alex G. Muslimov & Alice K. Harding.* 588, 430 (2003)

The Speed and Orientation of the Parsec-Scale Jet in 3C 279. *B. Glenn Piner, Stephen C. Unwin, Ann E. Wehrle, Alma C. Zook, C. Megan Urry, & Diane M. Gilmore.* 588, 716 (2003)

Relativistic and Slowing Down: The Flow in the Hot Spots of Powerful Radio Galaxies and Quasars. *Markos Georganopoulos & Demosthenes Kazanas.* 589, L5 (2003)

Testing of Inverse Compton Models for Active Galactic Nuclei with Gamma-Ray and Radio Observations. *A. Lähteenmäki & E. Valtaoja.* 590, 95 (2003)

Toward an Empirical Theory of Pulsar Emission. VIII. Subbeam Circulation and the Polarization-Modal Structure of Conal Beams. *Joanna M. Rankin & R. Ramachandran.* 590, 411 (2003)

Constraining the Structure of Gamma-Ray Burst Jets through the Afterglow Light Curves. *Jonathan Granot & Pawan Kumar.* 591, 1086 (2003)

External Shock Model for the Large-Scale, Relativistic X-Ray Jets from the Microquasar XTE J1550−564. *X. Y. Wang, Z. G. Dai, & T. Lu.* 592, 347 (2003)

Radiative Acceleration and Transient, Radiation-induced Electric Fields. *L. Zampieri, R. Turolla, L. Foschini, & A. Treves.* 592, 368 (2003)

The Effect of Angular Structure of Gamma-Ray Burst Outflows on the Afterglow Emission. *A. Panaitescu & P. Kumar.* 592, 390 (2003)

The Electron Spectrum in 3C 279 and the Observed Emission Spectrum. *Masaaki Kusunose, Fumio Takahara, & Tomohiro Kato.* 592, L5 (2003)

The Contribution of Particle Impact to the Production of Fe Kα Emission from Accreting Black Holes. *D. R. Ballantyne & A. C. Fabian.* 592, 1089 (2003)

A Class of Interstellar OH Masers Associated with Protostellar Outflows. *Alice L. Argon, Mark J. Reid, & Karl M. Menten.* 593, 925 (2003)

Constraints on Pulsar Magnetospheric and Wind Parameters for the Compact Nebulae of Vela and PSR B1706−44. *Ramotholo R. Sefako & Ocker C. de Jager.* 593, 1013 (2003)

Baryon Loading of Gamma-Ray Burst by Neutron Pickup. *Amir Levinson & David Eichler.* 594, L19 (2003)

Decelerating Flows in TeV Blazars: A Resolution to the BL Lacertae–FR I Unification Problem. *Markos Georganopoulos & Demosthenes Kazanas.* 594, L27 (2003)

Diagnostic Signatures of Radio and Hard X-Ray Emission on Particle Acceleration Processes in the Coma Cluster. *Ping-Hung Kuo, Chorng-Yuan Hwang, & Wing-Huen Ip.* 594, 732 (2003)

Linear Polarization in Gamma-Ray Bursts: The Case for an Ordered Magnetic Field. *Jonathan Granot & Arieh Königl.* 594, L83 (2003)

Rossi X-Ray Timing Explorer Observations of A2256. *Yoel Rephaeli & Duane Gruber.* 595, 137 (2003)

Cyclotron Maser Radiation from Astrophysical Shocks. *R. Bingham, B. J. Kellett, R. A. Cairns, J. Tonge, & J. T. Mendonça.* 595, 279 (2003)

Diffuse Nonthermal X-Ray Emission: Evidence of Cosmic-Ray Acceleration at the Shock Front in IC 1262. *Daniel S. Hudson & Mark J. Henriksen.* 595, L1 (2003)

Circular Polarization from Gamma-Ray Burst Afterglows. *Makoto Matsumiya & Kunihito Ioka.* 595, L25 (2003)

Extended X-Ray Emission around 4C 41.17 at $z = 3.8$. *Caleb Scharf, Ian Smail, Rob Ivison, Richard Bower, Wil van Breugel, & Michiel Reuland.* 596, 105 (2003)

Surface Photon Emissivity of Bare Strange Stars. *K. S. Cheng & T. Harko.* 596, 451 (2003)

The Influence of Electron Impact Ionization in the Relativistic Pickup of Interstellar Neutrals. *R. Schlickeiser, M. Pohl, & R. Vainio.* 596, 840 (2003)

Coordinated Multiwavelength Observations of BL Lacertae in 2000. *M. Böttcher, A. P. Marscher, M. Ravasio, M. Villata, C. M. Raiteri, H. D. Aller, M. F. Aller, H. Teräsranta, O. Mang, G. Tagliaferri, F. Ahoronian, H. Krawczynski, O. M. Kurtanidze, M. G. Nikolashvili, M. A. Ibrahimov, I. E. Papadakis, K. Tsinganos, K. Sadakane, N. Okada, L. O. Takalo, A. Sillanpää, G. Tosti, S. Ciprini, A. Frasca, E. Marilli, R. Robb, J. C. Noble, S. G. Jorstad, V. A. Hagen-Thorn, V. M. Larionov, R. Nesci, M. Maesano, R. D. Schwartz, J. Basler, P. W. Gorham, H. Iwamatsu, T. Kato, C. Pullen, E. Benítez, J. A. de Diego, M. Moilanen, A. Oksanen, D. Rodriguez, A. C. Sadun, M. Kelly, M. T. Carini, H. R. Miller, S. Catalano, D. Dultzin-Hacyan, J. H. Fan, G. Ghisellini, R. Ishioka, H. Karttunen, P. Keinänen, N. A. Kudryavtseva, M. Lainela, L. Lanteri, E. G. Larionova, K. Matsumoto, J. R. Mattox, I. McHardy, F. Montagni, G. Nucciarelli, L. Ostorero, J. Papamastorakis, M. Pasanen, G. Sobrito, & M. Uemura.* 596, 847 (2003)

A Kinsip between the EGRET Supernova Remnants and Sagittarius A East. *Marco Fatuzzo & Fulvio Melia.* 596, 1035 (2003)

High-Energy Gamma Rays From FR I Jets. *L. Stawarz, M. Sikora, & M. Ostrowski.* 597, 186 (2003)

Optical Pulse-Phased Photopolarimetry of PSR B0656+14. *B. Kern, C. Martin, B. Mazin, & J. P. Halpern.* 597, 1049 (2003)

Nonthermal Electrons in Radiatively Inefficient Accretion Flow Models of Sagittarius A*. *Feng Yuan, Eliot Quataert, & Ramesh Narayan.* 598, 301 (2003)

Broad Redshifted Line as Signature of Outflow. *Lev Titarchuk, Demos Kazanas, & Peter A. Becker.* 598, 411 (2003)

Explaining the High-Energy Spectral Component in GRB 941017. *Jonathan Granot & Dafne Guetta.* 598, L11 (2003)

On the Origin of X-Ray Emission from Millisecond Pulsars in 47 Tucanae. *K. S. Cheng & Ronald E. Taam.* 598, 1207 (2003)

Does the Iron Kα Line of Active Galactic Nuclei Arise from the Cerenkov Line-like Radiation? *J. H. You, D. B. Liu, W. P. Chen, L. Chen, & S. N. Zhang.* 599, 164 (2003)

Pair Loading in Gamma-Ray Burst Fireballs and Prompt Emission from Pair-rich Reverse Shocks. *Zhuo Li, Z. G. Dai, T. Lu, & L. M. Song.* 599, 380 (2003)

Earliest Detection of the Optical Afterglow of GRB 030329 and Its Variability. *R. Sato, N. Kawai, M. Suzuki, Y. Yatsu, J. Kataoka, R. Takagi, K. Yanagisawa, & H. Yamaoka.* 599, L9 (2003)

Month-Timescale Optical Variability in the M87 Jet. *Eric S. Perlman, D. E. Harris, John A. Biretta, William B. Sparks, & F. Duccio Macchetto.* 599, L65 (2003)

RADIATION MECHANISMS: THERMAL

The First Spatially Resolved Mid-Infrared Spectroscopy of β Pictoris. *A. J. Weinberger, E. E. Becklin, & B. Zuckerman.* 584, L33 (2003)

A Pulsation Mechanism for GW Virginis Variables. *Arthur N. Cox.* 585, 975 (2003)

Detection of X-Ray Emission from the Eastern Radio Lobe of Pictor A. *Paola Grandi, Matteo Guainazzi, Laura Maraschi, Raffaella Morganti, Roberto Fusco-Femiano, Mariateresa Fiocchi, Lucia Ballo, & Fabrizio Tavecchio.* 586, 123 (2003)

Two-dimensional Monte Carlo/Fokker-Planck Simulations of Flares in Accretion Disk Corona Models. *M. Böttcher, D. R. Jackson, & E. P. Liang.* 586, 389 (2003)

Nonthermal Electrons in Radiatively Inefficient Accretion Flow Models of Sagittarius A*. *Feng Yuan, Eliot Quataert, & Ramesh Narayan.* 598, 301 (2003)

On the Origin of X-Ray Emission from Millisecond Pulsars in 47 Tucanae. *K. S. Cheng & Ronald E. Taam.* 598, 1207 (2003)

RADIATIVE TRANSFER

Resolving the Effects of Resonant X-Ray Line Scattering in Centaurus X-3 with *Chandra*. *Patrick S. Wojdowski, Duane A. Liedahl, Masao Sako, Steven M. Kahn, & Frederik Paerels.* 582, 959 (2003)

A Spectrophotometric Method to Determine the Inclination of Class I Objects. *Takeshi Nakazato, Taishi Nakamoto, & Masayuki Umemura.* 583, 322 (2003)

Detection of Gaps in Circumstellar Disks. *J. Steinacker & Th. Henning.* 583, L35 (2003)

A New Kinetic Equation for Compton Scattering. *George B. Rybicki.* 584, 528 (2003)

Eddington Limit and Radiative Transfer in Highly Inhomogeneous Atmospheres. *Mateusz Ruszkowski & Mitchell C. Begelman.* 586, 384 (2003)

Two-dimensional Monte Carlo/Fokker-Planck Simulations of Flares in Accretion Disk Corona Models. *M. Böttcher, D. R. Jackson, & E. P. Liang.* 586, 389 (2003)

Determination of Primordial Metallicity and Mixing in the Type II-P Supernova 1993W. *E. Baron, Peter E. Nugent, David Branch, Peter H. Hauschildt, M. Turatto, & E. Cappellaro.* 586, 1199 (2003)

2-DUST: A Dust Radiative Transfer Code for an Axisymmetric System. *Toshiya Ueta & Margaret Meixner.* 586, 1338 (2003)

Optical Polarization and Near-Infrared Photometry of the Proto–Planetary Nebula Henize 3-1475. *Claudia V. Rodrigues, Francisco J. Jablonski, Jane Gregario-Hetem, Gabriel R. Hickel, & Marilla J. Sartori.* 587, 312 (2003)

The Circumstellar Disk of the Butterfly Star in Taurus. *Sebastian Wolf, Deborah L. Padgett, & Karl R. Stapelfeldt.* 588, 373 (2003)

Nonequilibrium CO Chemistry in the Solar Atmosphere. *A. Asensio Ramos, J. Trujillo Bueno, M. Carlsson, & J. Cernicharo.* 588, L61 (2003)

Transfer of Polarized Radiation in Strongly Magnetized Plasmas and Thermal Emission from Magnetars: Effect of Vacuum Polarization. *Dong Lai & Wynn C. G. Ho.* 588, 962 (2003)

Theoretical Spectra and Atmospheres of Extrasolar Giant Planets. *David Sudarsky, Adam Burrows, & Ivan Hubeny.* 588, 1121 (2003)

On the Indirect Detection of Sodium in the Atmosphere of the Planetary Companion to HD 209458. *J. J. Fortney, D. Sudarsky, I. Hubeny, C. S. Cooper, W. B. Hubbard, A. Burrows, & J. I. Lunine.* 589, 615 (2003)

Technique for Detecting Warm-Hot Intergalactic Gas in Quasar Ultraviolet Spectra. *Luc Binette, Mario Rodríguez-Martínez, Sinhue Haro-Corzo, & Isidro Ballinas.* 590, 58 (2003)

The Statistical Sobolev-Rosseland Mean and the Effects of Frequency Redistribution on Wolf-Rayet Wind Driving. *A. J. Onifer & K. G. Gayley.* 590, 473 (2003)

A Grid of Non-LTE Line-Blanketed Model Atmospheres of O-Type Stars. *Thierry Lanz & Ivan Hubeny.* 146, 417 (2003)

Two-dimensional Radiative Transfer in Protostellar Envelopes. I. Effects of Geometry on Class I Sources. *Barbara A. Whitney, Kenneth Wood, J. E. Bjorkman, & Michael J. Wolff.* 591, 1049 (2003)

Non-LTE Model Atmospheres for Late-Type Stars. II. Restricted Non-LTE Calculations for a Solar-like Atmosphere. *Carlos Allende Prieto, Ivan Hubeny, & David L. Lambert.* 591, 1192 (2003)

A Search for Lyα Emission from the Astrosphere of 40 Eridani A. *Brian E. Wood, Jeffrey L. Linsky, Hans-Reinhard Mueller, & Gary P. Zank.* 591, 1210 (2003)

Shock Breakout in Core-Collapse Supernovae and Its Neutrino Signature. *Todd A. Thompson, Adam Burrows, & Philip A. Pinto.* 592, 434 (2003)

The Numerical Simulation of Radiative Shocks. I. The Elimination of Numerical Shock Instabilities Using a Local Oscillation Filter. *Ralph S. Sutherland, David K. Bisset, & Geoffrey V. Bicknell.* 147, 187 (2003)

Beyond Flux-limited Diffusion: Parallel Algorithms for Multidimensional Radiation Hydrodynamics. *John C. Hayes & Michael L. Norman.* 147, 197 (2003)

The Accuracy of the Center-of-Gravity Method for Measuring Velocity and Magnetic Field Strength in the Solar Photosphere. *H. Uitenbroek.* 592, 1225 (2003)

A Two-Component Model for the Light Curves of Hypernovae. *Keiichi Maeda, Paolo A. Mazzali, Jingsong Deng, Ken'ichi Nomoto, Yuzuru Yoshii, Hiroyuki Tomita, & Yukiyasu Kobayashi.* 593, 931 (2003)

Local Three-dimensional Simulations of Magnetorotational Instability in Radiation-dominated Accretion Disks. *N. J. Turner, J. M. Stone, J. H. Krolik, & T. Sano.* 593, 992 (2003)

Optical and X-Ray Properties of Cooling Neutron Stars. *Don A. Lloyd, Lars Hernquist, & Jeremy S. Heyl.* 593, 1024 (2003)

Radiative Transfer on Perturbations in Protoplanetary Disks. *Hannah Jang-Condell & Dimitar D. Sasselov.* 593, 1116 (2003)

Non-LTE Model Atmospheres for Late-Type Stars. I. A Collection of Data for Light Neutral and Singly Ionized Atoms. *Carlos Allende Prieto, David L. Lambert, Ivan Hubeny, & Thierry Lanz.* 147, 363 (2003)

The Scattered X-Ray Halo around Nova Cygni 1992: Testing a Model for Interstellar Dust. *B. T. Draine & Jonathan C. Tan.* 594, 347 (2003)

Asymmetric Deviation of the Scattering Cross Section around Lyα Atomic Hydrogen. *Hee-Won Lee.* 594, 637 (2003)

A Possible Bifurcation in Atmospheres of Strongly Irradiated Stars and Planets. *Ivan Hubeny, Adam Burrows, & David Sudarsky.* 594, 1011 (2003)

Carbon-Nitrogen-Oxygen Line Radiation and the X-Ray Bowen Fluorescence Mechanism in Optically Thick, Highly Ionized Media. *Masao Sako.* 594, 1108 (2003)

Pion Production in the Inner Disk Around Cygnus X-1. *Cesar Meirelles Filho, Celso L. Lima, Hideaki Miyake, & Varese Timoteo.* 595, 322 (2003)

Experimental Study of Light Scattering by Large Dust Aggregates Consisting of Micron-Sized SiO_2 Monospheres. *Gerhard Wurm, Helena Relke, & Johann Dorschner.* 595, 891 (2003)

Spectral Energy Distribution in Supercritical Disk Accretion Flows through Photon-trapping Effects. *Ken Ohsuga, Shin Mineshige, & Ken-ya Watarai.* 596, 429 (2003)

Atmospheric Models of Red Giants with Massive-Scale Non–Local Thermodynamic Equilibrium. *C. I. Short & P. H. Hauschildt.* 596, 501 (2003)

Beyond the T Dwarfs: Theoretical Spectra, Colors, and Detectability of the Coolest Brown Dwarfs. *Adam Burrows, David Sudarsky, & Jonathan I. Lunine.* 596, 587 (2003)

Model Spectral Energy Distributions of Circumstellar Debris Disks. I. Analytic Disk Density Distributions. *Sebastian Wolf & Lynne A. Hillenbrand.* 596, 603 (2003)

What Causes p-Mode Asymmetry Reversal? *Dali Georgobiani, Robert F. Stein, & Åke Nordlund.* 596, 698 (2003)

Star Formation and Feedback in Dwarf Galaxies. *Shawfeng Dong, D. N. C. Lin, & S. D. Murray.* 596, 930 (2003)

Source of Atomic Hydrogen in the Atmosphere of HD 209458b. *Mao-Chang Liang, Christopher D. Parkinson, Anthony Y. T. Lee, Yuk L. Yung, & Sara Seager.* 596, L247 (2003)

Apparent Sizes and Spectral Line Profiles for Spherical and Disk Masers: Solutions to the Full Equations. *W. D. Watson & H. W. Wyld.* 598, 357 (2003)

The Effect of Multiple Scattering on the Polarization from Binary Star Envelopes. I. Self- and Externally Illuminated Disks. *Jennifer L. Hoffman, Barbara A. Whitney, & Kenneth H. Nordsieck.* 598, 572 (2003)

Two-dimensional Radiative Transfer in Protostellar Envelopes. II. An Evolutionary Sequence. *Barbara A. Whitney, Kenneth Wood, J. E. Bjorkman, & Martin Cohen.* 598, 1079 (2003)

Thermohydrodynamics of Circumstellar Disks with High-Mass Planets. *Gennaro D'Angelo, Thomas Henning, & Willy Kley.* 599, 548 (2003)

Atmospheres and Spectra of Strongly Magnetized Neutron Stars. III. Partially Ionized Hydrogen Models. *Wynn C. G. Ho, Dong Lai, Alexander Y. Potekhin, & Gilles Chabrier.* 599, 1293 (2003)

RADIO CONTINUUM: GALAXIES

An Obscured Radio Galaxy at High Redshift. *Michiel Reuland, Wil van Breugel, Huub Röttgering, Wim de Vries, Carlos De Breuk, & Daniel Stern.* 582, L71 (2003)

Chandra Snapshot Observations of Low-Luminosity Active Galactic Nuclei with a Compact Radio Source. *Yuichi Terashima & Andrew S. Wilson.* 583, 145 (2003)

COLA. II. Radio and Spectroscopic Diagnostics of Nuclear Activity in Galaxies. *E. A. Corbett, L. Kewley, P. N. Appleton, V. Charmandaris, M. A. Dopita, C. A. Heisler, R. P. Norris, A. Zezas, & A. Marston.* 583, 670 (2003)

4C +12.50: A Superluminal Precessing Jet in the Recent Merger System IRAS 13451+1232. *M. L. Lister, K. I. Kellermann, R. C. Vermeulen, M. H. Cohen, J. A. Zensus, & E. Ros.* 584, 135 (2003)

SDSS J094857.3+002225: A Very Radio Loud, Narrow-Line Quasar with Relativistic Jets? *Hong-Yan Zhou, Ting-Gui Wang, Xiao-Bo Dong, You-Yuan Zhou, & Cheng Li.* 584, 147 (2003)

Chandra Observations of the Cooling Flow Cluster Abell 2052. *Elizabeth L. Blanton, Craig L. Sarazin, & Brian R. McNamara.* 585, 227 (2003)

The Nuclear Accretion in the FR I Radio Galaxy IC 4296 from *Chandra* and Very Long Baseline Array Observations. *S. Pellegrini, T. Venturi, A. Comastri, G. Fabbiano, F. Fiore, C. Vignali, R. Morganti, & G. Trinchieri.* 585, 677 (2003)

Pearson-Readhead Survey Sources. II. The Long-Term Centimeter-Band Total Flux and Linear Polarization Properties of a Complete Radio Sample. *M. F. Aller, H. D. Aller, & P. A. Hughes.* 586, 33 (2003)

Variability of Sagittarius A*: Flares at 1 Millimeter. *Jun-Hui Zhao, K. H. Young, R. M. Herrnstein, P. T. P. Ho, T. Tsutsumi, K. Y. Lo, W. M. Goss, & G. C. Bower.* 586, L29 (2003)

Estimating Star Formation Rates from Infrared and Radio Luminosities: The Origin of the Radio-Infrared Correlation. *Eric F. Bell.* 586, 794 (2003)

ROSAT HRI Investigation of the NGC 507 X-Ray Halo. *M. Paolillo, G. Fabbiano, G. Peres, & D.-W. Kim.* 586, 850 (2003)

Very Long Baseline Array Continuum and H I Absorption Observations of the Ultraluminous Infrared Galaxy IRAS 17208−0014. *Emmanuel Momjian, Jonathan D. Romney, Christopher L. Carilli, Thomas H. Troland, & Gregory B. Taylor.* 587, 160 (2003)

Chandra Observations of the Galaxy Cluster A478: The Interaction of Hot Gas and Radio Plasma in the Core, and an Improved Determination of the Compton y-Parameter. *M. Sun, C. Jones, S. S. Murray, S. W. Allen, A. C. Fabian, & A. C. Edge.* 587, 619 (2003)

Rotation Measures of Compact Sources in the Canadian Galactic Plane Survey. *J. C. Brown, A. R. Taylor, & B. J. Jackel.* 145, 213 (2003)

What Types of Jets Does Nature Make? A New Population of Radio Quasars. *Paolo Padovani, Eric S. Perlman, Hermine Landt, Paolo Giommi, & Matteo Perri.* 588, 128 (2003)

Lowering Infrared Cluster Magnetic Field Strengths: The Radio Galaxy Contributions. *Lawrence Rudnick & Katherine M. Blundell.* 588, 143 (2003)

The Bivariate Luminosity-Color Distribution of *IRAS* Galaxies and Implications for the High-Redshift Universe. *S. C. Chapman, G. Helou, G. F. Lewis, & D. A. Dale.* 588, 186 (2003)

The Speed and Orientation of the Parsec-Scale Jet in 3C 279. *B. Glenn Piner, Stephen C. Unwin, Ann E. Wehrle, Alma C. Zook, C. Megan Urry, & Diane M. Gilmore.* 588, 716 (2003)

Discovery of a New Radio Galaxy within the Error Box of the Unidentified Gamma-Ray Source 3EG J1735−1500. *J. A. Combi, G. E. Romero, J. M. Paredes, D. F. Torres, & M. Ribó.* 588, 731 (2003)

A View through Faraday's Fog: Parsec-Scale Rotation Measures in Active Galactic Nuclei. *R. T. Zavala & G. B. Taylor.* 589, 126 (2003)

VLBI Polarimetry of 177 Sources from the Caltech–Jodrell Bank Flat-Spectrum Survey. *L. K. Pollack, G. B. Taylor, & R. T. Zavala.* 589, 733 (2003)

Detection of the "Active" Nucleus of M32. *Luis C. Ho, Yuichi Terashima, & James S. Ulvestad.* 589, 783 (2003)

Testing of Inverse Compton Models for Active Galactic Nuclei with Gamma-Ray and Radio Observations. *A. Lähteenmäki & E. Valtaoja.* 590, 95 (2003)

Renewed Activity in the Radio Galaxy PKS B1545−321: Twin Edge-brightened Beams within Diffuse Radio Lobes. *Lakshmi Saripalli, Ravi Subrahmanyan, & N. Udaya Shankar.* 590, 181 (2003)

Variability of Submillijansky Radio Sources. *C. L. Carilli, R. J. Ivison, & D. A. Frail.* 590, 192 (2003)

Radio-selected Galaxis in Very Rich Clusters at $z \leq 0.25$. I. Multiwavelength Observations and Data Reduction Techniques. *G. E. Morrison, F. N. Owen, M. J. Ledlow, W. C. Keel, J. M. Hill, W. Voges, & T. Herter.* 146, 267 (2003)

The Cross-Wavelet Transform and Analysis of Quasi-periodic Behavior in the Pearson-Readhead VLBI Survey Sources. *Brandon C. Kelly, Philip A. Hughes, Hugh D. Aller, & Margo F. Aller.* 591, 695 (2003)

A Relativistic Jet in the Radio-quiet Quasar PG 1407+263. *Katherine M. Blundell, Anthony J. Beasley, & Geoffrey V. Bicknell.* 591, L103 (2003)

X-Ray Emission from the Hot Interstellar Medium and Southwest Radio Lobe of the Nearby Radio Galaxy Centaurus A. *R. P. Kraft, S. E. Vázquez, W. R. Forman, C. Jones, S. S. Murray, M. J. Hardcastle, D. M. Worrall, & E. Churazov.* 592, 129 (2003)

VLBI Imaging of Luminous Infrared Galaxies: Active Galactic Nucleus Cores in Markarian 231, UGC 5101, and NGC 7469. *Carol J. Lonsdale, Colin J. Lonsdale, Harding E. Smith, & Philip J. Diamond.* 592, 804 (2003)

Radio and X-Ray Observations of the Jet in Centaurus A. *M. J. Hardcastle, D. M. Worrall, R. P. Kraft, W. R. Forman, C. Jones, & S. S. Murray.* 593, 169 (2003)

Nascent Starbursts in Synchrotron-deficient Galaxies with Hot Dust. *H. Roussel, G. Helou, R. Beck, J. J. Condon, A. Bosma, K. Matthews, & T. H. Jarrett.* 593, 733 (2003)

The Redshift Distribution of Flat-Spectrum Radio Sources. *J. A. Muñoz, E. E. Falco, C. S. Kochanek, J. Lehár, & E. Mediavilla.* 594, 684 (2003)

The Origin of X-shaped Radio Galaxies: Clues from the Z-symmetric Secondary Lobes. *Gopal-Krishna, Peter L. Biermann, & Paul J. Wiita.* 594, L103 (2003)

Chandra Obsrevations of the Central Region of A3112. *Motokazu Takizawa, Craig L. Sarazin, Elizabeth L. Blanton, & Greg B. Taylor.* 595, 142 (2003)

Identifying Compact Symmetric Objects in the Southern Sky. *G. B. Taylor & A. B. Peck.* 597, 157 (2003)

Dependence of Dust Obscuration on Star Formation Rates in Galaxies. *J. Afonso, A. Hopkins, B. Mobasher, & C. Almeida.* 597, 269 (2003)

Sensitive VLBI Continuum and H I Absorption Observations of NGC 7474: First Scientific Observations with the Combined Array VLBA, VLA, and Arecibo. *Emmanuel Momjian, Jonathan D. Romney, Christopher L. Carilli, & Thomas H. Troland.* 597, 809 (2003)

Are the Faraday Rotating Magnetic Fields Local to Intracluster Radio Galaxies? *Torsten A. Ensslin, Corina Vogt, T. E. Clarke, & Greg B. Taylor.* 597, 870 (2003)

Star Formation Rate Indicators in the Sloan Digital Sky Survey. *A. M. Hopkins, C. J. Miller, R. C. Nichol, A. J. Connolly, M. Bernardi, P. L. Gómez, T. Goto, C. A. Tremonti, J. Brinkmann, Ž. Ivezić, & D. Q. Lamb.* 599, 971 (2003)

RADIO CONTINUUM: GENERAL

An Instrument for Investigating the Large Angular Scale Polarization of the Cosmic Microwave Background. *Brian G. Keating, Christopher W. O'Dell, Joshua O. Gundersen, Lucio Piccirillo, Nate C. Stebor, & Peter T. Timbie.* 144, 1 (2003)

A CLEAN-based Method for Deconvolving Interstellar Pulse Broadening from Radio Pulses. *N. D. R. Bhat, J. M. Cordes, & S. Chatterjee.* 584, 782 (2003)

Rapid Variability and Annual Cycles in the Characteristic Timescale of the Scintillating Source PKS 1257−326. *H. E. Bignall, D. L. Jauncey, J. E. J. Lovell, A. K. Tzioumis, L. Kedziora-Chudczer, J.-P. Macquart, S. J. Tingay, D. P. Rayner, & R. W. Clay.* 585, 653 (2003)

Continued Radio Monitoring of the Gamma-Ray Burst 991208. *T. J. Galama, D. A. Frail, R. Sari, E. Berger, G. B. Taylor, & S. R. Kulkarni.* 585, 899 (2003)

Interferometric Phase Calibration Sources in the Declination Range 0° to −30°. *Joshua N. Winn, Alok R. Patnaik, & J. M. Wrobel.* 145, 83 (2003)

The Low-Frequency Radio Counterpart of the *XMM* Large-Scale Structure Survey. *A. S. Cohen, H. J. A. Roettgering, N. E. Kassim, W. D. Cotton, R. A. Perley, R. Wilman, P. Best, M. Pierre, M. Birkinshaw, M. Bremer, & A. Zanichelli.* 591, 640 (2003)

Mitigation of Radar Interference in *L*-Band Radio Astronomy. *S. W. Ellingson & G. A. Hampson.* 147, 167 (2003)

Diagnostic Signatures of Radio and Hard X-Ray Emission on Particle Acceleration Processes in the Coma Cluster. *Ping-Hung Kuo, Chorng-Yuan Hwang, & Wing-Huen Ip.* 594, 732 (2003)

Millimeter Observations of GRB 030329: Continued Evidence for a Two-Component Jet. *Kartik Sheth, Dale A. Frail, Stephen White, Mousumi Das, Frank Bertoldi, Fabian Walter, Shri R. Kulkarni, & Edo Berger.* 595, L33 (2003)

First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: On-Orbit Radiometer Characterization. *N. Jarosik, C. Barnes, C. L. Bennett, M. Halpern, G. Hinshaw, A. Kogut, M. Limon, S. S. Meyer, L. Page, D. N. Spergel, G. S. Tucker, J. L. Weiland, E. Wollack, & E. L. Wright.* 148, 29 (2003)

Searches for Fast Radio Transients. *J. M. Cordes & M. A. McLaughlin.* 596, 1142 (2003)

Three-dimensional Statistics of Radio Polarimetry. *Mark M. McKinnon.* 148, 519 (2003)

RADIO CONTINUUM: ISM

Inner Structures of Protostellar Collapse Candidate B335 Derived from Millimeter-Wave Interferometry. *Daniel W. A. Harvey, David J. Wilner, Philip C. Myers, Mario Tafalla, & Diego Mardones.* 583, 809 (2003)

Radio Polarization from the Galactic Plane in Cygnus. *B. Uyaniker, T. L. Landecker, A. D. Gray, & R. Kothes.* 585, 785 (2003)

The First Measurement of Cassiopeia A's Forward Shock Expansion Rate. *Tracey DeLaney & Lawrence Rudnick.* 589, 818 (2003)

A Multifrequency Radio Study of Supernova Remnant G292.0+1.8 and Its Pulsar Wind Nebula. *B. M. Gaensler & B. J. Wallace.* 594, 326 (2003)

Polarization Observations in a Low Synchrotron Emission Field at 1.4 GHz. *G. Bernardi, E. Carretti, S. Cortiglioni, R. J. Sault, M. J. Kesteven, & S. Poppi.* 594, L5 (2003)

Discovery of a New Pulsar Wind Nebula in the Large Magellanic Cloud. *B. M. Gaensler, S. P. Hendrick, S. P. Reynolds, & K. J. Borkowski.* 594, L111 (2003)

Disk Properties and Density Structure of the Star-Forming Dense Core B335. *Daniel W. A. Harvey, David J. Wilner, Philip C. Myers, & Mario Tafalla.* 596, 383 (2003)

Inner Structure of Starless Core L694-2 Derived from Millimeter-Wave Interferometry. *Daniel W. A. Harvey, David J. Wilner, Philip C. Myers, & Mario Tafalla.* 597, 424 (2003)

High-Resolution Continuum Imaging at 1.3 and 0.7 Centimeters of the W3 IRS 5 Region. *T. L. Wilson, D. A. Boboltz, R. A. Gaume, & S. T. Megeath.* 597, 434 (2003)

The Origin of the Galactic Center Nonthermal Radio Filaments: Young Stellar Clusters. *F. Yusef-Zadeh.* 598, 325 (2003)

The Cosmic Dispersion Measure from Gamma-Ray Burst Afterglows: Probing the Reionization History and the Burst Environment. *Kunihito Ioka.* 598, L79 (2003)

RADIO CONTINUUM: STARS

Chandra, *Extreme Ultraviolet Explorer*, and Very Large Array Observations of the Active Binary System σ^2 Coronae Borealis. *Rachel A. Osten, Thomas R. Ayres, Alexander Brown, Jeffrey L. Linsky, & Anita Krishnamurthi.* 582, 1073 (2003)

Interferometric Observations of the T Tauri Stars in the MBM 12 Cloud. *Yoichi Itoh, Koji Sugitani, Naoya Fukuda, Kouichiro Nakanishi, Katsuo Ogura,*

Motohide Tamura, Kazuko Marui, Kenta Fujita, Yumiko Oasa, & Misato Fukagawa. 586, L141 (2003)

Very Long Baseline Interferometry Imaging of the RS Canum Venaticorum Binary Star System HR 5110. *R. R. Ransom, N. Bartel, M. F. Bietenholz, M. I. Ratner, D. E. Lebach, I. I. Shapiro, & J.-F. Lestrade.* 587, 390 (2003)

A Triple Radio Continuum Source Associated with IRAS 16547−4247: A Collimated Stellar Wind Emanating from a Massive Protostar. *Guido Garay, Kate J. Brooks, Diego Mardones, & Ray P. Norris.* 587, 739 (2003)

A Search for Pulsars in Quiescent Soft X-Ray Transients. I. *M. Burgay, L. Burderi, A. Possenti, N. D'Amico, R. N. Manchester, A. G. Lyne, F. Camilo, & S. Campana.* 589, 902 (2003)

A New Search Technique for Short Orbital Period Binary Pulsars. *Scott M. Ransom, James M. Cordes, & Stephen S. Eikenberry.* 589, 911 (2003)

The Three-dimensional Kinematics of Water Masers around the Semiregular Variable RT Virginis. *Hiroshi Imai, Katsunori M. Shibata, Kevin B. Marvel, Philip J. Diamond, Tetsuo Sasao, Makoto Miyoshi, Makoto Inoue, Victor Migenes, & Yasuhiro Murata.* 590, 460 (2003)

Radio Polarization of the Young High-Magnetic-Field Pulsar PSR J1119−6127. *Fronefield Crawford & Nathan C. Keim.* 590, 1020 (2003)

SN 1979C VLBI: 22 Years of Almost Free Expansion. *Norbert Bartel & Michael F. Bietenholz.* 591, 301 (2003)

Envelope Emission in Young Stellar Systems: A Subarcsecond Survey of Circumstellar Structure. *Leslie W. Looney, Lee G. Mundy, & W. J. Welch.* 592, 255 (2003)

Radio Emission from SN 2001gd in NGC 5033. *Christopher J. Stockdale, Kurt W. Weiler, Schuyler D. Van Dyk, Marcos J. Montes, Nino Panagia, Richard A. Sramek, M. A. Perez-Torres, & J. M. Marcaide.* 592, 900 (2003)

Correlated Radio:X-Ray Emission in the Hard States of Galactic Microquasars. *M. Choudhury, A. R. Rao, S. V. Vadawale, & A. K. Jain.* 593, 452 (2003)

Statistical Analysis of 5 Year Continuous Radio Flare Data from β Persei, V711 Tauri, δ Librae, and UX Arietis. *Mercedes T. Richards, Elizabeth B. Waltman, Frank D. Ghigo, & Donald St. P. Richards.* 147, 337 (2003)

The Arecibo 430 MHz Intermediate Galactic Latitude Survey: Discovery of Nine Radio Pulsars. *J. Navarro, S. B. Anderson, & P. C. Freire.* 594, 943 (2003)

Possible Photometric Evidence of Ejection of Bullet-like Features in the Relativistic Jet Source SS 433. *Sandip K. Chakrabarti, S. Pal, A. Nandi, B. G. Anandarao, & Soumen Mondal.* 595, L45 (2003)

SN 1993J VLBI. III. The Evolution of the Radio Shell. *M. F. Bietenholz, N. Bartel, & N. P. Rupen.* 597, 374 (2003)

On the Origin of the Various Types of Radio Emission in GRS 1915+105. *S. V. Vadawale, A. R. Rao, S. Naik, J. S. Yadav, C. H. Ishwara-Chandra, A. Pramesh Rao, & G. G. Pooley.* 597, 1023 (2003)

First Evidence of Dusty Disks around Herbig Be Stars. *A. Fuente, A. Rodríguez-Franco, L. Testi, A. Natta, R. Bachiller, & R. Neri.* 598, L39 (2003)

A Westerbork Synthesis Radio Telescope 1400 and 350 MHz Continuum Survey of the Cygnus OB2 Association, in Search of Hot Massive Stars. *Diah Y. A. Setia Gunawan, A. Ger de Bruyn, Karel A. van der Hucht, & Peredur M. Williams.* 149, 123 (2003)

A Giant Outburst at Millimeter Wavelengths in the Orion Nebula. *Geoffrey C. Bower, Richard L. Plambeck, Alberto Bolatto, Nate McCrady, James R. Graham, Imke de Pater, Michael C. Liu, & Frederick K. Baganoff.* 598, 1140 (2003)

A Radio Survey of Type Ib and Ic Supernovae: Searching for Engine-driven Supernovae. *E. Berger, S. R. Kulkarni, D. A. Frail, & A. M. Soderberg.* 599, 408 (2003)

Three Binary Millisecond Pulsars in NGC 6266. *A. Possenti, N. D'Amico, R. N. Manchester, F. Camilo, A. G. Lyne, J. Sarkissian, & A. Corongiu.* 599, 475 (2003)

RADIO LINES: GALAXIES

Molecular Gas and Dust at $z = 2.6$ in SMM J14011+0252: A Strongly Lensed Ultraluminous Galaxy, Not a Huge Massive Disk. *D. Downes & P. M. Solomon.* 582, 37 (2003)

The Nuclear Regions of the Seyfert Galaxy NGC 4151: Parsec-Scale H I Absorption and a Remarkable Radio Jet. *C. G. Mundell, J. M. Wrobel, A. Pedlar, & J. F. Gallimore.* 583, 192 (2003)

The Contribution of H I–rich Galaxies to the Damped Lyα Absorber Population at $z = 0$. *Jessica L. Rosenberg & Stephen E. Schneider.* 585, 256 (2003)

Very Long Baseline Array Continuum and H I Absorption Observations of the Ultraluminous Infrared Galaxy IRAS 17208−0014. *Emmanuel Momjian, Jonathan D. Romney, Christopher L. Carilli, Thomas H. Troland, & Gregory B. Taylor.* 587, 160 (2003)

The BIMA Survey of Nearby Galaxies (BIMA SONG). II. The CO Data. *Tamara T. Helfer, Michele D. Thornley, Michael W. Regan, Tony Wong, Kartik Sheth, Stuart N. Vogel, Leo Blitz, & Douglas C.-J. Bock.* 145, 259 (2003)

Further Discoveries of ^{12}CO in Low Surface Brightness Galaxies. *K. O'Neil, E. Schinnerer, & P. Hofner.* 588, 230 (2003)

A Multitransition CO Study of the Antennae Galaxies NGC 4038/9. *Ming Zhu, E. R. Seaquist, & Nario Kuno.* 588, 243 (2003)

CO Molecular Gas in Infrared-luminous Galaxies. *Lihong Yao, E. R. Seaquist, Nario Kuno, & Loretta Dunne.* 588, 771 (2003)

The Flaring H_2O Megamaser and Conpact Radio Source in Markarian 348. *A. B. Peck, C. Henkel, J. S. Ulvestad, A. Brunthaler, H. Falcke, M. Elitzur, K. M. Menten, & J. F. Gallimore.* 590, 149 (2003)

The Molecular Disk in the Cloverleaf Quasar. *S. Venturini & P. M. Solomon.* 590, 740 (2003)

A Survey for H_2O Megamasers. III. Monitoring Water Vapor Masers in Active Galaxies. *J. A. Braatz, A. S. Wilson, C. Henkel, R. Gough, & M. Sinclair.* 146, 249 (2003)

Fast Outflow of Neutral Hydrogen in the Radio Galaxy 3C 293. *R. Morganti, T. A. Oosterloo, B. H. C. Emonts, J. M. van der Hulst, & C. N. Tadhunter.* 593, L69 (2003)

Unusual CO Line Ratios and Kinematics in the N83/N84 Region of the Small Magellanic Cloud. *Alberto D. Bolatto, Adam Leroy, Frank P. Israel, & James M. Jackson.* 595, 167 (2003)

A Neutral Hydrogen Survey of the Large Magellanic Cloud: Aperture Synthesis and Multibeam Data Combined. *Sungeun Kim, Lister Staveley-Smith, Michael A. Dopita, Robert J. Sault, Youngung Lee, & You-Hua Chu.* 148, 473 (2003)

Sensitive VLBI Continuum and H I Absorption Observations of NGC 7474: First Scientific Observations with the Combined Array VLBA, VLA, and Arecibo. *Emmanuel Momjian, Jonathan D. Romney, Christopher L. Carilli, & Thomas H. Troland.* 597, 809 (2003)

Giant Molecular Clouds in M33. II. High-Resolution Observations. *E. Rosolowsky, G. Engargiola, R. Plambeck, & L. Blitz.* 599, 257 (2003)

Gas and Dust in the Extremely Red Object ERO J164502+4626.4. *Thomas R. Greve, Rob J. Ivison, & Padeli P. Papadopoulos.* 599, 839 (2003)

The Mass Function of Supergiant Molecular Complexes and Implications for Forming Young Massive Star Clusters in the Antennae (NGC 4038/4039). *Christine D. Wilson, Nicholas Scoville, Suzanne C. Madden, & Vassilis Charmandaris.* 599, 1049 (2003)

Giant Molecular Clouds in M33. I. BIMA All-Disk Survey. *G. Engargiola, R. L. Plambeck, E. Rosolowsky, & L. Blitz.* 149, 343 (2003)

RADIO LINES: GENERAL

The Magellanic Stream, High-Velocity Clouds, and the Sculptor Group. *Mary E. Putman, Lister Staveley-Smith, Kenneth C. Freeman, Brad K. Gibson, & David G. Barnes.* 586, 170 (2003)

Resolution of Distance Ambiguities of Inner Galaxy Massive Star Formation Regions. I. *C. Watson, E. Araya, M. Sewilo, E. Churchwell, P. Hofner, & S. Kurtz.* 587, 714 (2003)

Mitigation of Radar Interference in *L*-Band Radio Astronomy. *S. W. Ellingson & G. A. Hampson.* 147, 167 (2003)

Probing beyond the Epoch of Hydrogen Reionization with 21 Centimeter Radiation. *Benedetta Ciardi & Piero Madau.* 596, 1 (2003)

Phase-Referenced Very Long Baseline Array Observations of OH Masers at 4765 MHz. *Patrick Palmer, W. M. Goss, & K. E. Devine.* 599, 323 (2003)

RADIO LINES: ISM

CO Luminosity Functions for Far-Infrared– and *B*-Band–selected Galaxies and the First Estimate for $\Omega_{\rm H\,I+H_2}$. *Dusan Keres, Min S. Yun, & J. S. Young.* 582, 659 (2003)

Resolving the Kinematic Distance Ambiguity toward Galactic H II Regions. *Michal A. Kolpak, James M. Jackson, T. M. Bania, D. P. Clemens, & John M. Dickey.* 582, 756 (2003)

Large-Scale Turbulence in Molecular Clouds. *Christopher M. Brunt.* 583, 280 (2003)

Structure Function Scaling in the Taurus and Perseus Molecular Cloud Complexes. *Paolo Padoan, Stanislav Boldyrev, William Langer, & Ake Nordlund.* 583, 308 (2003)

An Outer Galaxy Molecular Cloud Catalog. *Christopher M. Brunt, C. R. Kerton, & Caroline Pomerleau.* 144, 47 (2003)

Water Maser Survey toward Low-Mass Young Stellar Objects in the Northern Sky with the Nobeyama 45 Meter Telescope and the Very Large Array. *Ray S. Furuya, Yoshimi Kitamura, Alwyn Wooten, Mark J. Claussen, & Ryohei Kawabe.* 144, 71 (2003)

A High Spectral Resolution VLBI Study of the 12 GHz Methanol Masers in W3(OH): Their Submilliarcsecond Structure and Clues on Saturation. *L. Moscadelli, K. M. Menten, C. M. Walmsley, & M. J. Reid.* 583, 776 (2003)

Chemistry and Dynamics in Pre-protostellar Cores. *Jeong-Eun Lee, Neal J. Evans II, Yancy L. Shirley, & Ken'ichi Tatematsu.* 583, 789 (2003)

Trans-Ethyl Methyl Ether: Assignments and Predictions up to 400 GHz for the Vibrational-Torsional Ground State. *Ulrike Fuchs, Gisbert Winnewisser, Peter Groner, Frank C. De Lucia, & Eric Herbst.* 144, 277 (2003)

Rotational Spectra of the Nitrogen-Sulfur Carbon NC_nS, n = 1–7. *M. C. McCarthy, A. L. Cooksy, S. Mohamed, V. D. Gordon, & P. Thaddeus.* 144, 287 (2003)

Fitting Together the H I Absorption and Emission in the Southern Galactic Plane Survey. *John M. Dickey, N. M. McClure-Griffiths, B. M. Gaensler, & A. J. Green.* 585, 801 (2003)

H I Narrow Self-Absorption in Dark Clouds. *D. Li & P. F. Goldsmith.* 585, 823 (2003)

Structure of the H I Near the Northeast Limb of the Cygnus Loop. *D. A. Leahy.* 586, 224 (2003)

The Dynamical State of Barnard 68: A Thermally Supported, Pulsating Dark Cloud. *Charles J. Lada, Edwin A. Bergin, João F. Alves, & Tracy L. Huard.* 586, 286 (2003)

The Millennium Arecibo 21 Centimeter Absorption-Line Survey. II. Properties of the Warm and Cold Neutral Media. *Carl Heiles & T. H. Troland.* 586, 1067 (2003)

Massive Quiescent Cores in Orion. I. Temperature Structure. *D. Li, P. F. Goldsmith, & K. Menten.* 587, 262 (2003)

H I Absorption toward Ultracompact H II Regions: Distances and Galactic Structure. *Vincent L. Fish, Mark J. Reid, David J. Wilner, & Ed Churchwell.* 587, 701 (2003)

The Millenium Arecibo 21 Centimeter Absorption-Line Survey. I. Techniques and Gaussian Fits. *Carl Heiles & T. H. Troland.* 145, 329 (2003)

A Sensitive Very Large Array Search for Small-Scale Glycine Emission toward OMC-1. *J. M. Hollis, J. A. Pedelty, L. E. Snyder, P. R. Jewell, F. J. Lovas, Patrick Palmer, & S.-Y. Liu.* 588, 353 (2003)

Precise Millimeter-Wave Laboratory Frequences for CS and $C^{34}S$. *C. A. Gottlieb, P. C. Myers, & P. Thaddeus.* 588, 655 (2003)

The Spectral Correlation Function of Molecular Clouds: A Statistical Test for Theoretical Models. *Paolo Padoan, Alyssa A. Goodman, & Mika Juvela.* 588, 881 (2003)

The Radio Spectrum of the Phenyl Radical. *R. J. McMahon, M. C. McCarthy, C. A. Gottlieb, J. B. Dudek, J. F. Stanton, & P. Thaddeus.* 590, L61 (2003)

Two Molecular Clouds near M17. *T. L. Wilson, M. M. Hanson, & D. Muders.* 590, 895 (2003)

Photoelectric Heating and [C II] Cooling in Translucent Clouds: Results for Cloud Models Based on Simulations of Compressible Magnetohydrodynamic Turbulence. *M. Juvela, P. Padoan, & R. Jimenez.* 591, 258 (2003)

High-Velocity Cloud Complex H: A Satellite of the Milky Way in a Retrograde Orbit? *Felix J. Lockman.* 591, L33 (2003)

[C I] 492 GHz Mapping Observations of the High-Latitude Translucent Cloud MCLD 123.5+24.9. *F. Bensch, U. Leuenhagen, J. Stutzki, & R. Schieder.* 591, 1013 (2003)

High-Resolution Imaging of CO Outflows in OMC-2 and OMC-3. *Jonathan P. Williams, R. L. Plambeck, & Mark H. Heyer.* 591, 1025 (2003)

Statistics of Velocity from Spectral Data: Modified Velocity Centroids. *A. Lazarian & A. Esquivel.* 592, L37 (2003)

Detection of OH Absorption against PSR B1849+00. *Snežana Stanimirović, Joel M. Weisberg, John M. Dickey, Anton de la Fuente, Kathryn Devine, Abigail Hedden, & Stuart B. Anderson.* 592, 953 (2003)

The Radio Spectrum of Si_3. *M. C. McCarthy & P. Thaddeus.* 592, L91 (2003)

Precise Laboratory Frequencies of the J = 1–0 and J = 2–1 Rotational Transitions of $C^{18}O$. *G. Cazzoli, C. Puzzarini, & A. V. Lapinov.* 592, L95 (2003)

Mechanisms for the Origin of Turbulence in Non–Star-forming Clouds: The Translucent Cloud MBM 40. *Steven N. Shore, Loris Magnani, T. N. LaRosa, & Meredith N. McCarthy.* 593, 413 (2003)

Interstellar Glycine. *Yi-Jehng Kuan, Steven B. Charnley, Hui-Chun Huang, Wei-Ling Tseng, & Zbigniew Kisiel.* 593, 848 (2003)

A Class of Interstellar OH Masers Associated with Protostellar Outflows. *Alice L. Argon, Mark J. Reid, & Karl M. Menten.* 593, 925 (2003)

First Detection of Doubly Deuterated Hydrogen Sulfide. *C. Vastel, T. G. Phillips, C. Ceccarelli, & J. Pearson.* 593, L97 (2003)

Small-Scale Structure of Low-Density Gas in a Dark Cloud Envelope: Kinematic Evidence for Phase Transition? *Seiichi Sakamoto & Kazuyoshi Sunada.* 594, 340 (2003)

Loops, Drips, and Walls in the Galactic Chimney GSH 277+00+36. *N. M. McClure-Griffiths, John M. Dickey, B. M. Gaensler, & A. J. Green.* 594, 833 (2003)

Mapping Observations of DNC and $HN^{13}C$ in Dark Cloud Cores. *Tomoya Hirota, Masafumi Ikeda, & Satoshi Yamamoto.* 594, 859 (2003)

Intrinsic, Observed, and Retrieved Properties of Interstellar Turbulence. *Christopher M. Brunt, Mark H. Heyer, Enrique Vázquez-Semadeni, & Bárbara Pichardo.* 595, 824 (2003)

Interstellar Hydroxyl Masers in the Galaxy. II. Zeeman Pairs and the Galactic Magnetic Field. *Vincent L. Fish, Mark J. Reid, Alice L. Argon, & Karl M. Menten.* 596, 328 (2003)

Dual Cometary H II Regions in DR 21: Bow Shocks or Champagne Flows? *C. J. Cyganowski, M. J. Reid, V. L. Fish, & P. T. P. Ho.* 596, 344 (2003)

Molecular Counterparts of Ultracompact H II Regions with Extended Envelopes. *Kee-Tae Kim & Bon-Chul Koo.* 596, 362 (2003)

Laboratory Spectrum of the 1_{11}–2_{02} Rotational Transition of CH_2. *Ernest A. Michael, Frank Lewen, Gisbert Winnewisser, Hiroyuki Ozeki, Hideta Habara, & Eric Herbst.* 596, 1356 (2003)

Kinematics of the SGR B2 (N-LMH) Molecular Core. *Jan M. Hollis, J. A. Pedelty, D. A. Boboltz, S.-Y. Liu, L. E. Snyder, Patrick Palmer, F. J. Lovas, & P. R. Jewell.* 596, L235 (2003)

The Millimeter- and Submillimeter-Wave Spectrum of the Trans-Trans Conformer of Diethyl Ether ($C_2H_5OC_2H_5$). *Ivan Medvedev, Manfred Winnewisser, Frank C. De Lucia, Eric Herbst, Ewa Bialkowski–Jaworska, Oleksandr Desyatnyk, Lech Pszczolkowski, Zbigniew Kisiel, Enyi Yi, Lai Peng Leong, & Ryan P. A. Bettens.* 148, 593 (2003)

Small-Scale Structure in the Galactic Interstellar Medium: Implications for Galaxy Cluster Studies. *Joel N. Bregman, Megan C. Novicki, Jessica E. Krick, & John S. Arabadjis.* 597, 399 (2003)

VLA and BIMA Observations toward the Exciting Source of the Massive HH 80–81 Outflow. *Y. Gómez, L. F. Rodríguez, J. M. Girart, G. Garay, & J. Martí.* 597, 414 (2003)

Apparent Sizes and Spectral Line Profiles for Spherical and Disk Masers: Solutions to the Full Equations. *W. D. Watson & H. W. Wyld.* 598, 357 (2003)

A Neutral Hydrogen Self-Absorption Cloud in the Southern Galactic Plane Survey. *D. W. Kavars, J. M. Dickey, N. M. McClure-Griffiths, B. M. Gaensler, & A. J. Green.* 598, 1048 (2003)

The Formaldehyde Masers in NGC 7538 and G29.96−0.02: Very Long Baseline Array, Multielement Radio-linked Interferometer Network, and Very Large Array Observations. *Ian M. Hoffman, W. M. Goss, Patrick Palmer, & A. M. S. Richards.* 598, 1061 (2003)

RADIO LINES: STARS

First Detection of Vibrationally Excited HNC in Space. *Peter Schilke, Claudio Comito, & Sven Thorwirth.* 582, L101 (2003)

Detection of HCN Direct l-Type Transitions Probing Hot Molecular Gas in the Proto–Planetary Nebula CRL 618. *S. Thorwirth, F. Wyrowski, P. Schilke, K. M. Menten, S. Brünken, H. S. P. Müller, & G. Winnewisser.* 586, 338 (2003)

Physical Conditions in the Proto–Planetary Nebula CRL 618 Derived from Observations of Vibrationally Excited HC_3N. *F. Wyrowski, P. Schilke, S. Thorwirth, K. M. Menten, & G. Winnewisser.* 586, 344 (2003)

A Polarization Survey of SiO Maser Variability in Evolved Stars. *J. Glenn, P. R. Jewell, R. Fourre, & L. Miaja.* 588, 478 (2003)

R Cassiopeiae: Relative Strengths of SiO Masers at 43 and 86 GHz. *R. B. Phillips, A. H. Straughn, S. S. Doeleman, & C. J. Lonsdale.* 588, L105 (2003)

Detections of OH toward the Extreme Carbon Star IRC +10216. *K. E. Saavik Ford, David A. Neufeld, Paul F. Goldsmith, & Gary J. Melnick.* 589, 430 (2003)

The Stellar "Wind" of MWC 349A. *M. A. Gordon.* 589, 953 (2003)

The Salty Scrambled Egg: Detection of NaCl toward CRL 2688. *J. L. Highberger, K. J. Thomson, P. A. Young, D. Arnett, & L. M. Ziurys.* 593, 393 (2003)

A C-Band Spectral Scan of IRC +10°216. *Esteban Araya, Peter Hofner, Paul Goldsmith, Slava Slysh, & Shuro Takano.* 596, 556 (2003)

Continuum and CO/HCO^+ Emission from the Disk around the T Tauri Star LkCa 15. *Chunhua Qi, Jacqueline E. Kessler, David W. Koerner, Anneila I. Sargent, & Geoffrey A. Blake.* 597, 986 (2003)

RELATIVITY

Charged Black Holes: Wave Equations for Gravitational and Electromagnetic Perturbations. *Zoltán Perjés & Mátyás Vasúth.* 582, 342 (2003)

Pseudo-Newtonian Potentials to Describe the Temporal Effects on Relativistic Accretion Disks around Rotating Black Holes and Neutron Stars. *Banibrata Mukhopadhyay & Ranjeev Misra.* 582, 347 (2003)

Spectral Lines from Rotating Neutron Stars. *Feryal Ozel & Dimitrios Psaltis.* 582, L31 (2003)

GRB 021004: Reverse Shock Emission. *Shiho Kobayashi & Bing Zhang.* 582, L75 (2003)

Relativistic Dyson Rings and Their Black Hole Limit. *M. Ansorg, A. Kleinwächter, & R. Meinel.* 582, L87 (2003)

The Effect of External Winds on Relativistic Jets. *Philip E. Hardee & Philip A. Hughes.* 583, 116 (2003)

Relativistic Singular Isothermal Toroids. *Mike J. Cai & Frank H. Shu.* 583, 391 (2003)

Effects of Differential Rotation on the Maximum Mass of Neutron Stars. *Nicholas D. Lyford, Thomas W. Baumgarte, & Stuart L. Shapiro.* 583, 410 (2003)

Non-Oscillatory Central Difference and Artificial Viscosity Schemes for Relativistic Hydrodynamics. *Peter Anninos & P. Chris Fragile.* 144, 243 (2003)

Diffuse X-Rays from a Distributed Component of Dark Surrounding Sagittarius A*. *Martin Pessah & Fulvio Melia.* 585, L29 (2003)

General Relativistic Magnetohydrodynamics for the Numerical Construction of Dynamical Spacetimes. *Thomas W. Baumgarte & Stuart L. Shapiro.* 585, 921 (2003)

Collapse of a Magnetized Star to a Black Hole. *Thomas W. Baumgarte & Stuart L. Shapiro.* 585, 930 (2003)

Relativistic Jets in Collapsars. *Weiqun Zhang, S. E. Woosley, & A. I. MacFadyen.* 586, 356 (2003)

On the Total Energy of Open Friedmann-Robertson-Walker Universes. *V. Faraoni & F. I. Cooperstock.* 587, 483 (2003)

Inner Boundary Conditions for Advection-dominated Accretion onto Black Holes. *Peter A. Becker & Truong Le.* 588, 408 (2003)

A Numerical Method for General Relativistic Magnetohydrodynamics. *Jean-Pierre De Villiers & John F. Hawley.* 589, 458 (2003)

Geodetic Precession and Timing of the Relativistic Binary Pulsars PSR B1534+12 and PSR 1913+16. *Maciej Konacki, Alex Wolszczan, & Ingrid H. Stairs.* 589, 495 (2003)

Dynamics of Relativistic Reconnection. *Maxim Lyutikov & Dmitri Uzdensky.* 589, 893 (2003)

Propagation Speed of Gravity and the Relativistic Time Delay. *Clifford M. Will.* 590, 683 (2003)

GRB 030226 in a Density-Jump Medium. *Z. G. Dai & X. F. Wu.* 591, L21 (2003)

Constraining the Structure of Gamma-Ray Burst Jets through the Afterglow Light Curves. *Jonathan Granot & Pawan Kumar.* 591, 1086 (2003)

Relativistic Acceleration of Magnetically Driven Jets. *Akira Tomimatsu & Masaaki Takahashi.* 592, 321 (2003)

Neutron-rich Hydromagnetic Outflows in Gamma-Ray Burst Sources. *Nektarios Vlahakis, Fang Peng, & Arieh Königl.* 594, L23 (2003)

Self-Consistency of Relativistic Observables with General Relativity in the White Dwarf–Neutron Star Binary PSR J1141−6545. *M. Bailes, S. M. Ord, H. S. Knight, & A. W. Hotan.* 595, L49 (2003)

Constrained Transport Algorithms for Numerical Relativity. I. Development of a Finite-Difference Scheme. *David L. Meier.* 595, 980 (2003)

Collapse of Rotating Supermassive Neutron Stars to Black Holes: Fully General Relativistic Simulations. *Masaru Shibata.* 595, 992 (2003)

Search for Relativistic Curvature Effects in Gamma-Ray Burst Pulses. *Dan Kocevski, Felix Ryde, & Edison Liang.* 596, 389 (2003)

Explosive Nucleosynthesis Associated with Formation of Jet-induced Gamma-Ray Bursts in Massive Stars. *S. Nagataki, A. Mizuta, S. Yamada, H. Takabe, & K. Sato.* 596, 401 (2003)

Relativistic Magnetohydrodynamics with Application to Gamma-Ray Burst Outflows. I. Theory and Semianalytic Trans-Alfvénic Solutions. *Nektarios Vlahakis & Arieh Königl.* 596, 1080 (2003)

Relativistic Magnetohydrodynamics with Applications to Gamma-Ray Burst Outflows. II. Semianalytic Super-Alfvénic Solutions. *Nektarios Vlahakis & Arieh Königl.* 596, 1104 (2003)

Hollow Cone Accretion Columns and Light-Bending Effects. *D. A. Leahy.* 596, 1131 (2003)

Early Optical Afterglows from Wind-Type Gamma-Ray Bursts. *Shiho Kobayashi & Bing Zhang.* 597, 455 (2003)

Modeling Helical Structures in Relativistic Jets. *Philip E. Hardee.* 597, 798 (2003)

A Method for Black Hole Mass Determination in Accretion-powered X-Ray Sources. *Chris R. Shrader & Lev Titarchuk.* 598, 168 (2003)

On the Eccentricity Distribution of Coalescing Black Hole Binaries Driven by the Kozai Mechanism in Globular Clusters. *Linqing Wen.* 598, 419 (2003)

The Measurement of the Light Deflection from Jupiter: Experimental Results. *E. B. Fomalont & S. M. Kopeikin.* 598, 704 (2003)

Altered Luminosity Functions of Relativistically Beamed Jet Populations. *M. L. Lister.* 599, 105 (2003)

Pair Loading in Gamma-Ray Burst Fireballs and Prompt Emission from Pair-rich Reverse Shocks. *Zhuo Li, Z. G. Dai, T. Lu, & L. M. Song.* 599, 380 (2003)

Stochastic Gravitational Wave Background: Upper Limits in the 10^{-6} to 10^{-3} Hz Band. *J. W. Armstrong, L. Iess, P. Tortora, & B. Bertotti.* 599, 806 (2003)

PSR J1909−3744: A Binary Millisecond Pulsar with a Very Small Duty Cycle. *B. A. Jacoby, M. Bailes, M. H. van Kerkwijk, S. Ord, A. Hotan, S. R. Kulkarni, & S. B. Anderson.* 599, L99 (2003)

SCATTERING

A Scattered Light Echo around SN 1993J in M81. *Ji-Feng Liu, Joel N. Bregman, & Patrick Seitzer.* 582, 919 (2003)

Resolving the Effects of Resonant X-Ray Line Scattering in Centaurus X-3 with *Chandra*. *Patrick S. Wojdowski, Duane A. Liedahl, Masao Sako, Steven M. Kahn, & Frederik Paerels.* 582, 959 (2003)

A 3 Year Long Extreme Scattering Event in the Direction of the Millisecond Pulsar J1643−1224. *V. Maitia, J.-F. Lestrade, & I. Cognard.* 582, 972 (2003)

A CLEAN-based Method for Deconvolving Interstellar Pulse Broadening from Radio Pulses. *N. D. R. Bhat, J. M. Cordes, & S. Chatterjee.* 584, 782 (2003)

Toward an ab Initio Theory of the Solar Modulation of Cosmic Rays. *S. Parhi, J. W. Bieber, W. H. Matthaeus, & R. A. Burger.* 585, 502 (2003)

Rapid Variability and Annual Cycles in the Characteristic Timescale of the Scintillating Source PKS 1257−326. *H. E. Bignall, D. L. Jauncey, J. E. J. Lovell, A. K. Tzioumis, L. Kedziora-Chudczer, J.-P. Macquart, S. J. Tingay, D. P. Rayner, & R. W. Clay.* 585, 653 (2003)

Explaining the Observed Polarization from Brown Dwarfs by Single Dust Scattering. *Sujan Sengupta.* 585, L155 (2003)

Interferometric Detection of Linear Polarization from Sagittarius A* at 230 GHz. *Geoffrey C. Bower, Melvyn C. H. Wright, Heino Falcke, & Donald C. Backer.* 588, 331 (2003)

The Circumstellar Disk of the Butterfly Star in Taurus. *Sebastian Wolf, Deborah L. Padgett, & Karl R. Stapelfeldt.* 588, 373 (2003)

The First Detection of Spatially Resolved Mid-Infrared Scattered Light from a Protoplanetary Disk. *C. McCabe, G. Duchêne, & A. M. Ghez.* 588, L113 (2003)

Radiative Torques on Interstellar Grains. III. Dynamics with Thermal Relaxation. *Joseph C. Weingartner & B. T. Draine.* 589, 289 (2003)

The Pleiades Reflection Nebula. I. Ultraviolet, Optical, and Far-Infrared Imaging Photometry. *Steven J. Gibson & Kenneth H. Nordsieck.* 589, 347 (2003)

The Pleiades Reflection Nebula. II. Simple Model Constraints on Dust Properties and Scattering Geometry. *Steven J. Gibson & Kenneth H. Nordsieck.* 589, 362 (2003)

Monte Carlo Study of Supernova Neutrino Spectra Formation. *Mathias Th. Keil, Georg G. Raffelt, & Hans-Thomas Janka.* 590, 971 (2003)

Radiative Acceleration and Transient, Radiation-induced Electric Fields. *L. Zampieri, R. Turolla, L. Foschini, & A. Treves.* 592, 368 (2003)

The Effect of the Compton Backscattering Component on the Photon Spectra of Three *Yohkoh*/Hard X-Ray Telescope Flares. *Jian Zhang & Guang Li Huang.* 592, L49 (2003)

Broad Hα Wings in Nebulae around Evolved Stars and in Young Planetary Nebulae. *A. Arrieta & S. Torres-Peimbert.* 147, 97 (2003)

Modeling the Transport of Polarized Radiation Due to Scattering in Spherical Dust Shells. *David A. Joiner & Chun Ming Leung.* 593, 402 (2003)

The Scattered X-Ray Halo around Nova Cygni 1992: Testing a Model for Interstellar Dust. *B. T. Draine & Jonathan C. Tan.* 594, 347 (2003)

Interactions of Dust Grains with Coronal Mass Ejections and Solar Cycle Variations of the F-Coronal Brightness. *B. R. Ragot & S. W. Kahler.* 594, 1049 (2003)

Linear Polarization Measurements of Chromospheric Emission Lines. *N. R. Sheeley, Jr., & C. U. Keller.* 594, 1085 (2003)

Extrinsic Radio Variability of JVAS/CLASS Gravitational Lenses. *L. V. E. Koopmans, A. Biggs, R. D. Blandford, I. W. A. Browne, N. J. Jackson, S. Mao, P. N. Wilkinson, A. G. de Bruyn, & J. Wambsganss.* 595, 712 (2003)

Experimental Study of Light Scattering by Large Dust Aggregates Consisting of Micron-Sized SiO_2 Monospheres. *Gerhard Wurm, Helena Relke, & Johann Dorschner.* 595, 891 (2003)

Detection of a Fully Resolved Compton Shoulder of the Iron Kα Line in the *Chandra* X-Ray Spectrum of GX 301-2. *Shin Watanabe, Masao Sako, Manabu Ishida, Yoshitaka Ishisaki, Steve M. Kahn, Takayoshi Kohmura, Umeyo Morita, Fumiaki Nagase, Frederik Paerels, & Tadayuki Takahashi.* 597, L37 (2003)

Raman-scattered He II λ6545 Line in the Symbiotic Star V1016 Cygni. *Hee-Won Lee, Young-Jong Sohn, Young Woon Kang, & Ho-Il Kim.* 598, 553 (2003)

The Effect of Multiple Scattering on the Polarization from Binary Star Envelopes. I. Self- and Externally Illuminated Disks. *Jennifer L. Hoffman, Barbara A. Whitney, & Kenneth H. Nordsieck.* 598, 572 (2003)

Scattering by Interstellar Dust Grains. I. Optical and Ultraviolet. *B. T. Draine.* 598, 1017 (2003)

Scattering by Interstellar Dust Grains. II. X-Rays. *B. T. Draine.* 598, 1026 (2003)

SHOCK WAVES

Nonlinear Effects in Models of the Galaxy. I. Midplane Stellar Orbits in the Presence of Three-Dimensional Spiral Arms. *Bárbara Pichardo, Marco Martos, Edmundo Moreno, & Julia Espresate.* 582, 230 (2003)

GRB 021004: Reverse Shock Emission. *Shiho Kobayashi & Bing Zhang.* 582, L75 (2003)

Iron-rich Ejecta in the Supernova Remnant DEM L71. *John P. Hughes, Parviz Ghavamian, Cara E. Rakowski, & Patrick O. Slane.* 582, L95 (2003)

The Interaction of Supernova Remnants with Interstellar Clouds: Experiments on the Nova Laser. *Richard I. Klein, Kimberly S. Budil, Theordore S. Perry, & David R. Bach.* 583, 245 (2003)

Thermal OH (1667/1665 MHz) Absorption and Nonthermal OH (1720 MHz) Emission toward the W28 Supernova Remnant. *F. Yusef-Zadeh, M. Wardle, & D. A. Roberts.* 583, 267 (2003)

Nonthermal Radiation from Clusters of Galaxies: The Role of Merger Shocks in Particle Acceleration. *Stefano Gabici & Pasquale Blasi.* 583, 695 (2003)

Ultrafast Self-Compton Cooling. *Kunihito Ioka.* 583, 819 (2003)

On the Magnetic Fields and Particle Acceleration in Cassiopeia A. *Jacco Vink & J. Martin Laming.* 584, 758 (2003)

Far-Ultraviolet Spectra of a Nonradiative Shock Wave in the Cygnus Loop. *John C. Raymond, Parviz Ghavamian, Ravi Sankrit, William P. Blair, & Salvador Curiel.* 584, 770 (2003)

X-Rays from the Vicinity of the Protostar L1551 IRS 5: Reflection or Fast Shocks? *John Bally, Eric Feigelson, & Bo Reipurth.* 584, 843 (2003)

Stability of Standing Accretion Shocks, with an Eye toward Core-Collapse Supernovae. *John M. Blondin, Anthony Mezzacappa, & Christine DeMarino.* 584, 971 (2003)

Origin and Interpretation of Kilohertz Quasi-periodic Oscillations from Strange Stars in an X-Ray Binary Systems: Theoretical Hydrodynamical Description. *Banibrata Mukhopadhyay, Subharthi Ray, Jishnu Dey, & Mira Dey.* 584, L83 (2003)

Gamma Rays from Intergalactic Shocks. *Uri Keshet, Eli Waxman, Abraham Loeb, Volker Springel, & Lars Hernquist.* 585, 128 (2003)

OH (1720 MHz) Masers and Mixed-Morphology Supernova Remnants. *F. Yusef-Zadeh, M. Wardle, J. Rho, & M. Sakano.* 585, 319 (2003)

The SN 1006 Remnant: Optical Proper Motions, Deep Imaging, Distance, and Brightness at Maximum. *P. Frank Winkler, Gaurav Gupta, & Knox S. Long.* 585, 324 (2003)

Neutron-fed Afterglows of Gamma-Ray Bursts. *Andrei M. Beloborodov.* 585, L19 (2003)

Pearson-Readhead Survey Sources. II. The Long-Term Centimeter-Band Total Flux and Linear Polarization Properties of a Complete Radio Sample. *M. F. Aller, H. D. Aller, & P. A. Hughes.* 586, 33 (2003)

Cause of Proton Depletion in Solar Impulsive Particle Events. *K. Ohki.* 586, 617 (2003)

Stability of Accretion Disk around Rotating Black Holes: A Pseudo–General-Relativistic Fluid Dynamical Study. *Banibrata Mukhopadhyay.* 586, 1268 (2003)

Slow Temperature Equilibration behind the Shock Front of SN 1006. *Jacco Vink, J. Martin Laming, Ming Feng Gu, Andrew Rasmussen, & Jelle S. Kaastra.* 587, L31 (2003)

Evidence for a Suprathermal Seed Population of Heavy Ions Accelerated by Interplanetary Shocks near 1 AU. *M. I. Desai, G. M. Mason, J. R. Dwyer, J. E. Mazur, R. E. Gold, S. M. Krimigis, C. W. Smith, & R. M. Skoug.* 588, 1149 (2003)

Role of Shocked Accretion Flows in Regulating the Quasi-Periodic Oscillation of Galactic Black Hole Candidates. *Tapas K. Das.* 588, L89 (2003)

Optical and Far-Ultraviolet Spectroscopy of Knot D in the Vela Supernova Remnant. *Ravi Sankrit, William P. Blair, & John C. Raymond.* 589, 242 (2003)

Solar Wind Speed and Temperature outside 10 AU and the Termination Shock. *Y. C. Whang, L. F. Burlaga, Y.-M. Wang, & N. R. Sheeley, Jr.* 589, 635 (2003)

Small-Scale Structure of the SN 1006 Shock with *Chandra* Observations. *Aya Bamba, Ryo Yamazaki, Masaru Ueno, & Katsuji Koyama.* 589, 827 (2003)

Particle Transport in Tangled Magnetic Fields and Fermi Acceleration at Relativistic Shocks. *Martin Lemoine & Guy Pelletier.* 589, L73 (2003)

A Standard Kinetic Energy Reservoir in Gamma-Ray Burst Afterglows. *E. Berger, S. R. Kulkarni, & D. A. Frail.* 590, 379 (2003)

The Physics of Supernova Blast Waves. I. Kinematics of DEM L71 in the Large Magellanic Cloud. *Parviz Ghavamian, Cara E. Rakowski, John P. Hughes, & T. B. Williams.* 590, 833 (2003)

The Physics of Supernova Remnant Blast Waves. II. Electron-Ion Equilibration in DEM L71 in the Large Magellanic Cloud. *Cara E. Rakowski, Parviz Ghavamian, & John P. Hughes.* 590, 846 (2003)

Trapped Protostellar Winds and Their Breakout. *Francis P. Wilkin & Steven W. Stahler.* 590, 917 (2003)

The Numerical Simulation of Radiative Shocks. II. Thermal Instabilities in Two-dimensional Models. *Ralph S. Sutherland, Geoffrey V. Bicknell, & Michael A. Dopita.* 591, 238 (2003)

Cosmic-Ray Spectra at Spherical Termination Shocks. *V. Florinski & J. R. Jokipii.* 591, 454 (2003)

GRB 030226 in a Density-Jump Medium. *Z. G. Dai & X. F. Wu.* 591, L21 (2003)

On Particle Acceleration around Shocks. I. *Mario Vietri.* 591, 954 (2003)

Constraining the Structure of Gamma-Ray Burst Jets through the Afterglow Light Curves. *Jonathan Granot & Pawan Kumar.* 591, 1086 (2003)

Multiwavelength Spectroscopy of the Bipolar Outflow from Cepheus E. *Michael D. Smith, Dirk Froebrich, & Jochen Eislöffel.* 592, 245 (2003)

On the Generation of Ultra–High-Energy Cosmic Rays in Gamma-Ray Bursts: A Reappraisal. *Mario Vietri, Daniel De Marco, & Dafne Guetta.* 592, 378 (2003)

The Effect of Angular Structure of Gamma-Ray Burst Outflows on the Afterglow Emission. *A. Panaitescu & P. Kumar.* 592, 390 (2003)

Cosmos: A Radiation-Chemo-Hydrodynamics Code for Astrophysical Problems. *Peter Anninos, P. Chris Fragile, & Stephen D. Murray.* 147, 177 (2003)

The Numerical Simulation of Radiative Shocks. I. The Elimination of Numerical Shock Instabilities Using a Local Oscillation Filter. *Ralph S. Sutherland, David K. Bisset, & Geoffrey V. Bicknell.* 147, 187 (2003)

Global Anisotrophy versus Small-Scale Fluctuations in Neutrino Flux in Core-Collapse Supernova Explosions. *Hideki Madokoro, Tetsuya Shimizu, & Yuko Mochizuki.* 592, 1035 (2003)

Multitransonic Black Hole Accretion Disks with Isothermal Standing Shocks. *Tapas K. Das, Jayant K. Pendharkar, & Sanjit Mitra.* 592, 1078 (2003)

Polarization and Fragmentation of Solar Type II Radio Bursts. *G. Thejappa, P. Zlobec, & R. J. MacDowall.* 592, 1234 (2003)

Chandra Observation of the Merging Cluster A2034. *Joshua C. Kempner, Craig L. Sarazin, & Maxim Markevitch.* 593, 291 (2003)

Ejecta Detection in Middle-aged Large Magellanic Cloud Supernova Remnants 0548−70.4 and 0534−69.9. *S. P. Hendrick, K. J. Borkowski, & S. P. Reynolds.* 593, 370 (2003)

Loss Cone Precursors to Forbush Decreases and Advance Warning of Space Weather Effects. *K. Leerungnavarat, D. Ruffolo, & J. W. Bieber.* 593, 587 (2003)

Cosmological Shock Waves and Their Role in the Large-Scale Structure of the Universe. *Dongsu Ryu, Hyesung Kang, Eric Hallman, & T. W. Jones.* 593, 599 (2003)

Hubble Space Telescope Observations of High-Velocity Lyα and Hα Emission from Supernova Remnant 1987A: The Structure and Development of the Reverse Shock. *Eli Michael, Richard McCray, Roger Chevalier, Alexei V. Filippenko, Peter Lundqvist, Peter Challis, Ben Sugerman, Stephen Lawrence, C. S. J. Pun, Peter Garnavich, Robert Kirshner, Arlin Crotts, Claes Fransson, Weidong Li, Nino Panagia, Mark Phillips, Brian Schmidt, George Sonneborn, Nicholas Suntzeff, Lifan Wang, & J. Craig Wheeler.* 593, 809 (2003)

Supernova Reverse Shocks: SiC Growth and Isotopic Composition. *Ethan A.-N. Deneault, Donald D. Clayton, & Alexander Heger.* 594, 312 (2003)

Nonthermal Particles and Radiation Produced by Cluster Merger Shocks. *Robert C. Berrington & Charles D. Dermer.* 594, 709 (2003)

Stability of an Ultrarelativistic Blast Wave in an External Medium with a Steep Power-Law Density Profile. *Xiaohu Wang, Abraham Loeb, & Eli Waxman.* 594, 924 (2003)

Linear Polarization in Gamma-Ray Bursts: The Case for an Ordered Magnetic Field. *Jonathan Granot & Arieh Königl.* 594, L83 (2003)

Supernova Remnant Crossing a Density Jump: A Thin-Shell Model. *Yang Chen, Fan Zhang, Rosa M. Williams, & Q. Daniel Wang.* 595, 227 (2003)

Molecular Outflows in The Young Open Cluster IC 348. *Jochen Eislöffel, Dirk Froebrich, Thomas Stanke, & Mark J. McCaughrean.* 595, 259 (2003)

Particle Acceleration in Relativistic Jets due to Weibel Instability. *K.-I. Nishikawa, P. Hardee, G. Richardson, R. Preece, H. Sol, & G. J. Fishman.* 595, 555 (2003)

Circular Polarization from Gamma-Ray Burst Afterglows. *Makoto Matsumiya & Kunihito Ioka.* 595, L25 (2003)

Gamma-Ray Burst Early Optical Afterglows: Implications for the Initial Lorentz Factor and the Central Engine. *Bing Zhang, Shiho Kobayashi, & Peter Mészáros.* 595, 950 (2003)

Magnetohydrodynamic Shock Heating of the Solar Corona. *J. A. Orta, M. A. Huerta, & G. C. Boynton.* 596, 646 (2003)

The Most Probable Cause for the High Gamma-Ray Polarization in GRB 021206. *Jonathan Granot.* 596, L17 (2003)

Early Optical Afterglows from Wind-Type Gamma-Ray Bursts. *Shiho Kobayashi & Bing Zhang.* 597, 455 (2003)

The Origin of the Galactic Center Nonthermal Radio Filaments: Young Stellar Clusters. *F. Yusef-Zadeh.* 598, 325 (2003)

Direct Detection of a Coronal Mass Ejection–Associated Shock in Large Angle and Spectrometric Coronagraph Experiment White-Light Images. *A. Vourlidas, S. T. Wu, A. H. Wang, P. Subramanian, & R. A. Howard.* 598, 1392 (2003)

SOLAR SYSTEM: FORMATION

On the Fate of Close-in Extrasolar Planets. *Ing-Guey Jiang, Wing-Huen Ip, & Li-Chen Yeh.* 582, 449 (2003)

Fluorescence Efficiencies of Monodeuterio-Methane in Comets: Toward the Determination of the Deuterium/Hydrogen Ratio in Methane. *Hideyo Kawakita & Jun-ichi Watanabe.* 582, 534 (2003)

A Reduced Efficiency of Terrestrial Planet Formation Following Giant Planet Migration. *Philip J. Armitage.* 582, L47 (2003)

Cool Bottom Processes on the Thermally Pulsing Asymptotic Giant Branch and the Isotopic Composition of Circumstellar Dust Grains. *Kenneth M. Nollett, M. Busso, & G. J. Wasserburg.* 582, 1036 (2003)

On Pressure Gradients and Rapid Migration of Solids in a Nonuniform Solar Nebula. *Nader Naghighipour & Alan P. Boss.* 583, 996 (2003)

The Inner Rings of β Pictoris. *Z. Wahhaj, D. W. Koerner, M. E. Ressler, M. W. Werner, D. E. Backman, & A. I. Sargent.* 584, L27 (2003)

The Kuiper Belt as a Resonant Cavity. *William R. Ward.* 584, L39 (2003)

Halting Planet Migration by Photoevaporation from the Central Source. *Isamu Matsuyama, Doug Johnstone, & Norman Murray.* 585, L143 (2003)

Detections of Rovibrational H_2 Emission from the Disks of T Tauri Stars. *Jeffrey S. Bary, David A. Weintraub, & Joel H. Kastner.* 586, 1136 (2003)

Occultation Searches for Kuiper Belt Objects. *Asantha Cooray & Alison J. Farmer.* 587, L125 (2003)

The Initial Abundance of ^{60}Fe in the Solar System. *S. Tachibana & G. R. Huss.* 588, L41 (2003)

Kuiper Belt Object Sizes and Distances from Occultation Observations. *Asantha Cooray.* 589, L97 (2003)

The Thermal Regulation of Gravitational Instabilities in Protoplanetary Disks. *Brian K. Pickett, Annie C. Mejía, Richard H. Durisen, Patrick M. Cassen, Donald K. Berry, & Robert P. Link.* 590, 1060 (2003)

Solar System Abundances and Condensation Temperatures of the Elements. *Katharina Lodders.* 591, 1220 (2003)

A Simplified Model for an Evolving Protoplanetary Nebula. *Sanford S. Davis.* 592, 1193 (2003)

Evaporation of Interstellar Organic Materials in the Solar Nebula. *Hideyuki Nakano, Akira Kouchi, Shogo Tachibana, & Akira Tsuchiyama.* 592, 1252 (2003)

Surface Outflow in Optically Thick Dust Disks by Radiation Pressure. *Taku Takeuchi & D. N. C. Lin.* 593, 524 (2003)

The Predictable Collateral Consequences of Nucleosynthesis by Spallation Reactions in the Early Solar System. *I. Leya, A. N. Halliday, & R. Wieler.* 594, 605 (2003)

A Search for Small Kuiper Belt Objects by Stellar Occultations. *F. Roques, M. Moncuquet, N. Lavillonière, M. Auvergne, M. Chevreton, F. Colas, & J. Lecacheux.* 594, L63 (2003)

The Secular Evolution of the Primordial Kuiper Belt. *Joseph M. Hahn.* 595, 531 (2003)

Experimental Study of Light Scattering by Large Dust Aggregates Consisting of Micron-Sized SiO_2 Monospheres. *Gerhard Wurm, Helena Relke, & Johann Dorschner.* 595, 891 (2003)

Nonlinear Outcome of Gravitational Instability in Disks with Realistic Cooling. *Bryan M. Johnson & Charles F. Gammie.* 597, 131 (2003)

Resonant Inclination Excitation of Migrating Giant Planets. *Edward W. Thommes & Jack J. Lissauer.* 597, 566 (2003)

The Origin of Jovian Planets in Protostellar Disks: The Role of Dead Zones. *Soko Matsumura & Ralph E. Pudritz.* 598, 645 (2003)

On the Formation Timescale and Core Masses of Gas Giant Planets. *W. K. M. Rice & Philip J. Armitage.* 598, L55 (2003)

On Gas Drag–Induced Rapid Migration of Solids in a Nonuniform Solar Nebula. *Nader Haghighipour & Alan P. Boss.* 598, 1301 (2003)

Rapid Formation of Outer Giant Planets by Disk Instability. *Alan P. Boss.* 599, 577 (2003)

Color Patterns in the Kuiper Belt: A Possible Primordial Origin. *S. C. Tegler, W. Romanishin, & G. J. Consolmagno, S.J.* 599, L49 (2003)

Infrared Properties of Solid Titanium Oxides: Exploring Potential Primary Dust Condensates. *T. Posch, F. Kerschbaum, D. Fabian, H. Mutschke, J. Dorschner, A. Tamanai, & T. Henning.* 149, 437 (2003)

SOLAR SYSTEM: GENERAL

On the Fate of Close-in Extrasolar Planets. *Ing-Guey Jiang, Wing-Huen Ip, & Li-Chen Yeh.* 582, 449 (2003)

Scintillation Caustics in Planetary Occultation Light Curves. *Asantha R. Cooray & J. L. Elliot.* 587, L121 (2003)

A Possible Correlation between Mass Ratio and Period Ration in Multiple Planetary Systems. *Tsevi Mazeh & Shay Zucker.* 590, L115 (2003)

Successive Refinements in Long-Term Integrations of Planetary Orbits. *F. Varadi, B. Runnegar, & M. Ghil.* 592, 620 (2003)

Stable 1:2 Resonant Periodic Orbits in Elliptic Three-Body Systems. *Nader Haghighipour, Jocelyn Couetdic, Ferenc Varadi, & William B. Moore.* 596, 1332 (2003)

Resonant Structure in the Kuiper Disk: An Asymmetric Plutino Disk. *Elizabeth K. Holmes, Stanley F. Dermott, Bo Å. S. Gustafson, & Keith Grogan.* 597, 1211 (2003)

SPACE VEHICLES

Measurement of ^{3}He/^{4}He in the Local Interstellar Medium: The Collisa Experiment on *Mir*. *E. Salerno, F. Bühler, P. Bochsler, H. Busemann, M. L. Bassi, G. N. Zastenker, Yu. N. Agafonov, & N. A. Eismont.* 585, 840 (2003)

SPACE VEHICLES: INSTRUMENTS

The *Microwave Anisotropy Probe* Mission. *C. L. Bennett, M. Bay, M. Halpern, G. Hinshaw, C. Jackson, N. Jarosik, A. Kogut, M. Limon, S. S. Meyer, L. Page, D. N. Spergel, G. S. Tucker, D. T. Wilkinson, E. Wollack, & E. L. Wright.* 583, 1 (2003)

The Optical Design and Characterization of the *Microwave Anisotropy Probe*. *L. Page, C. Jackson, C. Barnes, C. Bennett, M. Halpern, G. Hinshaw, N. Jarosik, A. Kogut, M. Limon, S. S. Meyer, D. N. Spergel, G. S. Tucker, D. T. Wilkinson, E. Wollack, & E. L. Wright.* 585, 566 (2003)

Design, Implementation, and Testing of the *Microwave Anisotropy Probe* Radiometers. *N. Jarosik, C. L. Bennett, M. Halpern, G. Hinshaw, A. Kogut, M. Limon, S. S. Meyer, L. Page, M. Pospieszalski, D. N. Spergel,*

G. S. Tucker, D. T. Wilkinson, E. Wollack, E. L. Wright, & Z. Zhang. 145, 413 (2003)

First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Preliminary Maps and Basic Results. *C. L. Bennett, M. Halpern, G. Hinshaw, N. Jarosik, A. Kogut, M. Limon, S. S. Meyer, L. Page, D. N. Spergel, G. S. Tucker, E. Wollack, E. L. Wright, C. Barnes, M. R. Greason, R. S. Hill, E. Komatsu, M. R. Nolta, N. Odegard, H. V. Peiris, L. Verde, & J. L. Weiland.* 148, 1 (2003)

First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: On-Orbit Radiometer Characterization. *N. Jarosik, C. Barnes, C. L. Bennett, M. Halpern, G. Hinshaw, A. Kogut, M. Limon, S. S. Meyer, L. Page, D. N. Spergel, G. S. Tucker, J. L. Weiland, E. Wollack, & E. L. Wright.* 148, 29 (2003)

First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Data Processing Methods and Systematic Errors Limits. *G. Hinshaw, C. Barnes, C. L. Bennett, M. R. Greason, M. Halpern, R. S. Hill, N. Jarosik, A. Kogut, M. Limon, S. S. Meyer, N. Odegard, L. Page, D. N. Spergel, G. S. Tucker, J. L. Weiland, E. Wollack, & E. L. Wright.* 148, 63 (2003)

First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: The Angular Power Spectrum. *G. Hinshaw, D. N. Spergel, L. Verde, R. S. Hill, S. S. Meyer, C. Barnes, C. L. Bennett, M. Halpern, N. Jarosik, A. Kogut, E. Komatsu, M. Limon, L. Page, G. S. Tucker, J. L. Weiland, E. Wollack, & E. L. Wright.* 148, 135 (2003)

The Structure of High Strehl Ratio Point-Spread Functions. *Marshall D. Perrin, Anand Sivaramakrishnan, Russell B. Makidon, Ben R. Oppenheimer, & James R. Graham.* 596, 702 (2003)

STARS: ABUNDANCES

Beryllium Abundances in F and G Dwarfs in the Pleiades and α Persei Clusters from Keck High-Resolution Echelle Spectrometer Observations. *Ann Merchant Boesgaard, Eric Armengaud, & Jeremy R. King.* 582, 410 (2003)

First Full Evolutionary Computation of the Helium Flash-induced Mixing in Population II Stars. *Santi Cassisi, Helmut Schlattl, Maurizio Salaris, & Achim Weiss.* 582, L43 (2003)

Cool Bottom Processes on the Thermally Pulsing Asymptotic Giant Branch and the Isotopic Composition of Circumstellar Dust Grains. *Kenneth M. Nollett, M. Busso, & G. J. Wasserburg.* 582, 1036 (2003)

Beryllium Abundances in F and G Dwarfs in the Coma Cluster and the Ursa Major Moving Group from Keck HIRES Observations. *Ann Merchant Boesgaard, Eric Armengaud, & Jeremy R. King.* 583, 955 (2003)

Quantitative Spectral Analysis of Early B-Type Supergiants in the Sculptor Galaxy NGC 300. *Miguel Alejandro Urbaneja, Aremio Herrero, Fabio Bresolin, Rolf-Peter Kudritzki, Wolfgang Gieren, & Joachim Puls.* 584, L73 (2003)

Relics of Subluminous Supernovae in Metal-poor Stars. *Takuji Tsujimoto & Toshikazu Shigeyama.* 584, L87 (2003)

Experimental f-Value and Isotopic Structure for the Ni I Line Blended with [O I] at 6300 Å. *S. Johansson, U. Litzén, H. Lundberg, & Z. Zhang.* 584, L107 (2003)

The Y^2 Stellar Evolutionary Tracks. *Sukyoung K. Yi, Yong-Cheol Kim, & Pierre Demarque.* 144, 259 (2003)

Diffusive Nuclear Burning in Neutron Star Envelopes. *Philip Chang & Lars Bildsten.* 585, 464 (2003)

Carbon Isotopes in Globular Clusters Down to the Bump in the Luminosity Function. *Matthew D. Shetrone.* 585, L45 (2003)

X-Ray Spectroscopy of η Carinae with *XMM-Newton*. *Maurice A. Leutenegger, Steven M. Kahn, & Gavin Ramsay.* 585, 1015 (2003)

Measurement of the Europium Isotope Ratio for the Extremely Metal-poor, r-Process–enhanced Star CS 31082-001. *Wako Aoki, Satoshi Honda, Timothy C. Beers, & Christopher Sneden.* 586, 506 (2003)

Excavation of the First Stars. *Toshikazu Shigeyama, Takuji Tsujimoto, & Yuzuru Yoshii.* 586, L57 (2003)

Some Nucleosynthesis Effects Associated with r-Process Jets. *A. G. W. Cameron.* 587, 327 (2003)

Abundances of Post–Iron-Peak Elements in HD 35155: A Symbiotic Star of Spectral Type S. *Andrew D. Vanture, George Wallerstein, Roberto Gallino, & Stefano Masera.* 587, 384 (2003)

On the Coupling between Helium Settling and Rotation-induced Mixing in Stellar Radiative Zones. I. Analytical Approach. *Sylvie Vauclair & Sylvie Théado.* 587, 777 (2003)

On the Coupling between Helium Settling and Rotation-induced Mixing in Stellar Radiative Zones. II. Numerical Approach. *Sylvie Théado & Sylvie Vauclair.* 587, 784 (2003)

On the Coupling between Helium Settling and Rotation-induced Mixing in Stellar Radiative Zones. III. Applications to Light Elements in Population I Main-Sequence Stars. *Sylvie Théado & Sylvie Vauclair.* 587, 795 (2003)

The Initial Helium Content of Galactic Globular Cluster Stars from the R-Parameter: Comparison with the Cosmic Microwave Background Constraint. *Santi Cassisi, Maurizio Salaris, & Alan W. Irwin.* 588, 862 (2003)

A Tale of Two Stars: The Extreme O7 Iaf+ Supergiant AV 83 and the OC7.5 III((f)) Star AV 69. *D. John Hillier, T. Lanz, S. R. Heap, I. Hubeny, L. J. Smith, C. J. Evans, D. J. Lennon, & J. C. Bouret.* 588, 1039 (2003)

Oxygen Abundance in the Template Halo Giant HD 122563. *Beatriz Barbuy, Jorge Meléndez, Monique Spite, Francois Spite, Eric Depagne, Vanessa Hill, Roger Cayrel, Piercarlo Bonifacio, Augusto Damineli, & Carlos A.O. Torres.* 588, 1072 (2003)

Abundance Analysis of HE 2146−1247, a Star with Extremely Enhanced Neutron Capture Elements. *Judith G. Cohen, Norbert Christlieb, Y.-Z. Qian, & G. J. Wasserburg.* 588, 1082 (2003)

Star Formation History of ω Centauri Imprinted in Elemental Abundance Patterns. *Takuji Tsujimoto & Toshikazy Shigeyama.* 590, 803 (2003)

An Abundance Analysis of the New Carbon-Rich Proto-Planetary Nebula IRAS 06530−0213. *Bruce J. Hrivnak & Bacham E. Reddy.* 590, 1049 (2003)

On Variations in the Peak Luminosity of Type Ia Supernovae. *F. X. Timmes, Edward F. Brown, & J. W. Truran.* 590, L83 (2003)

The Abundance Evolution of Oxygen, Sodium, and Magnesium in Extremely Metal-Poor Intermediate-Mass Stars: Implications for the Self-Pollution Scenario in Globular Clusters. *Pavel A. Denissenkov & Falk Herwig.* 590, L99 (2003)

Atomic Spectral Features during Thermonuclear Flashes on Neutron Stars. *Lars Bildsten, Philip Chang, & Frits Paerels.* 591, L29 (2003)

A Near-Infrared Spectroscopic Screening of the Red Giant Populations in ω Centauri. *Livia Origlia, Francesco R. Ferraro, Michele Bellazzini, & Elena Pancino.* 591, 916 (2003)

Chemical Abundances of Old Metal-rich Stars in the Solar Neighborhood. *Y. Q. Chen, G. Zhao, P. E. Nissen, G. S. Bai, & H. M. Qiu.* 591, 925 (2003)

The Extremely Metal-poor, Neutron Capture–rich Star CS 22892−052: A Comprehensive Abundance Analysis. *Christopher Sneden, John J. Cowan, James E. Lawler, Inese I. Ivans, Scott Burles, Timothy C. Beers, Francesca Primas, Vanessa Hill, James W. Truran, George M. Fuller, Bernd Pfeiffer, & Karl-Ludwig Kratz.* 591, 936 (2003)

Binary Blue Metal-Poor Stars: Evidence for Asymptotic Giant Branch Mass Transfer. *Christopher Sneden, George W. Preston, & John J. Cowan.* 592, 504 (2003)

Constraints on the Origin of Manganese from the Composition of the Sagittarius Dwarf Spheroidal Galaxy and the Galactic Bulge. *Andrew McWilliam, R. Michael Rich, & Tammy A. Smecker-Hane.* 592, L21 (2003)

Chemical Substructure in the Milky Way Halo: A New Population of Old Stars. *Inese I. Ivans, Christopher Sneden, C. Renée James, George W. Preston, Jon P. Fulbright, Peter A. Höflich, Bruce W. Carney, & J. Craig Wheeler.* 592, 906 (2003)

Detailed Analysis of Nearby Bulgelike Dwarf Stars. III. α-Element and Heavy-Element Abundances. *Luciana Pompéia, Beatriz Barbuy, & Michel Grenon.* 592, 1173 (2003)

Europium Isotope Ratios in s-Process Element-enhanced Metal-poor Stars: A New Probe of the ^{151}Sm Branching. *Wako Aoki, Sean G. Ryan, Nobuyuki Iwamoto, Timothy C. Beers, John E. Norris, Hiroyasu Ando, Toshitaka Kajino, Grant J. Mathews, & Masayuki Y. Fujimoto.* 592, L67 (2003)

Canonical Extra Mixing in Low-Mass Red Giants. *Pavel A. Denissenkov & Don A. VandenBerg.* 593, 509 (2003)

The r-Process in Supernovae Explosions from the Collapse of O-Ne-Mg Cores. *Shinya Wanajo, Masaya Tamamura, Naoki Itoh, Ken'ichi Nomoto, Yuhri Ishimaru, Timothy C. Beers, & Satoshi Nozawa.* 593, 968 (2003)

From the Heart of the Ghoul: C and N Abundances in the Corona of Algol B. *Jeremy J. Drake.* 594, 496 (2003)

X-Ray Evidence of the Common Envelope Phase of V471 Tauri. *Jeremy J. Drake & Marek J. Sarna.* 594, L55 (2003)

Nucleosynthesis in Baryon-Rich Outflows Associated with Gamma-Ray Bursts. *Susumu Inoue, Nobuyuki Iwamoto, Manabu Orito, & Mariko Terasawa.* 595, 294 (2003)

The Coronae of AR Lacertae. *David P. Huenemoerder, Claude R. Canizares, Jeremy J. Drake, & Jorge Sanz-Forcada.* 595, 1131 (2003)

A Reevaluation of the Super–Lithium-rich Star in NGC 6633. *Chris Laws & Guillermo Gonzalez.* 595, 1148 (2003)

Oxygen Abundances in Metal-poor Stars. *Jon P. Fulbright & Jennifer A. Johnson.* 595, 1154 (2003)

Quantitative Spectroscopy of O Stars at Low Metallicity: O Dwarfs in NGC 346. *J.-C. Bouret, T. Lanz, D. J. Hillier, S. R. Heap, I. Hubeny, D. J. Lennon, L. J. Smith, & C. J. Evans.* 595, 1182 (2003)

Metal Lines in DA White Dwarfs. *B. Zuckerman, D. Koester, I. N. Reid, & M. Huensch.* 596, 477 (2003)

The Impact of Pollution on Stellar Evolution Models. *Aaron Dotter & Brian Chaboyer.* 596, 496 (2003)

Stellar Pollution and [Fe/H] in the Hyades. *Aaron Dotter & Brian Chaboyer.* 596, L101 (2003)

The Metallicity of Pregalactic Globular Clusters: The Observational Consequences of the First Stars. *Michael A. Beasley, Daisuke Kawata, Frazer R. Pearce, Duncan A. Forbes, & Brad K. Gibson.* 596, L187 (2003)

Improved Laboratory Transition Probabilities for Nd II and Application to the Neodymium Abundances of the Sun and Three Metal-Poor Stars. *E. A. Den Hartog, J. E. Lawler, C. Sneden, & J. J. Cowan.* 148, 543 (2003)

Far Ultraviolet Spectroscopic Explorer Observation of the Ultramassive White Dwarf PG 1658+441. *Jean Dupuis, Pierre Chayer, Stéphane Vennes, Nicole F. Allard, & Guillaume Hébrard.* 598, 486 (2003)

The Distances to Open Clusters from Main-Sequence Fitting. I. New Models and a Comparison with the Properties of the Hyades Eclipsing Binary VB 22. *Marc H. Pinsonneault, Donald M. Terndrup, Robert B. Hanson, & John R. Stauffer.* 598, 588 (2003)

Accretion of Dust Grains as a Possible Origin of Metal-poor Stars with Low α/Fe Ratios. *Toshikazu Shigeyama & Takuji Tsujimoto.* 598, L47 (2003)

Chemical Abundances and Rotation Velocities of Blue Horizontal-Branch Stars in Six Globular Clusters. *Bradford B. Behr.* 149, 67 (2003)

Rotation Velocities of Red and Blue Field Horizontal-Branch Stars. *Bradford B. Behr.* 149, 101 (2003)

Bipolar Supernova Explosions: Nucleosynthesis and Implications for Abundances in Extremely Metal-Poor Stars. *Keiichi Maeda & Ken'ichi Nomoto.* 598, 1163 (2003)

Magnesium Isotopic Abundance Ratios in Cool Stars. *David Yong, David L. Lambert, & Inese I. Ivans.* 599, 1357 (2003)

STARS: ACTIVITY

Are Coronae of Magnetically Active Stars Heated by Flares? II. Extreme Ultraviolet and X-Ray Flare Statistics and the Differential Emission Measure Distribution. *Manuel Güdel, Marc Audard, Vinay L. Kashyap, Jeremy J. Drake, & Edward F. Guinan.* 582, 423 (2003)

Chandra, *Extreme Ultraviolet Explorer*, and Very Large Array Observations of the Active Binary System σ^2 Coronae Borealis. *Rachel A. Osten, Thomas R. Ayres, Alexander Brown, Jeffrey L. Linsky, & Anita Krishnamurthi.* 582, 1073 (2003)

Rotation and Activity in Mid-M to L Field Dwarfs. *Subhanjoy Mohanty & Gibor Basri.* 583, 451 (2003)

X-Rays in the Orion Nebula Cluster: Constraints on the Origins of Magnetic Activity in Pre–Main-Sequence Stars. *Eric D. Feigelson, James A. Gaffney III, Gordon Garmire, Lynne A. Hillenbrand, & Leisa Townsley.* 584, 911 (2003)

Fast X-Ray Transients and Their Connection to Gamma-Ray Bursts. *Vadim A. Arefiev, William C. Priedhorsky, & Konstantin N. Borozdin.* 586, 1238 (2003)

A Connection between the Morphology of the X-Ray Emission and Rotation for Solar-Type Stars in Open Clusters. *Sydney A. Barnes.* 586, L145 (2003)

Very Long Baseline Interferometry Imaging of the RS Canum Venaticorum Binary Star System HR 5110. *R. R. Ransom, N. Bartel, M. F. Bietenholz, M. I. Ratner, D. E. Lebach, I. I. Shapiro, & J.-F. Lestrade.* 587, 390 (2003)

Transition Region Emission from Very Low Mass Stars. *Suzanne L. Hawley & Christopher M. Johns-Krull.* 588, L109 (2003)

Asterospheric Magnetic Fields and Winds of Cool Stars. *Carolus J. Schrijver, Marc L. DeRosa, & Alan M. Title.* 590, 493 (2003)

Statistical Analysis of 5 Year Continuous Radio Flare Data from β Persei, V711 Tauri, δ Librae, and UX Arietis. *Mercedes T. Richards, Elizabeth B. Waltman, Frank D. Ghigo, & Donald St. P. Richards.* 147, 337 (2003)

From the Heart of the Ghoul: C and N Abundances in the Corona of Algol B. *Jeremy J. Drake.* 594, 496 (2003)

The Spectra of T Dwarfs. II. Red Optical Data. *Adam J. Burgasser, J. Davy Kirkpatrick, James Liebert, & Adam Burrows.* 594, 510 (2003)

Far-Ultraviolet Emissions of the Sun in Time: Probing Solar Magnetic Activity and Effects on Evolution of Paleoplanetary Atmospheres. *Edward F. Guinan, Ignasi Ribas, & Graham M. Harper.* 594, 561 (2003)

X-Ray Evidence of the Common Envelope Phase of V471 Tauri. *Jeremy J. Drake & Marek J. Sarna.* 594, L55 (2003)

Rotational Periods of Very Young Brown Dwarfs and Very Low-Mass Stars in Chamaeleon I. *V. Joergens, M. Fernández, J. M. Carpenter, & R. Neuhäuser.* 594, 971 (2003)

ROSAT View of *Hipparcos* F Stars. *A. A. Suchkov, V. V. Makarov, & W. Voges.* 595, 1206 (2003)

Evidence for Planet-Induced Chromospheric Activity on HD 179949. *E. Shkolnik, G. A. H. Walker, & D. A. Bohlender.* 597, 1092 (2003)

STARS: AGB AND POST-AGB

Discovery of Multiple Molecular Shells in the Outer Envelope of IRC +10216. *D. Fong, M. Meixner, & R. Y. Shah.* 582, L39 (2003)

Cool Bottom Processes on the Thermally Pulsing Asymptotic Giant Branch and the Isotopic Composition of Circumstellar Dust Grains. *Kenneth M. Nollett, M. Busso, & G. J. Wasserburg.* 582, 1036 (2003)

First Detection of Vibrationally Excited HNC in Space. *Peter Schilke, Claudio Comito, & Sven Thorwirth.* 582, L101 (2003)

Detection of a Second, Strong Submillimeter HCN Laser Line toward Carbon Stars. *Peter Schilke & Karl M. Menten.* 583, 446 (2003)

Neutral Carbon in Post–Asymptotic Giant Branch Stars and Planetary Nebulae. *Tatsuhiko I. Hasegawa & Sun Kwok.* 585, 475 (2003)

Hubble Space Telescope/NICMOS Near-Infrared Imaging of the Proto–Planetary Nebula OH 231.8+4.2. *C. A. Meakin, J. H. Bieging, W. B. Latter, J. L. Hora, & A. G. G. M. Tielens.* 585, 482 (2003)

Ram Pressure Stripping in Planetary Nebulae. *Eva Villaver, Guillermo García-Segura, & Arturo Manchado.* 585, L49 (2003)

A Pulsation Mechanism for GW Virginis Variables. *Arthur N. Cox.* 585, 975 (2003)

Fuel-Supply–limited Stellar Relaxation Oscillations: Application to Multiple Rings around Asymptotic Giant Branch Stars and Planetary Nebulae. *Hugh M. Van Horn, John H. Thomas, Adam Frank, & Eric G. Blackman.* 585, 983 (2003)

Shaping Proto–Planetary and Young Planetary Nebulae with Collimated Fast Winds. *Chin-Fei Lee & Raghvendra Sahai.* 586, 319 (2003)

Detection of HCN Direct *l*-Type Transitions Probing Hot Molecular Gas in the Proto–Planetary Nebula CRL 618. *S. Thorwirth, F. Wyrowski, P. Schilke, K. M. Menten, S. Brünken, H. S. P. Müller, & G. Winnewisser.* 586, 338 (2003)

Physical Conditions in the Proto–Planetary Nebula CRL 618 Derived from Observations of Vibrationally Excited HC_3N. *F. Wyrowski, P. Schilke, S. Thorwirth, K. M. Menten, & G. Winnewisser.* 586, 344 (2003)

An Icy, Bipolar Proto–Planetary Nebula with Knotty Jets: IRAS 22036+5306. *R. Sahai, A. Zijlstra, C. Sánchez Contreras, & M. Morris.* 586, L81 (2003)

Multiple Molecular H_2 Outflows in AFGL 618. *P. Cox, P. J. Huggins, J.-P. Maillard, C. Muthu, R. Bachiller, & T. Forveille.* 586, L87 (2003)

s-Process Nucleosynthesis in Asymptotic Giant Branch Stars: A Test for Stellar Evolution. *Maria Lugaro, Falk Herwig, John C. Lattanzio, Roberto Gallino, & Oscar Straniero.* 586, 1305 (2003)

The Position of Sagittarius A*. II. Accurate Positions and Proper Motions of Stellar SiO Masers near the Galactic Center. *M. J. Reid, K. M. Menten, R. Genzel, T. Ott, R. Schödel, & A. Eckart.* 587, 208 (2003)

Abundances of Post–Iron-Peak Elements in HD 35155: A Symbiotic Star of Spectral Type S. *Andrew D. Vanture, George Wallerstein, Roberto Gallino, & Stefano Masera.* 587, 384 (2003)

Interferometry on Mira in the Mid-Infrared: Cyclic Variability of the Continuum Diameter and the Effect of Spectral Lines on Apparent Size. *J. Weiner, D. D. S. Hale, & C. H. Townes.* 588, 1064 (2003)

R Cassiopeiae: Relative Strengths of SiO Masers at 43 and 86 GHz. *R. B. Phillips, A. H. Straughn, S. S. Doeleman, & C. J. Lonsdale.* 588, L105 (2003)

Spatially Resolved 3 Micron Spectroscopy of IRAS 22272+5435: Formation and Evolution of Aliphatic Hydrocarbon Dust in Proto–Planetary Nebulae.

Miwa Goto, W. Gaessler, Yutaka Hayano, Masanori Iye, Yukiko Kamata, Tomio Kanzawa, Naoto Kobayashi, Yosuke Minowa, D. J. Saint-Jacques, Hideki Takami, Naruhisa Takato, & Hiroshi Terada. 589, 419 (2003)

Detections of OH toward the Extreme Carbon Star IRC +10216. *K. E. Saavik Ford, David A. Neufeld, Paul F. Goldsmith, & Gary J. Melnick.* 589, 430 (2003)

Asymptotic Giant Branch and Supergiant Stellar Diameters in the Mid-Infrared. *J. Weiner, D. D. S. Hale, & C. H. Townes.* 589, 976 (2003)

An Abundance Analysis of the New Carbon-Rich Proto-Planetary Nebula IRAS 06530−0213. *Bruce J. Hrivnak & Bacham E. Reddy.* 590, 1049 (2003)

The Abundance Evolution of Oxygen, Sodium, and Magnesium in Extremely Metal-Poor Intermediate-Mass Stars: Implications for the Self-Pollution Scenario in Globular Clusters. *Pavel A. Denissenkov & Falk Herwig.* 590, L99 (2003)

A Compact X-Ray Source and Possible X-Ray Jets within the Planetary Nebula Menzel 3. *Joel H. Kastner, Bruce Balick, Eric G. Blackman, Adam Frank, Noam Soker, Saeqa D. Vrtilek, & Jingqiang Li.* 591, L37 (2003)

Magnetic Flares on Asymptotic Giant Branch Stars. *Noam Soker & Joel H. Kastner.* 592, 498 (2003)

Broad Hα Wings in Nebulae around Evolved Stars and in Young Planetary Nebulae. *A. Arrieta & S. Torres-Peimbert.* 147, 97 (2003)

Europium Isotope Ratios in *s*-Process Element-enhanced Metal-poor Stars: A New Probe of the ^{151}Sm Branching. *Wako Aoki, Sean G. Ryan, Nobuyuki Iwamoto, Timothy C. Beers, John E. Norris, Hiroyasu Ando, Toshitaka Kajino, Grant J. Mathews, & Masayuki Y. Fujimoto.* 592, L67 (2003)

The Salty Scrambled Egg: Detection of NaCl toward CRL 2688. *J. L. Highberger, K. J. Thomson, P. A. Young, D. Arnett, & L. M. Ziurys.* 593, 393 (2003)

Modeling the Transport of Polarized Radiation Due to Scattering in Spherical Dust Shells. *David A. Joiner & Chun Ming Leung.* 593, 402 (2003)

Isotopic Compositions of Strontium, Zirconium, Molybdenum, and Barium in Single Presolar SiC Grains and Asymptotic Giant Branch Stars. *Maria Lugaro, Andrew M. Davis, Roberto Gallino, Michael J. Pellin, Oscar Straniero, & Franz Käppeler.* 593, 486 (2003)

The *s*-Process in Rotating Asymptotic Giant Branch Stars. *Falk Herwig, Norbert Langer, & Maria Lugaro.* 593, 1056 (2003)

Rotational Rest Frequencies for FeN ($X\ ^2\Delta_i$) and Revised Spectroscopic Constants for FeC ($X\ ^3\Delta_i$). *P. M. Sheridan, L. M. Ziurys, & T. Hirano.* 593, L141 (2003)

Guilt by Association: The 13 Micron Dust Emission Feature and Its Correlation to Other Gas and Dust Features. *G. C. Sloan, Kathleen E. Kraemer, J. H. Goebel, & Stephan D. Price.* 594, 482 (2003)

New Laboratory Spectra of Isolated β-SiC Nanoparticles: Comparison with Spectra Taken by the *Infrared Space Observatory*. *D. Clément, H. Mutschke, R. Klein, & Th. Henning.* 594, 642 (2003)

Space Telescope Imaging Spectrograph Slitless Observations of Small Magellanic Cloud Planetary Nebulae: A Study on Morphology, Emission-Line Intensity, and Evolution. *Letizia Stanghellini, Richard A. Shaw, Bruce Balick, Max Mutchler, J. Chris Blades, & Eva Villaver.* 596, 997 (2003)

The Asymptomatic Giant Branch of NGC 205: The Characteristics of Carbon Stars and M Giants Identified From JHK' Images. *T. J. Davidge.* 597, 289 (2003)

Post–Asymptotic Giant Branch Evolution in the Large Megellanic Cloud: A Study of the Central Stars of Planetary Nebulae. *Eva Villaver, Letizia Stanghellini, & Richard A. Shaw.* 597, 298 (2003)

Really Cool Stars and the Star Formation History at the Galactic Center. *R. D. Blum, Solange V. Ramírez, K. Sellgren, & K. Olsen.* 597, 323 (2003)

A Model for the Formation of High-Density Clumps in Proto–Planetary Nebulae. *Patrick A. Young, J. L. Highberger, David Arnett, & L. M. Ziurys.* 597, L53 (2003)

Detection of MgNC in CRL 618: Tracing Metal Chemistry in Asymptotic Giant Branch Evolution. *J. L. Highberger & L. M. Ziurys.* 597, 1065 (2003)

A Presolar Galactic Merger Spawned the SiC-Grain Mainstream. *Donald D. Clayton.* 598, 313 (2003)

Mid-Infrared Imaging of the Post–Asymptotic Giant Branch Star AC Herculis with the Multiple Mirror Telescope Adaptive Optics System. *Laird M. Close, Beth Biller, William F. Hoffman, Phil M. Hinz, John H. Bieging, Francois Wildi, Michael Lloyd-Hart, Guido Brusa, Don Fisher, Doug Miller, & Roger Angel.* 598, L35 (2003)

On Titanium Carbide Nanoparticles as the Origin of the 21 Micron Emission Feature in Post–Asymptotic Giant Branch Stars. *Aigen Li.* 599, L45 (2003)

X-Ray Emission from the Pre–Planetary Nebula Henize 3-1475. *Raghvendra Sahai, Joel H. Kastner, Adam Frank, Mark Morris, & Eric G. Blackman.* 599, L87 (2003)

Infrared Properties of Solid Titanium Oxides: Exploring Potential Primary Dust Condensates. *T. Posch, F. Kerschbaum, D. Fabian, H. Mutschke, J. Dorschner, A. Tamanai, & T. Henning.* 149, 437 (2003)

STARS: ATMOSPHERES

The Molecular Line Opacity of MgH in Cool Stellar Atmospheres. *P. F. Weck, A. Schweitzer, P. C. Stancil, P. H. Hauschildt, & K. Kirby.* 582, 1059 (2003)

Acoustic Wave Propagation in the Sun: Implications for Wave Field and Time-Distance Helioseismology. *C. H. Tong, M. J. Thompson, M. R. Warner, S. P. Rajaguru, & C. C. Pain.* 582, L121 (2003)

CHIANTI—An Atomic Database for Emission Lines. IV. Proton Rates and Other Improvements. *P. R. Young, G. del Zanna, E. Landi, K. P. Dere, H. E. Mason, & M. Landini.* 144, 135 (2003)

High-Resolution Spectroscopy of the Yellow Hypergiant ρ Cassiopeiae from 1993 through the Outburst of 2000–2001. *A. Lobel, A. K. Dupree, R. P. Stefanik, G. Torres, G. Israelian, N. Morrison, C. de Jager, H. Nieuwenhuijzen, I. Ilyin, & F. Musaev.* 583, 923 (2003)

Calculations of the Far-Wing Line Profiles of Sodium and Potassium in the Atmospheres of Substellar-Mass Objects. *Adam Burrows & Maxim Volobuyev.* 583, 985 (2003)

The Molecular Continuum Opacity of ^{24}MgH in Cool Stellar Atmospheres. *P. F. Weck, A. Schweitzer, P. C. Stancil, P. H. Hauschildt, & K. Kirby.* 584, 459 (2003)

The Discovery of Two Nearby Carbon Dwarfs. *Patrick J. Lowrance, J. Davy Kirkpatrick, I. Neill Reid, Kelle L. Cruz, & James Liebert.* 584, L95 (2003)

Equation of State and Opacities for Hydrogen Atmospheres of Neutron Stars with Strong Magnetic Fields. *Alexander Y. Potekhin & Gilles Chabrier.* 585, 955 (2003)

Transition from L to T Dwarfs of the Color-Magnitude Diagram. *Takashi Tsuji & Tadashi Nakajima.* 585, L151 (2003)

Explaining the Observed Polarization from Brown Dwarfs by Single Dust Scattering. *Sujan Sengupta.* 585, L155 (2003)

Eddington Limit and Radiative Transfer in Highly Inhomogeneous Atmospheres. *Mateusz Ruszkowski & Mitchell C. Begelman.* 586, 384 (2003)

Magnetic Fields in Massive Stars. II. The Buoyant Rise of Magnetic Flux Tubes through the Radiative Interior. *K. B. MacGregor & J. P. Cassinelli.* 586, 480 (2003)

Modeling the Formation of Clouds in Brown Dwarf Atmospheres. *Curtis S. Cooper, David Sudarsky, John A. Milsom, Jonathan I. Lumine, & Adam Burrows.* 586, 1320 (2003)

"Weather" Variability of Close-in Extrasolar Giant Planets. *Kristen Menou, James Y-K. Cho, Sara Seager, & Bradley M. S. Hansen.* 587, L113 (2003)

The Changing Face of the Extrasolar Giant Planet HD 209458b. *Kristen Menou, James Y-K. Cho, Bradley M. S. Hansen, & Sara Seager.* 587, L117 (2003)

A Polarization Survey of SiO Maser Variability in Evolved Stars. *J. Glenn, P. R. Jewell, R. Fourre, & L. Miaja.* 588, 478 (2003)

Detectibility of Mixed Unburnt C+O in Type Ia Supernova Spectra. *E. Baron, Eric J. Lentz, & Peter H. Hauschildt.* 588, L29 (2003)

Transfer of Polarized Radiation in Strongly Magnetized Plasmas and Thermal Emission from Magnetars: Effect of Vacuum Polarization. *Dong Lai & Wynn C. G. Ho.* 588, 962 (2003)

A Tale of Two Stars: The Extreme O7 Iaf+ Supergiant AV 83 and the OC7.5 III((f)) Star AV 69. *D. John Hillier, T. Lanz, S. R. Heap, I. Hubeny, L. J. Smith, C. J. Evans, D. J. Lennon, & J. C. Bouret.* 588, 1039 (2003)

Interferometry on Mira in the Mid-Infrared; Cyclic Variability of the Continuum Diameter and the Effect of Spectral Lines on Apparent Size. *J. Weiner, D. D. S. Hale, & C. H. Townes.* 588, 1064 (2003)

The Stellar "Wind" of MWC 349A. *M. A. Gordon.* 589, 953 (2003)

Theoretical Limb Darkening for Classical Cepheids. II. Corrections for the Geometric Baade-Wesselink Method. *Massimo Marengo, Margarita Karovska, Dimitar D. Sasselov, Costas Papaliolios, John T. Armstrong, & Tyler E. Nordgren.* 589, 968 (2003)

Time-dependent Ionization in Dynamic Solar and Stellar Atmospheres. I. Methods. *W. Rammacher & P. Ulmschneider.* 589, 988 (2003)

A Grid of Non-LTE Line-Blanketed Model Atmospheres of O-Type Stars. *Thierry Lanz & Ivan Hubeny.* 146, 417 (2003)

Non-LTE Model Atmospheres for Late-Type Stars. II. Restricted Non-LTE Calculations for a Solar-like Atmosphere. *Carlos Allende Prieto, Ivan Hubeny, & David L. Lambert.* 591, 1192 (2003)

Optical and X-Ray Properties of Cooling Neutron Stars. *Don A. Lloyd, Lars Hernquist, & Jeremy S. Heyl.* 593, 1024 (2003)

Ultraviolet Spectra of Cataclysmic Variable Accretion Disks with Nonsteady $T(r)$ Laws. *Jerome A. Orosz & Richard A. Wade.* 593, 1032 (2003)

Gravity Indicators in the Near-Infrared Spectra of Brown Dwarfs. *N. I. Gorlova, M. R. Meyer, G. H. Rieke, & J. Liebert.* 593, 1074 (2003)

Helioseismic Signals and Wave Field Helioseismology. *C. H. Tong, M. J. Thompson, M. R. Warner, & C. C. Pain.* 593, 1242 (2003)

Non-LTE Model Atmospheres for Late-Type Stars. I. A Collection of Data for Light Neutral and Singly Ionized Atoms. *Carlos Allende Prieto, David L. Lambert, Ivan Hubeny, & Thierry Lanz.* 147, 363 (2003)

Symmetrical Chemi-Ionization and Chemi-Recombination Processes in Low-Temperature Layers of Helium-rich DB White Dwarf Atmospheres. *A. A. Mihajlov, Lj. M. Ignjatović, M. S. Dimitrijević, & Z. Djurić.* 147, 369 (2003)

Extended Source Diffraction Effects near Gravitational Lens Fold Caustics. *S. A. Zabel & J. B. Peterson.* 594, 456 (2003)

Measuring Stellar Limb Darkening by Gravitational Microlensing. *David Heyrovský.* 594, 464 (2003)

Far-Ultraviolet Emissions of the Sun in Time: Probing Solar Magnetic Activity and Effects on Evolution of Paleoplanetary Atmospheres. *Edward F. Guinan, Ignasi Ribas, & Graham M. Harper.* 594, 561 (2003)

Line Intensities and Molecular Opacities of the FeH $F\,^4\Delta_i$–$X\,^4\Delta_i$ Transition. *M. Dulick, C. W. Bauschlicher, Jr., Adam Burrows, C. M. Sharp, R. S. Ram, & Peter Bernath.* 594, 651 (2003)

A Possible Bifurcation in Atmospheres of Strongly Irradiated Stars and Planets. *Ivan Hubeny, Adam Burrows, & David Sudarsky.* 594, 1011 (2003)

A Reevaluation of the Super–Lithium-rich Star in NGC 6633. *Chris Laws & Guillermo Gonzalez.* 595, 1148 (2003)

Oxygen Abundances in Metal-poor Stars. *Jon P. Fulbright & Jennifer A. Johnson.* 595, 1154 (2003)

Quantitative Spectroscopy of O Stars at Low Metallicity: O Dwarfs in NGC 346. *J.-C. Bouret, T. Lanz, D. J. Hillier, S. R. Heap, I. Hubeny, D. J. Lennon, L. J. Smith, & C. J. Evans.* 595, 1182 (2003)

Atmospheric Models of Red Giants with Massive-Scale Non–Local Thermodynamic Equilibrium. *C. I. Short & P. H. Hauschildt.* 596, 501 (2003)

Constraints from *Infrared Space Observatory* Data on the Velocity Law and Clumpiness of WR 136. *R. Ignace, M. F. Quigley, & J. P. Cassinelli.* 596, 538 (2003)

High-Precision Limb-Darkening Measurement of a K3 Giant Using Microlensing. *Dale L. Fields, M. D. Albrow, J. An, J. P. Beaulieu, J. A. R. Caldwell, D. L. DePoy, M. Dominik, B. S. Gaudi, A. Gould, J. Greenhill, K. Hill, U. G. Jorgensen, S. Kane, R. Martin, J. Menzies, R. W. Pogge, K. R. Pollard, P. D. Sackett, K. C. Sahu, P. Vermaak, R. Watson, A. Williams, J. F. Glicenstein, & P. H. Hauschildt.* 596, 1305 (2003)

Source of Atomic Hydrogen in the Atmosphere of HD 209458b. *Mao-Chang Liang, Christopher D. Parkinson, Anthony Y. T. Lee, Yuk L. Yung, & Sara Seager.* 596, L247 (2003)

The Significance of Density and Attenuation in the Local Helioseismology. *C. H. Tong, M. J. Thompson, M. R. Warner, & C. C. Pain.* 596, L263 (2003)

New Theoretical Line List for the $B'\ ^2\Sigma^+ \leftarrow X\ ^2\Sigma^+$ System of ^{24}MgH. *S. Skory, P. F. Weck, P. C. Stancil, & K. Kirby.* 148, 599 (2003)

Atomic Data for Resonance Absorption Lines. III. Wavelengths Longward of the Lyman Limit for the Elements Hydrogen to Gallium. *Donald C. Morton.* 149, 203 (2003)

Atmospheres and Spectra of Strongly Magnetized Neutron Stars. III. Partially Ionized Hydrogen Models. *Wynn C. G. Ho, Dong Lai, Alexander Y. Potekhin, & Gilles Chabrier.* 599, 1293 (2003)

Ionizing Photon Emission Rates from O- and Early B-Type Stars and Clusters. *Amiel Sternberg, Tadziu L. Hoffmann, & A. W. A. Pauldrach.* 599, 1333 (2003)

STARS: BINARIES: CLOSE

Composite Accretion Disk and White Dwarf Model Analyses of the Quiescence of Dwarf Novae: EM Cygni, CZ Orionis, and WW Ceti. *Lisa Winter & Edward M. Sion.* 582, 352 (2003)

Cataclysmic Variables: An Empirical Angular Momentum Loss Prescription From Open Cluster Data. *N. Andronov, M. Pinsonneault, & A. Sills.* 582, 358 (2003)

Evidence for Optical Flares in Quiescent Soft X-Ray Transients. *C. Zurita, J. Casares, & T. Shahbaz.* 582, 369 (2003)

Type Ia Supernovae and High-Velocity White Dwarfs. *Brad M. S. Hansen.* 582, 915 (2003)

System Parameters of DW Ursae Majoris. *S. Araujo-Betancor, C. Knigge, K. S. Long, D. W. Hoard, P. Szkody, B. Rogers, K. Krisciunas, V. S. Dhillon, R. I. Hynes, J. Patterson, & J. Kemp.* 583, 437 (2003)

Hubble Space Telescope STIS Spectroscopy of the White Dwarfs in the Ultrashort-Period Dwarf Novae VY Aquarii and WX Ceti. *Edward M. Sion, Paula Szkody, Fuhua Cheng, Boris T. Gänsicke, & Steve B. Howell.* 583, 907 (2003)

Dynamical Evidence for a Black Hole in GX 339−4. *R. I. Hynes, D. Steeghs, J. Casares, P. A. Charles, & K. O'Brien.* 583, L95 (2003)

XMM-Newton Spectroscopy of the Accretion-driven Millisecond X-Ray Pulsar XTE J1751−305 in Outburst. *J. M. Miller, R. Wijnands, M. Méndez, E. Kendziorra, A. Tiengo, M. van der Klis, D. Chakrabarty, B. M. Gaensler, & W. H. G. Lewin.* 583, L99 (2003)

Accretion and Outflow in Interacting Binary Systems: *Far Ultraviolet Spectropscopic Explorer* Observations of the Nova-like Cataclysmic Variable UX Ursae Majoris. *Cynthia S. Froning, Knox S. Long, & Christian Knigge.* 584, 433 (2003)

Accurate Mass Ratio and Heating Effects in the Dual-Line Millisecond Binary Pulsar in NGC 6397. *F. R. Ferraro, E. Sabbi, R. Gratton, A. Possenti, N. D'Amico, A. Bragaglia, & F. Camilo.* 584, L13 (2003)

The Probability Distribution of Binary Pulsar Coalescence Rates. I. Double Neutron Star Systems in the Galactic Field. *C. Kim, V. Kalogera, & D. R. Lorimer.* 584, 985 (2003)

XTE J1946+271 = GRO J1944+26: An Enigmatic Be/X-Ray Binary. *Colleen A. Wilson, Mark H. Finger, M. J. Coe, & Ignacio Negueruela.* 584, 996 (2003)

Revised Analysis of the Supersoft X-Ray Phase, Helium Enrichment, and Turnoff Time in the 2000 Outburst of the Recurrent Nova CI Aquilae. *Izumi Hachisu, Mariko Kato, & Bradley E. Schaefer.* 584, 1008 (2003)

Numerical Simulations of Mass Outflows Driven from Accretion Disks by Radiation and Magnetic Forces. *Daniel Proga.* 585, 406 (2003)

The Optical Light Curves of XTE J2123−058. III. The Mass of the Binary Components and the Structure of the Quiescent Accretion Disk. *T. Shahbaz, C. Zurita, J. Casares, G. Dubus, P. A. Charles, R. Mark Wagner, & E. Ryan.* 585, 443 (2003)

Polarized Gravitational Waves from Gamma-Ray Bursts. *Shiho Kobayashi & Peter Mészáros.* 585, L89 (2003)

Helium-Core White Dwarfs in Globular Clusters. *Brad M. S. Hansen, Vassiliki Kalogera, & Frederic A. Rasio.* 586, 1364 (2003)

X-Ray Spectral Properties of Low-Mass X-Ray Binaries in Nearby Galaxies. *Jimmy A. Irwin, Alex E. Athey, & Joel N. Bregman.* 587, 356 (2003)

Very Long Baseline Interferometry Imaging of the RS Canum Venaticorum Binary Star System HR 5110. *R. R. Ransom, N. Bartel, M. F. Bietenholz, M. I. Ratner, D. E. Lebach, I. I. Shapiro, & J.-F. Lestrade.* 587, 390 (2003)

High-Velocity Jets in Recurrent Nova Outbursts. *Mariko Kato & Izumi Hachisu.* 587, L39 (2003)

Doppler Modulation of X-Ray Lines in Cygnus X-3. *Michael J. Stark & Malinda Saia.* 587, L101 (2003)

X-Ray Studies of Two Neutron Stars in 47 Tucanae: Toward Constraints on the Equation of State. *C. O. Heinke, J. E. Grindlay, D. A. Lloyd, & P. D. Edmonds.* 588, 452 (2003)

Blue Straggler Stars: A Direct Comparison of Star Counts and Population Ratios in Six Galactic Globular Clusters. *Francesco R. Ferraro, Alison Sills, Robert T. Rood, Barbara Paltrinieri, & Roberto Buonanno.* 588, 464 (2003)

A New Clue to the Transition Mechanism between Optical High and Low States of the Supersoft X-Ray Source RX J0513.9−6951, Implied from the Recurrent Nova CI Aquilae 2000 Outburst Model. *Izumi Hachisu & Mariko Kato.* 588, 1003 (2003)

The Fe XXII I(11.92 Å)/I(11.77 Å) Density Diagnostic Applied to the *Chandra* High-Energy Transmission Grating Spectrum of EX Hydrae. *Christopher W. Mauche, Duane A. Liedahl, & Kevin B. Fournier.* 588, L101 (2003)

Geodetic Precession and Timing of the Relativistic Binary Pulsars PSR B1534+12 and PSR 1913+16. *Maciej Konacki, Alex Wolszczan, & Ingrid H. Stairs.* 589, 495 (2003)

Constraints on the Binary Evolution from Chirp Mass Measurements. *Tomasz Bulik & Krzysztof Belczy'nski.* 589, L37 (2003)
Gravitational Radiation from Gamma-Ray Burst Progenitors. *Shiho Kobayashi & Peter Mészáros.* 589, 861 (2003)
A New Search Technique for Short Orbital Period Binary Pulsars. *Scott M. Ransom, James M. Cordes, & Stephen S. Eikenberry.* 589, 911 (2003)
RX J0513.9−6951: The First Example of Accretion Wind Evolution, a Key Evolutionary Process to Type Ia Supernovae. *Izumi Hachisu & Mariko Kato.* 590, 445 (2003)
The Complete Z-Diagram of LMC X-2. *A. P. Smale, J. Homan, & E. Kuulkers.* 590, 1035 (2003)
Bowen Flourescence from the Companion Star in X1822−371. *J. Casares, D. Steeghs, R. I. Hynes, P. A. Charles, & K. O'Brien.* 590, 1041 (2003)
A Search for Close Binaries in the ρ Ophiuchi Star-forming Region. *M. Barsony, C. Koresko, & K. Matthews.* 591, 1064 (2003)
Prospects for the Detection of Electromagnetic Counterparts to Gravitational Wave Events. *Julien Sylvestre.* 591, 1152 (2003)
WZ Sagittae: *FUSE* Spectroscopy of the 2001 Outburst. *Knox S. Long, Cynthia S. Froning, Boris Gänsicke, Christian Knigge, Edward M. Sion, & Paula Szkody.* 591, 1172 (2003)
Warping of Accretion Disks with Magnetically Driven Outflows: A Possible Origin for Jet Precession. *Dong Lai.* 591, L119 (2003)
Dynamical Formation of Close Binary Systems in Globular Clusters. *David Pooley, Walter H. G. Lewin, Scott F. Anderson, Holger Baumgardt, Alexei V. Filippenko, Bryan M. Gaensler, Lee Homer, Piet Hut, Victoria M. Kaspi, Junichiro Makino, Bruce Margon, Steve McMillan, Simon Portegies Zwart, Michiel van der Klis, & Frank Verbunt.* 591, L131 (2003)
No Fossil Disk in the T Tauri Multiple System V773 Tauri. *G. Duchêne, A. M. Ghez, C. McCabe, & A. J. Weinberger.* 592, 288 (2003)
The Role of Helium Stars in the Formation of Double Neutron Stars. *N. Ivanova, K. Belczynski, V. Kalogera, F. A. Rasio, & R. E. Taam.* 592, 475 (2003)
The X-Ray Spectral Changes of Scorpius X-1. *C. F. Bradshaw, B. J. Geldzahler, & E. B. Fomalont.* 592, 486 (2003)
Chandra Grating Spectroscopy of the X-Ray Binary 4U 1700−37 in a Flaring State. *Bram Boroson, Saeqa Dil Vrtilek, Timothy Kallman, & Michael Corcoran.* 592, 516 (2003)
Cataclysmic Variable Evolution with Circumbinary Disks. *Ronald E. Taam, Eric L. Sandquist, & Guillaume Dubus.* 592, 1124 (2003)
The Disk-Jet Connection in Microquasars and Active Galactic Nuclei. *Mario Livio, J. E. Pringle, & A. R. King.* 593, 184 (2003)
Multiwavelength Spectrum of the Black Hole XTE J1118+480 in Quiescence. *Jeffrey E. McClintock, Ramesh Narayan, Michael R. Garcia, Jerome A. Orosz, Ronald A. Remillard, & Stephen S. Murray.* 593, 435 (2003)
Correlated Radio:X-Ray Emission in the Hard States of Galactic Microquasars. *M. Choudhury, A. R. Rao, S. V. Vadawale, & A. K. Jain.* 593, 452 (2003)
Phase Coherent Timing of RX J0806.3+1527 with *ROSAT* and *Chandra*. *Tod E. Strohmayer.* 593, L39 (2003)
X-Ray Dip Monitoring of XB 1916−053. *T. Narita, J. E. Grindlay, P. F. Bloser, & Y. Chou.* 593, 1007 (2003)
Ultraviolet Spectra of Cataclysmic Variable Accretion Disks with Nonsteady $T(r)$ Laws. *Jerome A. Orosz & Richard A. Wade.* 593, 1032 (2003)
Statistical Analysis of 5 Year Continuous Radio Flare Data from β Persei, V711 Tauri, δ Librae, and UX Arietis. *Mercedes T. Richards, Elizabeth B. Waltman, Frank D. Ghigo, & Donald St. P. Richards.* 147, 337 (2003)
XMM-Newton Observation of the 5.25 Millisecond Transient Millisecond Pulsar XTE J1807−294 in Outburst. *S. Campana, M. Ravasio, G. L. Israel, V. Mangano, & T. Belloni.* 594, L39 (2003)
The Puzzling Dynamical Status of the Core of the Globular Cluster NGC 6752. *F. R. Ferraro, A. Possenti, E. Sabbi, P. Lagani, R. T. Rood, N. D'Amico, & L. Origlia.* 595, 179 (2003)
Self-Consistency of Relativistic Observables with General Relativity in the White Dwarf–Neutron Star Binary PSR J1141−6545. *M. Bailes, S. M. Ord, H. S. Knight, & A. W. Hotan.* 595, L49 (2003)
Low-Mass X-Ray Binaries and Globular Clusters in Early-Type Galaxies. *Craig L. Sarazin, Arunav Kundu, Jimmy A. Irwin, Gregory R. Sivakoff, Elizabeth L. Blanton, & Scott W. Randall.* 595, 743 (2003)
Evolution of Rotating Accreting White Dwarfs and the Diversity of Type Ia Supernovae. *Tatsuhiro Uenishi, Ken'ichi Nomoto, & Izumi Hachisu.* 595, 1094 (2003)
Near-Infrared, Adaptive Optics Observations of the T Tauri Multiple-Star System. *Elise Furlan, William J. Forrest, Dan M. Watson, Keven I. Uchida, Bernhard R. Brandl, Luke D. Keller, & Terry L. Herter.* 596, L87 (2003)
Chandra Observations of the Faintest Low-Mass X-Ray Binaries. *Colleen A. Wilson, Sandeep K. Patel, Chryssa Kouveliotou, Peter G. Jonker, Michiel van der Klis, Walter H. G. Lewin, Tomaso Belloni, & Mariano Méndez.* 596, 1220 (2003)
The Helium White Dwarf Orbiting the Millisecond Pulsar in the Halo of the Globular Cluster NGC 6752. *Francesco R. Ferraro, Andrea Possenti, Elena Sabbi, & Nichi D'Amico.* 596, L211 (2003)
Measuring White Dwarf Accretion Rates via Their Effective Temperatures. *Dean Townsley & Lars Bildsten.* 596, L227 (2003)
The Evolution of the High-Energy Tail in the Quiescent Spectrum of the Soft X-Ray Transient Aquila X-1. *S. Campana & L. Stella.* 597, 474 (2003)
Accretion-Induced Collimated Fast Wind Model for η Carinae. *Noam Soker.* 597, 513 (2003)
The Galactic Population of Low- and Intermediate-Mass X-Ray Binaries. *Eric Pfahl, Saul Rappaport, & Philipp Podsiadlowski.* 597, 1036 (2003)
Coronal Element Abundances of the Post–Common-Envelope Binary V471 Tauri with *ASCA*. *Martin Still & Gaitee Hussain.* 597, 1059 (2003)
On the Eccentricity Distribution of Coalescing Black Hole Binaries Driven by the Kozai Mechanism in Globular Clusters. *Linqing Wen.* 598, 419 (2003)
Theoretical Considerations on the Properties of Accreting Millisecond Pulsars. *Lorne A. Nelson & Saul Rappaport.* 598, 431 (2003)
Unveiling the Nature of the 321 Second Modulation in RX J0806.3+1527: Near-Simultaneous *Chandra* and Very Large Telescope Observations. *G. L. Israel, S. Covino, L. Stella, C. W. Mauche, S. Campana, G. Marconi, W. Hummel, S. Mereghetti, U. Munari, & I. Negueruela.* 598, 492 (2003)
A Limit Cycle Model for Long-Term Optical Variations of V Sagittae: The Second Example of Accretion Wind Evolution. *Izumi Hachisu & Mariko Kato.* 598, 527 (2003)
White Dwarf Donors in Ultracompact Binaries: The Stellar Structure of Finite-Entropy Objects. *Christopher J. Deloye & Lars Bildsten.* 598, 1217 (2003)
V445 Puppis: Helium Nova on a Massive White Dwarf. *Mariko Kato & Izumi Hachisu.* 598, L107 (2003)
Chandra Observations of Low-Mass X-Ray Binaries and Diffuse Gas in the Early-Type Galaxies NGC 4365 and NGC 4382 (M85). *Gregory R. Sivakoff, Craig L. Sarazin, & Jimmy A. Irwin.* 599, 218 (2003)
X-Ray Spectroscopy of the Low-Mass X-Ray Binaries 2S 0918−549 and 4U 1543−624: Evidence for Neon-Rich Degenerate Donors. *Adrienne M. Juett & Deepto Chakrabarty.* 599, 498 (2003)
Magnetic Braking Revisited. *N. Ivanova & Ronald E. Taam.* 599, 516 (2003)
GRO J0422+32: The Lowest Mass Black Hole? *Dawn M. Gelino & Thomas E. Harrison.* 599, 1254 (2003)
PSR J1909−3744: A Binary Millisecond Pulsar with a Very Small Duty Cycle. *B. A. Jacoby, M. Bailes, M. H. van Kerkwijk, S. Ord, A. Hotan, S. R. Kulkarni, & S. B. Anderson.* 599, L99 (2003)

STARS: BINARIES: ECLIPSING

System Parameters of DW Ursae Majoris. *S. Araujo-Betancor, C. Knigge, K. S. Long, D. W. Hoard, P. Szkody, B. Rogers, K. Krisciunas, V. S. Dhillon, R. I. Hynes, J. Patterson, & J. Kemp.* 583, 437 (2003)
CH Cygni. II. Optical Flickering from an Unstable Disk. *J. L. Sokoloski & S. J. Kenyon.* 584, 1027 (2003)
Near-Field Microlensing and Its Effects on Stellar Transit Observations by *Kepler*. *Kailash C. Sahu & Ronald L. Gilliland.* 584, 1042 (2003)
Infrared Observations during the Secondary Eclipse of HD 209458b. I. 3.6 Micron Occultation Spectroscopy Using the Very Large Telescope. *L. Jeremy Richardson, Drake Deming, Guenter Wiedemann, Cedric Goukenleuque, David Steyert, Joseph Harrington, & Larry W. Esposito.* 584, 1053 (2003)
A Unique Solution of Planet and Star Parameters from an Extrasolar Planet Transit Light Curve. *S. Seager & G. Mallén-Ornelas.* 585, 1038 (2003)
Fundamental Properties and Distances of Large Magellanic Cloud Eclipsing Binaries. IV. HV 5936. *E. L. Fitzpatrick, I. Ribas, E. F. Guinan, F. P. Maloney, & A. Claret.* 587, 685 (2003)
X-Ray Studies of Two Neutron Stars in 47 Tucanae: Toward Constraints on the Equation of State. *C. O. Heinke, J. E. Grindlay, D. A. Lloyd, & P. D. Edmonds.* 588, 452 (2003)
On the Selection of Photometric Planetary Transits. *A. J. Drake.* 589, 1020 (2003)

Discrete X-Ray Signatures of a Photoionized Plasma above the Accretion Disk of the Neutron Star EXO 0748−676. *M. A. Jimenez-Garate, N. S. Schulz, & H. L. Marshall.* 590, 432 (2003)

Discovery of Highly Dynamic Matter Enhancements along the Polar Axis and Equatorial Plane in the Luminous Blue Variable Binary HD 5980. *A. Villar-Sbaffi, Anthony F. J. Moffat, & N. St-Louis.* 590, 483 (2003)

Finding White Dwarfs with Transit Searches. *Alison J. Farmer & Eric Agol.* 592, 1151 (2003)

Expected Detection and False Alarm Rates for Transiting Jovian Planets. *Timothy M. Brown.* 593, L125 (2003)

The Origin of Soft X-Rays in DQ Herculis. *K. Mukai, M. Still, & F. A. Ringwald.* 594, 428 (2003)

Microlensing of Large Sources. *Eric Agol.* 594, 449 (2003)

A *Chandra* Observation of the Neutron Star X-Ray Transient and Eclipsing Binary MXB 1659−29 in Quiescence. *Rudy Wijnands, Mike Nowak, Jon M. Miller, Jeroen Homan, Stefanie Wachter, & Walter H. H. Lewin.* 594, 952 (2003)

The Coronae of AR Lacertae. *David P. Huenemoerder, Claude R. Canizares, Jeremy J. Drake, & Jorge Sanz-Forcada.* 595, 1131 (2003)

An Unusual Eclipse of a Pre–Main-Sequence Star in IC 348. *William Herbst, Roger E. Cohen, & Eric C. Williams.* 596, L243 (2003)

X-Ray Variability of the Magnetic Cataclysmic Variable V1432 Aquilae and the Seyfert Galaxy NGC 6814. *K. Mukai, C. Hellier, G. Madejski, J. Patterson, & D. R. Skillman.* 597, 479 (2003)

High-Resolution Spectroscopic Follow-up of OGLE Planetary Transit Candidates in the Galactic Bulge: Two Possible Jupiter-Mass Planets and Two Blends. *Maciej Konacki, Guillermo Torres, Dimitar D. Sasselov, & Saurabh Jha.* 597, 1076 (2003)

The Distances to Open Clusters from Main-Sequence Fitting. I. New Models and a Comparison with the Properties of the Hyades Eclipsing Binary VB 22. *Marc H. Pinsonneault, Donald M. Terndrup, Robert B. Hanson, & John R. Stauffer.* 598, 588 (2003)

A Far-Ultraviolet Survey of 47 Tucanae. II. The Long-Period Cataclysmic Variable AKO 9. *Christian Knigge, David R. Zurek, Michael M. Shara, Knox S. Long, & Ronald L. Gilliland.* 599, 1320 (2003)

STARS: BINARIES: GENERAL

A Fast Algorithm for Solving the Poisson Equation on a Nested Grid. *Tomoaki Matsumoto & Tomoyuki Hanawa.* 583, 296 (2003)

A Spectroscopic Survey of Subarcsecond Binaries in the Taurus-Auriga Dark Cloud with the *Hubble Space Telescope*. *Patrick Hartigan & Scott J. Kenyon.* 583, 334 (2003)

Discovery of a Tight Brown Dwarf Companion to the Low-Mass Star LHS 2397a. *Melanie Freed, Laird M. Close, & Nick Siegler.* 584, 453 (2003)

Astrophysics of Young Star Binaries. *L. Prato, T. P. Greene, & M. Simon.* 584, 853 (2003)

Protoplanetary Disk Mass Distribution in Young Binaries. *Eric L. N. Jensen & Rachel L. Akeson.* 584, 875 (2003)

Speckle Observations of Composite Spectrum Stars. II. Differential Photometry of the Binary Components. *J. L. Prieur, J. M. Carquillat, N. Ginestet, L. Koechlin, A. Lannes, E. Anterrieu, S. Roques, E. Aristidi, & M. Scardia.* 144, 263 (2003)

Angular Radii of Stars via Microlensing. *B. Scott Gaudi, David S. Graff, & Cheongho Han.* 586, 451 (2003)

A Comprehensive Study of the L1551 IRS 5 Binary System. *Mayra Osorio, Paolo D'Alessio, James Muzerolle, Nuria Calvet, & Lee Hartmann.* 586, 1148 (2003)

Cool Companions to White Dwarfs from the Two Micron All-Sky Survey Second Incremental Data Release. *Stefanie Wachter, D. W. Hoard, Kathryn H. Hansen, Rebecca E. Wilcox, Hilda M. Taylor, & Steven L. Finkelstein.* 586, 1356 (2003)

Detection of Nine M8.0-L0.5 Binaries: The Very Low-Mass Binary Population and Its Implications for Brown Dwarf and Very Low Mass Star Formation. *Laird M. Close, Nick Siegler, Melanie Freed, & Beth Biller.* 587, 407 (2003)

Ejection of a Low-Mass Star in a Young Stellar System in Taurus. *Laurent Loinard, Luis F. Rodríguez, & Monica I. Rodríguez.* 587, L47 (2003)

Theoretical Spectra and Atmospheres of Extrasolar Giant Planets. *David Sudarsky, Adam Burrows, & Ivan Hubeny.* 588, 1121 (2003)

Hubble Space Telescope WFPC2 Imaging of the Disk and Jet of HV Tauri C. *Karl R. Stapelfeldt, François Ménard, Alan M. Watson, John E. Krist, Catherine Dougados, Deborah L. Padgett, & Wolfgang Brandner.* 589, 410 (2003)

Near-Infrared Imaging of the Circumstellar Disk around Herbig Ae Star HD 150193A. *Misato Fukagawa, Motohide Tamura, Yoichi Itoh, Saeko S. Hayashi, & Yumiko Oasa.* 590, L49 (2003)

The Nature of Overluminous F Stars Observed in a Radial-Velocity Survey. *R. F. Griffin & A. A. Suchkov.* 147, 103 (2003)

Sagittarius A* Companion S0-2: A Probe of Very High Mass Star Formation. *Andrew Gould & Alice C. Quillen.* 592, 935 (2003)

Spectral and Temporal Behavior of the Black Hole Candidate XTE J1118+480 as Observed with *BeppoSAX*. *F. Frontera, L. Amati, A. A. Zdziarski, T. Belloni, S. Del Sordo, N. Masetti, M. Orlandini, & E. Palazzi.* 592, 1110 (2003)

Binary and Multiple Star Formation in Magnetic Clouds: Bar Growth and Fragmentation. *Fumitaka Nakamura & Zhi-Yun Li.* 594, 363 (2003)

X-Ray Evidence of the Common Envelope Phase of V471 Tauri. *Jeremy J. Drake & Marek J. Sarna.* 594, L55 (2003)

The Arecibo 430 MHz Intermediate Galactic Latitude Survey: Discovery of Nine Radio Pulsars. *J. Navarro, S. B. Anderson, & P. C. Freire.* 594, 943 (2003)

A Possible Bifurcation in Atmospheres of Strongly Irradiated Stars and Planets. *Ivan Hubeny, Adam Burrows, & David Sudarsky.* 594, 1011 (2003)

Fragmentation of a Molecular Cloud Core versus Fragmentation of the Massive Protoplanetary Disk in the Main Accretion Phase. *Tomoaki Matsumoto & Tomoyuki Hanawa.* 595, 913 (2003)

Wave Effects in the Gravitational Lensing of Gravitational Waves from Chirping Binaries. *Ryuichi Takahashi & Takashi Nakamura.* 595, 1039 (2003)

ROSAT View of *Hipparcos* F Stars. *A. A. Suchkov, V. V. Makarov, & W. Voges.* 595, 1206 (2003)

X-Ray Bursts from the Accreting Millisecond Pulsar XTE J1814−338. *Tod E. Strohmayer, Craig B. Markwardt, Jean H. Swank, & Jean in 't Zand.* 596, L67 (2003)

An Extensive Census of *Hubble Space Telescope* Counterparts to *Chandra* X-Ray Sources in the Globular Cluster 47 Tucanae. I. Astrometry and Photometry. *Peter D. Edmonds, Ronald L. Gilliland, Craig O. Heinke, & Jonathan E. Grindlay.* 596, 1177 (2003)

An Extensive Census of *Hubble Space Telescope* Counterparts to *Chandra* X-Ray Sources in the Globular Cluster 47 Tucanae. II. Time Series and Analysis. *Peter D. Edmonds, Ronald L. Gilliland, Craig O. Heinke, & Jonathan E. Grindlay.* 596, 1197 (2003)

Evolution of Hard X-Ray Spectra along the Branches in Circinus X-1. *G. Q. Ding, J. L. Qu, & T. P. Li.* 596, L219 (2003)

The Decihertz Laser Interferometer Can Determine the Position of the Coalescing Binary Neutron Stars within an Arcminute a Week before the Final Merging Event to the Black Hole. *Ryuichi Takahashi & Takashi Nakamura.* 596, L231 (2003)

Probing with the Inflow/Outflow and Accretion Disk of Cygnus X-1 in High State with the *Chandra* High Energy Transmission Grating. *Y. X. Feng, A. F. Tennant, & S. N. Zhang.* 597, 1017 (2003)

Unveiling the Nature of the 321 Second Modulation in RX J0806.3+1527: Near-Simultaneous *Chandra* and Very Large Telescope Observations. *G. L. Israel, S. Covino, L. Stella, C. W. Mauche, S. Campana, G. Marconi, W. Hummel, S. Mereghetti, U. Munari, & I. Negueruela.* 598, 492 (2003)

The Effect of Multiple Scattering on the Polarization from Binary Star Envelopes. I. Self- and Externally Illuminated Disks. *Jennifer L. Hoffman, Barbara A. Whitney, & Kenneth H. Nordsieck.* 598, 572 (2003)

Mid-Infrared Imaging of the Post–Asymptotic Giant Branch Star AC Herculis with the Multiple Mirror Telescope Adaptive Optics System. *Laird M. Close, Beth Biller, William F. Hoffman, Phil M. Hinz, John H. Bieging, Francois Wildi, Michael Lloyd-Hart, Guido Brusa, Don Fisher, Doug Miller, & Roger Angel.* 598, L35 (2003)

A Westerbork Synthesis Radio Telescope 1400 and 350 MHz Continuum Survey of the Cygnus OB2 Association, in Search of Hot Massive Stars. *Diah Y. A. Setia Gunawan, A. Ger de Bruyn, Karel A. van der Hucht, & Peredur M. Williams.* 149, 123 (2003)

A Cluster of Compact Radio Sources in NGC 2024 (Orion B). *Luis F. Rodríguez, Yolanda Gómez, & Bo Reipurth.* 598, 1100 (2003)

An Adaptive Optics Survey of M6.0–M7.5 Stars: Discovery of Three Very Low Mass Binary Systems Including Two Probably Hyades Members. *Nick Siegler, Laird M. Close, Eric E. Mamajek, & Melanie Freed.* 598, 1265 (2003)

High-Resolution Images of Orbital Motion in the Trapezium Cluster: First Scientific Results from the Multiple Mirror Telescope Deformable

Secondary Mirror Adaptive Optics System. *Laird M. Close, Francois Wildi, Michael Lloyd-Hart, Guido Brusa, Don Fisher, Doug Miller, Armando Riccardi, Piero Salinari, Donald McCarthy, Roger Angel, Rich Allen, H. M. Martin, Richard G. Sosa, Manny Montoya, Matt Rademacher, Mario Rascon, Dylan Curley, Nick Siegler, & Wolfgang J. Duschl.* 599, 537 (2003)

STARS: BINARIES: SPECTROSCOPIC

Wind Accretion and State Transitions in Cygnus X-1. *D. R. Gies, C. T. Bolton, J. R. Thomson, W. Huang, M. V. McSwain, R. L. Riddle, Z. Wang, P. J. Wiita, D. W. Wingert, B. Csak, & L. L. Kiss.* 583, 424 (2003)

On the Mass-Ratio Distribution of Spectroscopic Binaries. *Dorit Goldberg, Tsevi Mazeh, & David W. Latham.* 591, 397 (2003)

The Massive Triple Star System HD 16429 A. *M. V. McSwain.* 595, 1124 (2003)

The Unusual 2001 Periastron Passage in the "Clockwork" Colliding-Wind Binary WR 140. *S. V. Marchenko, A. F. J. Moffat, D. Ballereau, J. Chauville, J. Zorec, G. M. Hill, K. Annuk, L. J. Corral, H. Demers, P. R. J. Eenens, K. P. Panov, W. Seggewiss, J. R. Thomson, & A. Villar-Sbaffi.* 596, 1295 (2003)

The Mass Ratio Distribution in Main-Sequence Spectroscopic Binaries Measured by Infrared Spectroscopy. *T. Mazeh, M. Simon, L. Prato, B. Markus, & S. Zucker.* 599, 1344 (2003)

STARS: BINARIES: SYMBIOTIC

Emission Lines of Cl II in the Optical Spectra of Gaseous Nebulae. *F. P. Keenan, L. H. Aller, K. M. Exter, S. Hyung, & D. L. Pollacco.* 584, 385 (2003)

CH Cygni. I. Observational Evidence for a Disk-Jet Connection. *J. L. Sokoloski & S. J. Kenyon.* 584, 1021 (2003)

CH Cygni. II. Optical Flickering from an Unstable Disk. *J. L. Sokoloski & S. J. Kenyon.* 584, 1027 (2003)

Broad Hα Wings in Nebulae around Evolved Stars and in Young Planetary Nebulae. *A. Arrieta & S. Torres-Peimbert.* 147, 97 (2003)

Raman-scattered He II λ6545 Line in the Symbiotic Star V1016 Cygni. *Hee-Won Lee, Young-Jong Sohn, Young Woon Kang, & Ho-Il Kim.* 598, 553 (2003)

STARS: BINARIES: VISUAL

A Spectroscopic Survey of Subarcsecond Binaries in the Taurus-Auriga Dark Cloud with the *Hubble Space Telescope*. *Patrick Hartigan & Scott J. Kenyon.* 583, 334 (2003)

Near-Infrared Adaptive Optics Imaging of the Embedded Cluster NGC 2024. *Tracy L. Beck, M. Simon, & L. M. Close.* 583, 358 (2003)

Speckle Observations of Composite Spectrum Stars. II. Differential Photometry of the Binary Components. *J. L. Prieur, J. M. Carquillat, N. Ginestet, L. Koechlin, A. Lannes, E. Anterrieu, S. Roques, E. Aristidi, & M. Scardia.* 144, 263 (2003)

ι Cassiopeiae: Orbit, Masses, and Photometry from Adaptive Optics Imaging in the *I* and *H* Bands. *Jack Drummond, Scott Milster, Patrick Ryan, & Lewis C. Roberts, Jr.* 585, 1007 (2003)

Binarity in Brown Dwarfs: T Dwarf Binaries Discovered with the *Hubble Space Telescope* Wide Field Planetary Camera 2. *Adam J. Burgasser, J. Davy Kirkpatrick, I. Neill Reid, Michael E. Brown, Cherie L. Miskey, & John E. Gizis.* 586, 512 (2003)

The First Detection of Spatially Resolved Mid-Infrared Scattered Light from a Protoplanetary Disk. *C. McCabe, G. Duchêne, & A. M. Ghez.* 588, L113 (2003)

Separating the X-Ray Emissions of UV Ceti A and B with *Chandra*. *Marc Audard, Manuel Güdel, & Stephen L. Skinner.* 589, 983 (2003)

A *Hubble Space Telescope* Wide Field Planetary Camera 2 Survey for Brown Dwarf Binaries in the α Persei and the Pleiades Open Clusters. *Eduardo L. Martín, David Barrado y Navascués, Isabelle Baraffe, Hervé Bouy, & Scott Dahm.* 594, 525 (2003)

Unveiling the Nature of the 321 Second Modulation in RX J0806.3+1527: Near-Simultaneous *Chandra* and Very Large Telescope Observations. *G. L. Israel, S. Covino, L. Stella, C. W. Mauche, S. Campana, G. Marconi, W. Hummel, S. Mereghetti, U. Munari, & I. Negueruela.* 598, 492 (2003)

The ϵ Chamaeleontis Young Stellar Group and the Characterization of Sparse Stellar Clusters. *Eric D. Feigelson, Warrick A. Lawson, & Gordon P. Garmire.* 599, 1207 (2003)

STARS: BLUE STRAGGLERS

Blue Straggler Stars: A Direct Comparison of Star Counts and Population Ratios in Six Galactic Globular Clusters. *Francesco R. Ferraro, Alison Sills, Robert T. Rood, Barbara Paltrinieri, & Roberto Buonanno.* 588, 464 (2003)

A *Chandra* X-Ray Study of the Globular Cluster M80. *C. O. Heinke, J. E. Grindlay, P. M. Lugger, H. N. Cohn, P. D. Edmonds, D. A. Lloyd, & S. S. Murray.* 598, 516 (2003)

A Far-Ultraviolet Survey of 47 Tucanae. II. The Long-Period Cataclysmic Variable AKO 9. *Christian Knigge, David R. Zurek, Michael M. Shara, Knox S. Long, & Ronald L. Gilliland.* 599, 1320 (2003)

STARS: CARBON

Detection of a Second, Strong Submillimeter HCN Laser Line toward Carbon Stars. *Peter Schilke & Karl M. Menten.* 583, 446 (2003)

The Discovery of Two Nearby Carbon Dwarfs. *Patrick J. Lowrance, J. Davy Kirkpatrick, I. Neill Reid, Kelle L. Cruz, & James Liebert.* 584, L95 (2003)

New Laboratory Spectra of Isolated β-SiC Nanoparticles: Comparison with Spectra Taken by the *Infrared Space Observatory*. *D. Clément, H. Mutschke, R. Klein, & Th. Henning.* 594, 642 (2003)

A C-Band Spectral Scan of IRC +10°216. *Esteban Araya, Peter Hofner, Paul Goldsmith, Slava Slysh, & Shuro Takano.* 596, 556 (2003)

STARS: CEPHEIDS

Theoretical Limb Darkening for Classical Cepheids. II. Corrections for the Geometric Baade-Wesselink Method. *Massimo Marengo, Margarita Karovska, Dimitar D. Sasselov, Costas Papaliolios, John T. Armstrong, & Tyler E. Nordgren.* 589, 968 (2003)

The Cepheid Distance to NGC 5236 (M83) with the ESO Very Large Telescope. *Frank Thim, G. A. Tammann, A. Saha, A. Dolphin, Allan Sandage, E. Tolstoy, & Lukas Labhardt.* 590, 256 (2003)

Classical Cepheid Pulsation Models. IX. New Input Physics. *Silvia Petroni, Giuseppe Bono, Marcella Marconi, & Robert F. Stellingwerf.* 599, 522 (2003)

STARS: CHEMICALLY PECULIAR

Abundance Analysis of HE 2146−1247, a Star with Extremely Enhanced Neutron Capture Elements. *Judith G. Cohen, Norbert Christlieb, Y.-Z. Qian, & G. J. Wasserburg.* 588, 1082 (2003)

The First Substellar Subdwarf? Discovery of a Metal-poor L Dwarf with Halo Kinematics. *Adam J. Burgasser, J. Davy Kirkpatrick, Adam Burrows, James Liebert, I. Neill Reid, John E. Gizis, Mark R. McGovern, L. Prato, & Ian S. McLean.* 592, 1186 (2003)

A Reevaluation of the Super–Lithium-rich Star in NGC 6633. *Chris Laws & Guillermo Gonzalez.* 595, 1148 (2003)

Accretion of Dust Grains as a Possible Origin of Metal-poor Stars with Low α/Fe Ratios. *Toshikazu Shigeyama & Takuji Tsujimoto.* 598, L47 (2003)

STARS: CHROMOSPHERES

A Connection between the Morphology of the X-Ray Emission and Rotation for Solar-Type Stars in Open Clusters. *Sydney A. Barnes.* 586, L145 (2003)

Transition Region Emission from Very Low Mass Stars. *Suzanne L. Hawley & Christopher M. Johns-Krull.* 588, L109 (2003)

Far-Ultraviolet Emissions of the Sun in Time: Probing Solar Magnetic Activity and Effects on Evolution of Paleoplanetary Atmospheres. *Edward F. Guinan, Ignasi Ribas, & Graham M. Harper.* 594, 561 (2003)

Acoustic Heating Models for the Basal Flux Star τ Ceti Including Time-dependent Ionization: Results for Ca II and Mg II Emission. *W. Rammacher & M. Cuntz.* 594, L51 (2003)

An Extensive Census of *Hubble Space Telescope* Counterparts to *Chandra* X-Ray Sources in the Globular Cluster 47 Tucanae. I. Astrometry and Photometry. *Peter D. Edmonds, Ronald L. Gilliland, Craig O. Heinke, & Jonathan E. Grindlay.* 596, 1177 (2003)

Multiwavelength Observations of Flares on AD Leonis. *Suzanne L. Hawley, Joel C. Allred, Christopher M. Johns-Krull, George H. Fisher, William P. Abbet, Ilya Alekseev, Stavros I. Avgoloupis, Susana E. Deustua, Alastair Gunn, John H. Seiradakis, Martin M. Sirk, & Jeff A. Valenti.* 597, 535 (2003)

Evidence for Planet-Induced Chromospheric Activity on HD 179949. *E. Shkolnik, G. A. H. Walker, & D. A. Bohlender.* 597, 1092 (2003)

STARS: CIRCUMSTELLAR MATTER

The Low-Velocity Wind from the Circumstellar Matter around the B9 V Star σ Herculis. *C. H. Chen & M. Jura.* 582, 443 (2003)

Mid-Infrared Imaging Polarimetry of NGC 7027. *C. A. Jurgenson, R. E. Stencel, D. S. Theil, D. I. Klebe, & T. Ueta.* 582, L35 (2003)

Discovery of Multiple Molecular Shells in the Outer Envelope of IRC +10216. *D. Fong, M. Meixner, & R. Y. Shah.* 582, L39 (2003)

Turbulence in Accretion Disks: Vorticity Generation and Angular Momentum Transport via the Global Baroclinic Instability. *H. H. Klahr & P. Bodenheimer.* 582, 869 (2003)

A Flared, Orbiting, Dusty Disk around HD 233517. *M. Jura.* 582, 1032 (2003)

Submillimeter Observations of an Asymmetric Dust Disk around Fomalhaut. *W. S. Holland, J. S. Greaves, W. R. F. Dent, M. C. Wyatt, B. Zuckerman, R. A. Webb, C. McCarthy, I. M. Coulson, E. I. Robson, & W. K. Gear.* 582, 1141 (2003)

Detection of a Second, Strong Submillimeter HCN Laser Line toward Carbon Stars. *Peter Schilke & Karl M. Menten.* 583, 446 (2003)

Detection of Gaps in Circumstellar Disks. *J. Steinacker & Th. Henning.* 583, L35 (2003)

The Inner Rings of β Pictoris. *Z. Wahhaj, D. W. Koerner, M. E. Ressler, M. W. Werner, D. E. Backman, & A. I. Sargent.* 584, L27 (2003)

The First Spatially Resolved Mid-Infrared Spectroscopy of β Pictoris. *A. J. Weinberger, E. E. Becklin, & B. Zuckerman.* 584, L33 (2003)

Structure of the Mid-Infrared–emitting Disk around WL 16. *Michael E. Ressler & Mary Barsony.* 584, 832 (2003)

Protoplanetary Disk Mass Distribution in Young Binaries. *Eric L. N. Jensen & Rachel L. Akeson.* 584, 875 (2003)

A Tidally Disrupted Asteroid around the White Dwarf G29-38. *M. Jura.* 584, L91 (2003)

A Survey for Circumstellar Disks around Young Substellar Objects. *Michael C. Liu, Joan Najita, & Alan T. Tokunaga.* 585, 372 (2003)

Neutral Carbon in Post–Asymptotic Giant Branch Stars and Planetary Nebulae. *Tatsuhiko I. Hasegawa & Sun Kwok.* 585, 475 (2003)

Hubble Space Telescope/NICMOS Near-Infrared Imaging of the Proto–Planetary Nebula OH 231.8+4.2. *C. A. Meakin, J. H. Bieging, W. B. Latter, J. L. Hora, & A. G. G. M. Tielens.* 585, 482 (2003)

Ground-based Near-Infrared Imaging of the HD 141569 Circumstellar Disk. *A. Boccaletti, J.-C. Augereau, F. Marchis, & J. Hahn.* 585, 494 (2003)

Detection of Crystalline Silicates around the T Tauri Star Hen 3-600A. *Mitsuhiko Honda, Hirokazu Kataza, Yoshiko K. Okamoto, Takashi Miyata, Takuya Yamashita, Shigeyuki Sako, Shinya Takubo, & Takashi Onaka.* 585, L59 (2003)

Spatial Study with the Very Large Telescope of a New Resolved Edge-on Circumstellar Dust Disk Discovered at the Periphery of the ρ Ophiuchi Dark Cloud. *N. Grosso, J. Alves, K. Wood, R. Neuhäuser, T. Montmerle, & J. E. Bjorkman.* 586, 296 (2003)

Physical Conditions in the Proto–Planetary Nebula CRL 618 Derived from Observations of Vibrationally Excited HC_3N. *F. Wyrowski, P. Schilke, S. Thorwirth, K. M. Menten, & G. Winnewisser.* 586, 344 (2003)

Latitude-dependent Effects in the Stellar Wind of η Carinae. *Nathan Smith, Kris Davidson, Theodore R. Gull, Kazunori Ishibashi, & D. John Hillier.* 586, 432 (2003)

High-Resolution *Chandra* Spectroscopy of τ Scorpii: A Narrow-Line X-Ray Spectrum from a Hot Star. *David H. Cohen, Geneviève E. de Messières, Joseph J. MacFarlane, Nathan A. Miller, Joseph P. Cassinelli, Stanley P. Owocki, & Duane A. Liedahl.* 586, 495 (2003)

An Icy, Bipolar Proto–Planetary Nebula with Knotty Jets: IRAS 22036+5306. *R. Sahai, A. Zijlstra, C. Sánchez Contreras, & M. Morris.* 586, L81 (2003)

Multiple Molecular H_2 Outflows in AFGL 618. *P. Cox, P. J. Huggins, J.-P. Maillard, C. Muthu, R. Bachiller, & T. Forveille.* 586, L87 (2003)

Mid-Infrared Imaging of the First-Ascent Giant HD 233517. *R. Scott Fisher, C. M. Telesco, Robert K. Piña, & Roger F. Knacke.* 586, L91 (2003)

Detections of Rovibrational H_2 Emission from the Disks of T Tauri Stars. *Jeffrey S. Bary, David A. Weintraub, & Joel H. Kastner.* 586, 1136 (2003)

A Comprehensive Study of the L1551 IRS 5 Binary System. *Mayra Osorio, Paolo D'Alessio, James Muzerolle, Nuria Calvet, & Lee Hartmann.* 586, 1148 (2003)

2-DUST: A Dust Radiative Transfer Code for an Axisymmetric System. *Toshiya Ueta & Margaret Meixner.* 586, 1338 (2003)

Optical Polarization and Near-Infrared Photometry of the Proto–Planetary Nebula Henize 3-1475. *Claudia V. Rodrigues, Francisco J. Jablonski, Jane Gregario-Hetem, Gabriel R. Hickel, & Marilla J. Sartori.* 587, 312 (2003)

Are TiC Grains a Carrier of the 21 Micron Emission Band Observed around Post–Asymptotic Giant Branch Objects? *Takeshi Chigai, Tetsuo Yamamoto, Chihiro Kaito, & Yuki Kimura.* 587, 771 (2003)

Evidence for Grain Growth in the Protostellar Disks of Orion. *R. Y. Shuping, John Bally, Mark Morris, & Henry Throop.* 587, L109 (2003)

The Circumstellar Disk of the Butterfly Star in Taurus. *Sebastian Wolf, Deborah L. Padgett, & Karl R. Stapelfeldt.* 588, 373 (2003)

Spectroscopic and Spectropolarimetric Observations of V838 Monocerotis. *John P. Wisniewski, Nancy D. Morrison, Karen S. Bjorkman, Anatoly S. Miroshnichenko, Amanda C. Gault, Jennifer L. Hoffman, Marilyn R. Meade, & Jason M. Nett.* 588, 486 (2003)

CO Emission from Disks around AB Aurigae and HD 141569: Implications for Disk Structure and Planet Formation Timescales. *Sean D. Brittain, Terrence W. Rettig, Theodore Simon, Craig Kulesa, Michael A. DiSanti, & Neil Dello Russo.* 588, 535 (2003)

The Geometry of Resonant Signatures in Debris Disks with Planets. *Marc J. Kuchner & Matthew J. Holman.* 588, 1110 (2003)

R Cassiopeiae: Relative Strengths of SiO Masers at 43 and 86 GHz. *R. B. Phillips, A. H. Straughn, S. S. Doeleman, & C. J. Lonsdale.* 588, L105 (2003)

Magnetic Star-Disk Coupling in Classical T Tauri Systems. *Manfred Küker, Thomas Henning, & Günther Rüdiger.* 589, 397 (2003)

Hubble Space Telescope WFPC2 Imaging of the Disk and Jet of HV Tauri C. *Karl R. Stapelfeldt, François Ménard, Alan M. Watson, John E. Krist, Catherine Dougados, Deborah L. Padgett, & Wolfgang Brandner.* 589, 410 (2003)

Spatially Resolved 3 Micron Spectroscopy of IRAS 22272+5435: Formation and Evolution of Aliphatic Hydrocarbon Dust in Proto–Planetary Nebulae. *Miwa Goto, W. Gaessler, Yutaka Hayano, Masanori Iye, Yukiko Kamata, Tomio Kanzawa, Naoto Kobayashi, Yosuke Minowa, D. J. Saint-Jacques, Hideki Takami, Naruhisa Takato, & Hiroshi Terada.* 589, 419 (2003)

Gas in the Terrestrial Planet Region of Disks: CO Fundamental Emission from T Tauri Stars. *Joan Najita, John S. Carr, & Robert D. Mathieu.* 589, 931 (2003)

The Stellar "Wind" of MWC 349A. *M. A. Gordon.* 589, 953 (2003)

Intrinsic Properties of the Young Stellar Object SU Aurigae. *L. E. DeWarf, J. F. Sepinsky, E. F. Guinan, I. Ribas, & I. Nadalin.* 590, 357 (2003)

Modeling the Infrared Emission from the HR 4796A Disk. *Aigen Li & J. I. Lunine.* 590, 368 (2003)

NGC 7538S—a High-Mass Protostar with a Massive Rotating Disk. *Göran Sandell, Melvyn Wright, & James R. Forster.* 590, L45 (2003)

Trapped Protostellar Winds and Their Breakout. *Francis P. Wilkin & Steven W. Stahler.* 590, 917 (2003)

An Abundance Analysis of the New Carbon-Rich Proto-Planetary Nebula IRAS 06530−0213. *Bruce J. Hrivnak & Bacham E. Reddy.* 590, 1049 (2003)

The First Detailed Look at a Brown Dwarf Disk. *I. Pascucci, D. Apai, Th. Henning, & C. P. Dullemond.* 590, L111 (2003)

The Mid-Infrared–emitting Dust around AB Aurigae. *C. H. Chen & M. Jura.* 591, 267 (2003)

Two-dimensional Radiative Transfer in Protostellar Envelopes. I. Effects of Geometry on Class I Sources. *Barbara A. Whitney, Kenneth Wood, J. E. Bjorkman, & Michael J. Wolff.* 591, 1049 (2003)

The Effects of UV Continuum and Lyα Radiation on the Chemical Equilibrium of T Tauri Disks. *Edwin Bergin, Nuria Calvet, Paola D'Alessio, & Gregory J. Herczeg.* 591, L159 (2003)

Accretion in Young Stellar/Substellar Objects. *James Muzerolle, Lynne Hillenbrand, Nuria Calvet, César Briceño, & Lee Hartmann.* 592, 266 (2003)

Evidence for a T Tauri Phase in Young Brown Dwarfs. *Ray Jayawardhana, Subhanjoy Mohanty, & Gibor Basri.* 592, 282 (2003)

Spiral Arms in Accretion Discs Encounters. *S. Pfalzner.* 592, 986 (2003)

Magnetic Roster Winds and Keplerian Disks of Hot Stars. *M. Maheswaran.* 592, 1156 (2003)

Observations of DG Tauri with the Keck Interferometer. *M. Colavita, R. Akeson, P. Wizinowich, M. Shao, S. Acton, J. Beletic, J. Bell, J. Berlin, A. Boden, A. Booth, R. Boutell, F. Chaffee, D. Chan, J. Chock, R. Cohen, S. Crawford, M. Creech-Eakman, G. Eychaner, C. Felizardo, J. Gathright, G. Hardy, H. Henderson, J. Herstein, M. Hess, E. Hovland, M. Hrynevych, R. Johnson, J. Kelley, R. Kendrick, C. Koresko, P. Kurpis, D. Le Mignant, H. Lewis, E. Ligon, W. Lupton, D. McBride, B. Mennesson, R. Millan-Gabet, J. Monnier, J. Moore, C. Nance, C. Neyman, A. Niessner, D. Palmer, L. Reder, A. Rudeen, T. Saloga, A. Sargent, E. Serabyn, R. Smythe, P. Stomski, K. Summers, M. Swain, P. Swanson, R. Thompson, K. Tsubota, A. Tumminello, G. van Belle, G. Vasisht, J. Vause, J. Walker, K. Wallace, & U. Wehmeier.* 592, L83 (2003)

The Salty Scrambled Egg: Detection of NaCl toward CRL 2688. *J. L. Highberger, K. J. Thomson, P. A. Young, D. Arnett, & L. M. Ziurys.* 593, 393 (2003)

Modeling the Transport of Polarized Radiation Due to Scattering in Spherical Dust Shells. *David A. Joiner & Chun Ming Leung.* 593, 402 (2003)

First Detection of Millimeter Dust Emission from Brown Dwarf Disks. *R. Klein, D. Apai, I. Pascucci, Th. Henning, & L. B. F. M. Waters.* 593, L57 (2003)

Indications for Grain Growth and Mass Decrease in Cold Dust Disks around Classical T Tauri Stars in the MBM 12 Young Association. *Michiel R. Hogerheijde, Doug Johnstone, Isamu Matsuyama, Ray Jayawardhana, & James Muzerolle.* 593, L101 (2003)

Magellan Echelle Spectroscopy of TW Hydrae Brown Dwarfs. *Subhanjoy Mohanty, Ray Jayawardhana, & David Barrado y Navascues.* 593, L109 (2003)

KH 15D: A Star Eclipsed by a Large-Scale Dusty Vortex? *P. Barge & M. Viton.* 593, L117 (2003)

The Astrobiology of Nucleobases. *Z. Peeters, O. Botta, S. B. Charnley, R. Ruiterkamp, & P. Ehrenfreud.* 593, L129 (2003)

Guilt by Association: The 13 Micron Dust Emission Feature and Its Correlation to Other Gas and Dust Features. *G. C. Sloan, Kathleen E. Kraemer, J. H. Goebel, & Stephan D. Price.* 594, 482 (2003)

Deep Keck Adaptive Optics Searches for Extrasolar Planets in the Dust of ϵ Eridani and Vega. *Bruce A. Macintosh, E. E. Becklin, Denise Kaisler, Quinn Konopacky, & B. Zuckerman.* 594, 538 (2003)

Notch Filter Masks: Practical Image Masks for Planet-finding Coronagraphs. *Marc J. Kuchner & David N. Spergel.* 594, 617 (2003)

New Laboratory Spectra of Isolated β-SiC Nanoparticles: Comparison with Spectra Taken by the *Infrared Space Observatory*. *D. Clément, H. Mutschke, R. Klein, & Th. Henning.* 594, 642 (2003)

Explaining UX Orionis Star Variability with Self-shadowed Disks. *C. P. Dullemond, M. E. van den Ancker, B. Acke, & R. van Boekel.* 594, L47 (2003)

Locally Aromatic Polycyclic Hydrocarbons as Potential Carriers of Infrared Emission Features. *Simon Petrie, Robert Stranger, & Walter W. Duley.* 594, 869 (2003)

The High-Excitation Planetary Nebula NGC 246: Optical and Near-Ultraviolet Observations and Two-Dimensional Numerical Models. *Andrew Szentgyorgyi, John Raymond, José Franco, Eva Villaver, & Luis López-Martín.* 594, 874 (2003)

Modeling the Infrared Emission from the HD 141569A Disk. *Aigen Li & J. I. Lunine.* 594, 987 (2003)

High Angular Resolution, Sensitive CS $J = 2$–1 and $J = 3$–2 Imaging of the Protostar L1551 NE: Evidence for Outflow-Triggered Star Formation? *Sozo Yokogawa, Yoshimi Kitamura, Munetake Momose, & Ryohei Kawabe.* 595, 266 (2003)

A C-Band Spectral Scan of IRC +10°216. *Esteban Araya, Peter Hofner, Paul Goldsmith, Slava Slysh, & Shuro Takano.* 596, 556 (2003)

Disks around the Young Stars with TW Hydrae and HD 100546 Imaged at 3.4 Millimeters with the Australia Telescope Compact Array. *D. J. Wilner, T. L. Bourke, C. M. Wright, J. K. Jørgensen, E. F. van Dishoeck, & T. Wong.* 596, 597 (2003)

Model Spectral Energy Distributions of Circumstellar Debris Disks. I. Analytic Disk Density Distributions. *Sebastian Wolf & Lynne A. Hillenbrand.* 596, 603 (2003)

The Structure of High Strehl Ratio Point-Spread Functions. *Marshall D. Perrin, Anand Sivaramakrishnan, Russell B. Makidon, Ben R. Oppenheimer, & James R. Graham.* 596, 702 (2003)

Accretion-Induced Collimated Fast Wind Model for η Carinae. *Noam Soker.* 597, 513 (2003)

Detection of Close-In Extrasolar Giant Planets Using the Fourier-Kelvin Stellar Interferometer. *William C. Danchi, Drake Deming, Marc J. Kuchner, & Sara Seager.* 597, L57 (2003)

Continuum and CO/HCO^+ Emission from the Disk around the T Tauri Star LkCa 15. *Chunhua Qi, Jacqueline E. Kessler, David W. Koerner, Anneila I. Sargent, & Geoffrey A. Blake.* 597, 986 (2003)

Detection of MgNC in CRL 618: Tracing Metal Chemistry in Asymptotic Giant Branch Evolution. *J. L. Highberger & L. M. Ziurys.* 597, 1065 (2003)

The Effect of Multiple Scattering on the Polarization from Binary Star Envelopes. I. Self- and Externally Illuminated Disks. *Jennifer L. Hoffman, Barbara A. Whitney, & Kenneth H. Nordsieck.* 598, 572 (2003)

The Age Dependence of the Vega Phenomenon: Theory. *C. Dominik & G. Decin.* 598, 626 (2003)

Age Dependence of the Vega Phenomenon: Observations. *G. Decin, C. Dominik, L. B. F. M. Waters, & C. Waelkens.* 598, 636 (2003)

The Origin of Jovian Planets in Protostellar Disks: The Role of Dead Zones. *Soko Matsumura & Ralph E. Pudritz.* 598, 645 (2003)

First Evidence of Dusty Disks around Herbig Be Stars. *A. Fuente, A. Rodríguez-Franco, L. Testi, A. Natta, R. Bachiller, & R. Neri.* 598, L39 (2003)

Evolution of the Inner Circumstellar Envelope of V838 Monocerotis. *J. P. Wisniewski, K. S. Bjorkman, & A. M. Magalhães.* 598, L43 (2003)

Modeling the Infrared Emission from the ϵ Eridani Disk. *Aigen Li, J. I. Lunine, & G. J. Bendo.* 598, L51 (2003)

Two-dimensional Radiative Transfer in Protostellar Envelopes. II. An Evolutionary Sequence. *Barbara A. Whitney, Kenneth Wood, J. E. Bjorkman, & Martin Cohen.* 598, 1079 (2003)

A Search for Mid-Infrared Emission from Hot Molecular Core Candidates. *J. M. De Buizer, J. T. Radomski, C. M. Telesco, & R. K. Piña.* 598, 1127 (2003)

A Failed Gamma-Ray Burst with Dirty Energetic Jets Spirited Away? New Implications for the Gamma-Ray Burst–Supernova Connection from SN 2002ap. *Tomonori Totani.* 598, 1151 (2003)

The Dust Ring of Luminous Blue Variable Candidate HD 168625: Infrared Observations and Model Calculations. *Timothy B. O'Hara, Margaret Meixner, Angela K. Speck, Toshiya Ueta, & Matthew Bobrowsky.* 598, 1255 (2003)

Resonant Trapping of Planetesimals by Planet Migration: Debris Disk Clumps and Vega's Similarity to the Solar System. *M. C. Wyatt.* 598, 1321 (2003)

On Titanium Carbide Nanoparticles as the Origin of the 21 Micron Emission Feature in Post–Asymptotic Giant Branch Stars. *Aigen Li.* 599, L45 (2003)

X-Ray Emission from the Pre–Planetary Nebula Henize 3-1475. *Raghvendra Sahai, Joel H. Kastner, Adam Frank, Mark Morris, & Eric G. Blackman.* 599, L87 (2003)

Infrared Properties of Solid Titanium Oxides: Exploring Potential Primary Dust Condensates. *T. Posch, F. Kerschbaum, D. Fabian, H. Mutschke, J. Dorschner, A. Tamanai, & T. Henning.* 149, 437 (2003)

STARS: CORONAE

Are Coronae of Magnetically Active Stars Heated by Flares? II. Extreme Ultraviolet and X-Ray Flare Statistics and the Differential Emission Measure Distribution. *Manuel Güdel, Marc Audard, Vinay L. Kashyap, Jeremy J. Drake, & Edward F. Guinan.* 582, 423 (2003)

Chandra, *Extreme Ultraviolet Explorer*, and Very Large Array Observations of the Active Binary System σ^2 Coronae Borealis. *Rachel A. Osten, Thomas R. Ayres, Alexander Brown, Jeffrey L. Linsky, & Anita Krishnamurthi.* 582, 1073 (2003)

Space Telescope Imaging Spectrograph Survey of Far-Ultraviolet Coronal Forbidden Lines in Late-Type Stars. *Thomas R. Ayres, Alexander Brown, Graham M. Harper, Rachel A. Osten, Jeffrey L. Linsky, Brian E. Wood, & Seth Redfield.* 583, 963 (2003)

A *Far Ultraviolet Spectroscopic Explorer* Survey of Coronal Forbidden Lines in Late-Type Stars. *Seth Redfield, Thomas R. Ayres, Jeffrey L. Linsky, Thomas B. Ake, A. K. Dupree, Richard D. Robinson, & Peter R. Young.* 585, 993 (2003)

Coronal Mass Ejection: Initiation, Magnetic Helicity, and Flux Ropes. I. Boundary Motion–driven Evolution. *T. Amari, J. F. Luciani, J. J. Aly, Z. Mikic, & J. Linker.* 585, 1073 (2003)

The Structure of Stellar Coronae in Active Binary Systems. *J. Sanz-Forcada, N. S. Brickhouse, & A. K. Dupree.* 145, 147 (2003)

Coronal X-Ray Emission from an Intermediate-Age Brown Dwarf. *Yohko Tsuboi, Yoshitomo Maeda, Eric D. Feigelson, Gordon P. Garmire, George Chartas, Koji Mori, & Steven H. Pravdo.* 587, L51 (2003)

Chandra Observations of the Young Open Cluster NGC 2516. *F. Damiani, E. Flaccomio, G. Micela, S. Sciortino, F. R. Harnden, Jr., S. S. Murray, S. J. Wolk, & R. D. Jeffries.* 588, 1009 (2003)

Separating the X-Ray Emissions of UV Ceti A and B with *Chandra*. *Marc Audard, Manuel Güdel, & Stephen L. Skinner.* 589, 983 (2003)

Emission-Line Spectra of Ar IX–Ar XVI in the Soft X-Ray Region 20–50 Å. *J. K. Lepson, P. Beiersdorfer, E. Behar, & S. M. Kahn.* 590, 604 (2003)

Chandra Observations of Magnetic White Dwarfs and Their Theoretical Implications. *Z. E. Musielak, M. Noble, J. G. Porter, & D. E. Winget.* 593, 481 (2003)

An Estimate of the Sun's *ROSAT*-PSPC X-Ray Luminosities Using *SNOE*-SXP Measurements. *Philip G. Judge, Stanley C. Solomon, & Thomas R. Ayres.* 593, 534 (2003)

Statistical Analysis of 5 Year Continuous Radio Flare Data from β Persei, V711 Tauri, δ Librae, and UX Arietis. *Mercedes T. Richards, Elizabeth B. Waltman, Frank D. Ghigo, & Donald St. P. Richards.* 147, 337 (2003)

From the Heart of the Ghoul: C and N Abundances in the Corona of Algol B. *Jeremy J. Drake.* 594, 496 (2003)

Far-Ultraviolet Emissions of the Sun in Time: Probing Solar Magnetic Activity and Effects on Evolution of Paleoplanetary Atmospheres. *Edward F. Guinan, Ignasi Ribas, & Graham M. Harper.* 594, 561 (2003)

X-Ray Evidence of the Common Envelope Phase of V471 Tauri. *Jeremy J. Drake & Marek J. Sarna.* 594, L55 (2003)

The Quiescent Corona of VB 10. *Thomas A. Fleming, Mark S. Giampapa, & David Garza.* 594, 982 (2003)

The Coronae of AR Lacertae. *David P. Huenemoerder, Claude R. Canizares, Jeremy J. Drake, & Jorge Sanz-Forcada.* 595, 1131 (2003)

Coronal Mass Ejection: Initiation, Magnetic Helicity, and Flux Ropes. II. Turbulent Diffusion–driven Evolution. *T. Amari, J. F. Luciani, J. J. Aly, Z. Mikic, & J. Linker.* 595, 1231 (2003)

Buried Alive in the Coronal Graveyard. *Thomas R. Ayres, Alexander Brown, & Graham M. Harper.* 598, 610 (2003)

Binary Reconnection and the Heating of the Solar Corona. *E. R. Priest, D. W. Longcope, & V. S. Titov.* 598, 667 (2003)

Modeling the Ne IX Triplet Spectral Region of Capella with the *Chandra* and *XMM-Newton* Gratings. *Jan-Uwe Ness, Nancy S. Brickhouse, Jeremy J. Drake, & David P. Huenemoerder.* 598, 1277 (2003)

The Relationship Between X-Ray Radiance and Magnetic Flux. *Alexei A. Pevtsov, George H. Fisher, Loren W. Acton, Dana W. Longcope, Christopher M. Johns-Krull, Charles C. Kankelborg, & Thomas R. Metcalf.* 598, 1387 (2003)

STARS: DISTANCES

LSR 0602+3910: Discovery of a Bright Nearby L-Type Brown Dwarf. *Samir Salim, Sébastien Lépine, R. Michael Rich, & Michael M. Shara.* 586, L149 (2003)

Fundamental Properties and Distances of Large Magellanic Cloud Eclipsing Binaries. IV. HV 5936. *E. L. Fitzpatrick, I. Ribas, E. F. Guinan, F. P. Maloney, & A. Claret.* 587, 685 (2003)

Discovery of a New Nearby Star. *B. J. Teegarden, S. H. Pravdo, M. Hicks, K. Lawrence, S. B. Shaklan, K. Covey, O. Fraser, S. L. Hawley, T. McGlynn, & I. N. Reid.* 589, L51 (2003)

The Distances to Open Clusters from Main-Sequence Fitting. I. New Models and a Comparison with the Properties of the Hyades Eclipsing Binary VB 22. *Marc H. Pinsonneault, Donald M. Terndrup, Robert B. Hanson, & John R. Stauffer.* 598, 588 (2003)

Hubble Space Telescope Observations of Novae in M49. *Laura Ferrarese, Patrick Côté, & Andrés Jordán.* 599, 1302 (2003)

PSR J1909−3744: A Binary Millisecond Pulsar with a Very Small Duty Cycle. *B. A. Jacoby, M. Bailes, M. H. van Kerkwijk, S. Ord, A. Hotan, S. R. Kulkarni, & S. B. Anderson.* 599, L99 (2003)

STARS: DWARF NOVAE

Measuring White Dwarf Accretion Rates via Their Effective Temperatures. *Dean Townsley & Lars Bildsten.* 596, L227 (2003)

A Probable Dwarf Nova Outburst in the Core of the Globular Cluster M22. *Jay Anderson, Adrienne M. Cool, & Ivan R. King.* 597, L137 (2003)

Hubble Space Telescope Observations of Ultraviolet Oscillations in WZ Sagittae during the Decline from Outburst. *William F. Welsh, Edward M. Sion, Patrick Godon, Boris T. Gänsicke, Christian Knigge, Knox S. Long, & Paula Szkody.* 599, 509 (2003)

STARS: EARLY-TYPE

A New Extragalactic Distance Determination Method Using Flux-weighted Gravity of Late B and Early A Supergiants. *Rolf P. Kudritzki, Fabio Bresolin, & Nobert Przybilla.* 582, L83 (2003)

Wind Accretion and State Transitions in Cygnus X-1. *D. R. Gies, C. T. Bolton, J. R. Thomson, W. Huang, M. V. McSwain, R. L. Riddle, Z. Wang, P. J. Wiita, D. W. Wingert, B. Csak, & L. L. Kiss.* 583, 424 (2003)

Synthetic High-Resolution Line Spectra of Star-forming Galaxies below 1200 Å. *Carmelle Robert, Anne Pellerin, Alessandra Aloisi, Claus Leitherer, Charles Hoopes, & Timothy M. Heckman.* 144, 21 (2003)

Quantitative Spectral Analysis of Early B-Type Supergiants in the Sculptor Galaxy NGC 300. *Miguel Alejandro Urbaneja, Aremio Herrero, Fabio Bresolin, Rolf-Peter Kudritzki, Wolfgang Gieren, & Joachim Puls.* 584, L73 (2003)

Magnetic Fields in Massive Stars. II. The Buoyant Rise of Magnetic Flux Tubes through the Radiative Interior. *K. B. MacGregor & J. P. Cassinelli.* 586, 480 (2003)

High-Resolution *Chandra* Spectroscopy of τ Scorpii: A Narrow-Line X-Ray Spectrum from a Hot Star. *David H. Cohen, Geneviève E. de Messières, Joseph J. MacFarlane, Nathan A. Miller, Joseph P. Cassinelli, Stanley P. Owocki, & Duane A. Liedahl.* 586, 495 (2003)

Constraints on the Ionization Balance of Hot-Star Winds from *FUSE* Observations of O Stars in the Large Magellanic Cloud. *D. Massa, A. W. Fullerton, G. Sonneborn, & J. B. Hutchings.* 586, 996 (2003)

The Remarkable Alternating Spectra of the Of?p Star HD 191612. *Nolan R. Walborn, Ian D. Howarth, Artemio Herrero, & Daniel J. Lennon.* 588, 1025 (2003)

Far Ultraviolet Spectroscopic Explorer Snapshot Survey of O VI Variability in the Winds of 66 OB-Type Stars. *N. Lehner, A. W. Fullerton, D. Massa, K. R. Sembach, & J. Zsargó.* 589, 526 (2003)

Diffuse X-Ray Emission from the Quiescent Superbubble M17, the Omega Nebula. *Bryan C. Dunne, You-Hua Chu, C.-H. Rosie Chen, Justin D. Lowry, Leisa Townsley, Robert A. Gruendl, Martín A. Guerrero, & Margarita Rosado.* 590, 306 (2003)

A Grid of Non-LTE Line-Blanketed Model Atmospheres of O-Type Stars. *Thierry Lanz & Ivan Hubeny.* 146, 417 (2003)

The Mid-Infrared–emitting Dust around AB Aurigae. *C. H. Chen & M. Jura.* 591, 267 (2003)

How Massive Single Stars End Their Life. *A. Heger, C. L. Fryer, S. E. Woosley, N. Langer, & D. H. Hartmann.* 591, 288 (2003)

Reanalysis of Very Large Telescope Data for M83 with Image Subtraction—Ninefold Increase in Number of Cepheids. *A. Z. Bonanos & K. Z. Stanek.* 591, L111 (2003)

Early-Type Stars: Most Favorable Targets for Astrometrically Detectable Planets in the Habitable Zone. *Andrew Gould, Eric B. Ford, & Debra A. Fischer.* 591, L155 (2003)

X-Ray Emission-Line Profile Modeling of O Stars: Fitting a Spherically Symmetric Analytic Wind-Shock Model to the *Chandra* Spectrum of ζ Puppis. *Roban H. Kramer, David H. Cohen, & Stanley P. Owocki.* 592, 532 (2003)

Sagittarius A* Companion S0-2: A Probe of Very High Mass Star Formation. *Andrew Gould & Alice C. Quillen.* 592, 935 (2003)

10 MK Gas in M17 and the Rosette Nebula: X-Ray Flows in Galactic H II Regions. *Leisa K. Townsley, Eric D. Feigelson, Thierry Montmerle, Patrick S. Broos, You-Hua Chu, & Gordon P. Garmire.* 593, 874 (2003)

X-Ray Modeling of Very Young Early-Type Stars in the Orion Trapezium: Signatures of Magnetically Confined Plasmas and Evolutionary Implications. *N. S. Schulz, C. Canizares, D. Huenemoerder, & K. Tibbets.* 595, 365 (2003)

The Massive Triple Star System HD 16429 A. *M. V. McSwain.* 595, 1124 (2003)

Quantitative Spectroscopy of O Stars at Low Metallicity: O Dwarfs in NGC 346. *J.-C. Bouret, T. Lanz, D. J. Hillier, S. R. Heap, I. Hubeny, D. J. Lennon, L. J. Smith, & C. J. Evans.* 595, 1182 (2003)

The Unusual 2001 Periastron Passage in the "Clockwork" Colliding-Wind Binary WR 140. *S. V. Marchenko, A. F. J. Moffat, D. Ballereau, J. Chauville, J. Zorec, G. M. Hill, K. Annuk, L. J. Corral, H. Demers, P. R. J. Eenens, K. P. Panov, W. Seggewiss, J. R. Thomson, & A. Villar-Sbaffi.* 596, 1295 (2003)

A Study of Cygni OB2: Pointing the Way toward Finding Our Galaxy's Super–Star Clusters. *M. M. Hanson.* 597, 957 (2003)

Detection of Reactive Ions in the Ultracompact H II Regions Monoceros R2 and G29.96−0.02. *J. R. Rizzo, A. Fuente, A. Rodríguez-Franco, & S. García-Burillo.* 597, L153 (2003)

A Search for Mid-Infrared Emission from Hot Molecular Core Candidates. *J. M. De Buizer, J. T. Radomski, C. M. Telesco, & R. K. Piña.* 598, 1127 (2003)

Ionizing Photon Emission Rates from O- and Early B-Type Stars and Clusters. *Amiel Sternberg, Tadziu L. Hoffmann, & A. W. A. Pauldrach.* 599, 1333 (2003)

Discovery of a Candidate for the Central Star of the Ultracompact H II Region G5.89−0.39. *M. Feldt, E. Puga, R. Lenzen, Th. Henning, W. Brandner, B. Stecklum, A.-M. Lagrange, E. Gendron, & G. Rousset.* 599, L91 (2003)

STARS: EMISSION-LINE

The Remarkable Alternating Spectra of the Of?p Star HD 191612. *Nolan R. Walborn, Ian D. Howarth, Artemio Herrero, & Daniel J. Lennon.* 588, 1025 (2003)

STARS: EMISSION-LINE, BE

Near-Infrared Interferometric Measurements of Herbig Ae/Be Stars. *J. A. Eisner, B. F. Lane, R. L. Akeson, L. A. Hillenbrand, & A. I. Sargent.* 588, 360 (2003)

The Stellar "Wind" of MWC 349A. *M. A. Gordon.* 589, 953 (2003)

Accretion in Young Stellar/Substellar Objects. *James Muzerolle, Lynne Hillenbrand, Nuria Calvet, César Briceño, & Lee Hartmann.* 592, 266 (2003)

Magnetic Roster Winds and Keplerian Disks of Hot Stars. *M. Maheswaran.* 592, 1156 (2003)

STARS: EVOLUTION

Post–Main-Sequence Changes in Rotational Velocities. *Helmut A. Abt.* 582, 420 (2003)

Discovery of Multiple Molecular Shells in the Outer Envelope of IRC +10216. *D. Fong, M. Meixner, & R. Y. Shah.* 582, L39 (2003)

First Full Evolutionary Computation of the Helium Flash-induced Mixing in Population II Stars. *Santi Cassisi, Helmut Schlattl, Maurizio Salaris, & Achim Weiss.* 582, L43 (2003)

The Chemical Composition of White Dwarfs as a Test of Convective Efficiency during Core Helium Burning. *Oscar Straniero, Inmaculada Domínguez, Gianluca Imbriani, & Luciano Piersanti.* 583, 878 (2003)

Discovery of a Tight Brown Dwarf Companion to the Low-Mass Star LHS 2397a. *Melanie Freed, Laird M. Close, & Nick Siegler.* 584, 453 (2003)

Accurate Mass Ratio and Heating Effects in the Dual-Line Millisecond Binary Pulsar in NGC 6397. *F. R. Ferraro, E. Sabbi, R. Gratton, A. Possenti, N. D'Amico, A. Bragaglia, & F. Camilo.* 584, L13 (2003)

Cosmological Effects of the First Stars: Evolving Spectra of Population III. *Jason Tumlinson, J. Michael Shull, & Aparna Venkatesan.* 584, 608 (2003)

The Y^2 Stellar Evolutionary Tracks. *Sukyoung K. Yi, Yong-Cheol Kim, & Pierre Demarque.* 144, 259 (2003)

Carbon Isotopes in Globular Clusters Down to the Bump in the Luminosity Function. *Matthew D. Shetrone.* 585, L45 (2003)

On the Baryometric Status of ^{3}He. *Elisabeth Vangioni-Flam, Keith A. Olive, Brian D. Fields, & Michel Cassé.* 585, 611 (2003)

ROSAT X-Ray Spectral Properties of Nearby Young Associations: TW Hydrae, Tucana-Horologium, and the β Pictoris Moving Group. *Joel H. Kastner, Lara Crigger, Margaret Rich, & David A. Weintraub.* 585, 878 (2003)

A Pulsation Mechanism for GW Virginis Variables. *Arthur N. Cox.* 585, 975 (2003)

Fuel-Supply–limited Stellar Relaxation Oscillations: Application to Multiple Rings around Asymptotic Giant Branch Stars and Planetary Nebulae. *Hugh M. Van Horn, John H. Thomas, Adam Frank, & Eric G. Blackman.* 585, 983 (2003)

Modeling Accretional Heating in Dwarf Novae. *Patrick Godon & Edward M. Sion.* 586, 427 (2003)

On the Rotational Evolution of Solar- and Late-Type Stars, Its Magnetic Origins, and the Possibility of Stellar Gyrochronology. *Sydney A. Barnes.* 586, 464 (2003)

s-Process Nucleosynthesis in Asymptotic Giant Branch Stars: A Test for Stellar Evolution. *Maria Lugaro, Falk Herwig, John C. Lattanzio, Roberto Gallino, & Oscar Straniero.* 586, 1305 (2003)

Abundances of Post–Iron-Peak Elements in HD 35155: A Symbiotic Star of Spectral Type S. *Andrew D. Vanture, George Wallerstein, Roberto Gallino, & Stefano Masera.* 587, 384 (2003)

Detection of Nine M8.0-L0.5 Binaries: The Very Low-Mass Binary Population and Its Implications for Brown Dwarf and Very Low Mass Star Formation. *Laird M. Close, Nick Siegler, Melanie Freed, & Beth Biller.* 587, 407 (2003)

Blue Straggler Stars: A Direct Comparison of Star Counts and Population Ratios in Six Galactic Globular Clusters. *Francesco R. Ferraro, Alison Sills, Robert T. Rood, Barbara Paltrinieri, & Roberto Buonanno.* 588, 464 (2003)

Neutrino-driven Explosions in Gamma-Ray Bursts and Hypernovae. *Chris L. Fryer & Peter Mészáros.* 588, L25 (2003)

The Initial Helium Content of Galactic Globular Cluster Stars from the *R*-Parameter: Comparison with the Cosmic Microwave Background Constraint. *Santi Cassisi, Maurizio Salaris, & Alan W. Irwin.* 588, 862 (2003)

Abundance Analysis of HE 2146−1247, a Star with Extremely Enhanced Neutron Capture Elements. *Judith G. Cohen, Norbert Christlieb, Y.-Z. Qian, & G. J. Wasserburg.* 588, 1082 (2003)

New Low-Mass Members of the Taurus Star-forming Region. *K. L. Luhman, Cesar Briceno, John R. Stauffer, Lee Hartmann, D. Barrado y Navascues, & Nelson Caldwell.* 590, 348 (2003)

The Implications of *Wilkinson Microwave Anisotropy Probe* Observations for Population III Star Formation Processes. *Renyue Cen.* 591, L5 (2003)

Onset of Mass Loss in Red Giants: Association with an Evolutionary Event. *D. J. Mullan & J. MacDonald.* 591, 1203 (2003)

Evolution, Explosion, and Nucleosynthesis of Core-Collapse Supernovae. *Marco Limongi & Alessandro Chieffi.* 592, 404 (2003)

The Role of Helium Stars in the Formation of Double Neutron Stars. *N. Ivanova, K. Belczynski, V. Kalogera, F. A. Rasio, & R. E. Taam.* 592, 475 (2003)

The Nature of Overluminous F Stars Observed in a Radial-Velocity Survey. *R. F. Griffin & A. A. Suchkov.* 147, 103 (2003)

Cataclysmic Variable Evolution with Circumbinary Disks. *Ronald E. Taam, Eric L. Sandquist, & Guillaume Dubus.* 592, 1124 (2003)

Canonical Extra Mixing in Low-Mass Red Giants. *Pavel A. Denissenkov & Don A. VandenBerg.* 593, 509 (2003)

The *s*-Process in Rotating Asymptotic Giant Branch Stars. *Falk Herwig, Norbert Langer, & Maria Lugaro.* 593, 1056 (2003)

A Census of the Young Cluster IC 348. *K. L. Luhman, John R. Stauffer, A. A. Muench, G. H. Rieke, E. A. Lada, J. Bouvier, & C. J. Lada.* 593, 1093 (2003)

Constraining the Evolution of ZZ Ceti. *Anjum S. Mukadem, S. O. Kepler, D. E. Winget, R. E. Nather, M. Kilic, F. Mullally, T. von Hippel, S. J. Kleinman, A. Nitta, J. A. Guzik, P. A. Bradley, J. Matthews, K. Sekiguchi, D. J. Sullivan, T. Sullivan, R. R. Shobbrook, P. Birch, X. J. Jiang, D. W. Xu, S. Joshi, B. N. Ashoka, P. Ibbetson, E. Leibowitz, E. O. Ofek, E. G. Meištas, R. Janulis, D. Ališauskas, R. Kalytis, G. Handler, D. Kilkenny, D. O'Donoghue, D. W. Kurtz, M. Müller, P. Moskalik, W. Ogloza, S. Zoła, J. Krzesiński, F. Johannessen, J. M. Gonzalez-Perez, J. -E. Solheim, R. Silvotti, S. Bernabei, G. Vauclair, N. Dolez, J. N. Fu, M. Chevreton, M. Manteiga, O. Suárez, A. Ulla, M. S. Cunha, T. S. Metcalfe, A. Kanaan, L. Fraga, A. F. M. Costa, O. Giovannini, G. Fontaine, P. Bergeron, M. S. O'Brien, D. Sanwal, M. A. Wood, T. J. Ahrens, N. Silvestri, E. W. Klumpe, S. D. Kawaler, R. Riddle, M. D. Reed, & T. K. Watson.* 594, 961 (2003)

On the Origin of HE 0107−5240, the Most Iron-deficient Star Presently Known. *Marco Limongi, Alessandro Chieffi, & Piercarlo Bonifacio.* 594, L123 (2003)

The Puzzling Dynamical Status of the Core of the Globular Cluster NGC 6752. *F. R. Ferraro, A. Possenti, E. Sabbi, P. Lagani, R. T. Rood, N. D'Amico, & L. Origlia.* 595, 179 (2003)

High-Resolution Spectroscopy of FU Orionis Stars. *G. H. Herbig, P. P. Petrov, & R. Duemmler.* 595, 384 (2003)

Stellar Hydrodynamics in Radiative Regions. *Patrick A. Young, Karen A. Knierman, Jane R. Rigby, & David Arnett.* 595, 1114 (2003)

A Reevaluation of the Super–Lithium-rich Star in NGC 6633. *Chris Laws & Guillermo Gonzalez.* 595, 1148 (2003)

ROSAT View of *Hipparcos* F Stars. *A. A. Suchkov, V. V. Makarov, & W. Voges.* 595, 1206 (2003)

Luminosity Functions of Young Clusters: Modeling the Substellar Mass Regime. *Peter R. Allen, David E. Trilling, David W. Koerner, & I. Neill Reid.* 595, 1222 (2003)

RR Lyrae Stars in Galactic Globular Clusters. II. A Theoretical Approach to Variables in M3. *M. Marconi, F. Caputo, M. Di Criscienzo, & M. Castellani.* 596, 299 (2003)

The Impact of Pollution on Stellar Evolution Models. *Aaron Dotter & Brian Chaboyer.* 596, 496 (2003)

Stellar Pollution and [Fe/H] in the Hyades. *Aaron Dotter & Brian Chaboyer.* 596, L101 (2003)

Space Telescope Imaging Spectrograph Slitless Observations of Small Magellanic Cloud Planetary Nebulae: A Study on Morphology, Emission-Line Intensity, and Evolution. *Letizia Stanghellini, Richard A. Shaw, Bruce Balick, Max Mutchler, J. Chris Blades, & Eva Villaver.* 596, 997 (2003)

The Helium White Dwarf Orbiting the Millisecond Pulsar in the Halo of the Globular Cluster NGC 6752. *Francesco R. Ferraro, Andrea Possenti, Elena Sabbi, & Nichi D'Amico.* 596, L211 (2003)

Post–Asymptotic Giant Branch Evolution in the Large Megellanic Cloud: A Study of the Central Stars of Planetary Nebulae. *Eva Villaver, Letizia Stanghellini, & Richard A. Shaw.* 597, 298 (2003)

Detection of the Evolutionary Stages of Variables in M3. *J. Jurcsik, J. M. Benko, G. A. Bakos, B. Szeidl, & R . Szabó.* 597, L49 (2003)

Theoretical Considerations on the Properties of Accreting Millisecond Pulsars. *Lorne A. Nelson & Saul Rappaport.* 598, 431 (2003)

Onset of Shear Instability in Rotating Red Giants. *J. MacDonald & D. J. Mullan.* 598, 560 (2003)

Mid-Infrared Imaging of the Post–Asymptotic Giant Branch Star AC Herculis with the Multiple Mirror Telescope Adaptive Optics System. *Laird M. Close, Beth Biller, William F. Hoffman, Phil M. Hinz, John H. Bieging, Francois Wildi, Michael Lloyd-Hart, Guido Brusa, Don Fisher, Doug Miller, & Roger Angel.* 598, L35 (2003)

Thermal Stability of Rotating Low-Mass Subgiants and Red Giants. *Pavel A. Denissenkov & Don A. VandenBerg.* 598, 1246 (2003)

New Members of the TW Hydrae Association, β Pictoris Moving Group, and Tucana/Horologium Association. *Inseok Song, B. Zuckerman, & M. S. Bessell.* 599, 342 (2003)

Classical Cepheid Pulsation Models. IX. New Input Physics. *Silvia Petroni, Giuseppe Bono, Marcella Marconi, & Robert F. Stellingwerf.* 599, 522 (2003)

High-Resolution Images of Orbital Motion in the Trapezium Cluster: First Scientific Results from the Multiple Mirror Telescope Deformable Secondary Mirror Adaptive Optics System. *Laird M. Close, Francois Wildi, Michael Lloyd-Hart, Guido Brusa, Don Fisher, Doug Miller, Armando Riccardi, Piero Salinari, Donald McCarthy, Roger Angel, Rich Allen, H. M. Martin, Richard G. Sosa, Manny Montoya, Matt Rademacher, Mario Rascon, Dylan Curley, Nick Siegler, & Wolfgang J. Duschl.* 599, 537 (2003)

STARS: FLARE

Are Coronae of Magnetically Active Stars Heated by Flares? II. Extreme Ultraviolet and X-Ray Flare Statistics and the Differential Emission Measure Distribution. *Manuel Güdel, Marc Audard, Vinay L. Kashyap, Jeremy J. Drake, & Edward F. Guinan.* 582, 423 (2003)

Coronal Mass Ejection: Initiation, Magnetic Helicity, and Flux Ropes. I. Boundary Motion–driven Evolution. *T. Amari, J. F. Luciani, J. J. Aly, Z. Mikic, & J. Linker.* 585, 1073 (2003)

The Structure of Stellar Coronae in Active Binary Systems. *J. Sanz-Forcada, N. S. Brickhouse, & A. K. Dupree.* 145, 147 (2003)

Separating the X-Ray Emissions of UV Ceti A and B with *Chandra*. *Marc Audard, Manuel Güdel, & Stephen L. Skinner.* 589, 983 (2003)

Free-Free Emission in the Far-Ultraviolet Spectral Range: A Resource for Diagnosing Solar and Stellar Flare Plasmas. *U. Feldman, E. Landi, G. A. Doschek, I. Dammasch, & W. Curdt.* 593, 1226 (2003)

The Extreme-Ultraviolet Continuum of a Strong Stellar Flare. *D. J. Christian, M. Mathioudakis, D. Jevremović, J. Dupuis, S. Vennes, & A. Kawka.* 593, L105 (2003)

Statistical Analysis of 5 Year Continuous Radio Flare Data from β Persei, V711 Tauri, δ Librae, and UX Arietis. *Mercedes T. Richards, Elizabeth B. Waltman, Frank D. Ghigo, & Donald St. P. Richards.* 147, 337 (2003)

Coronal Mass Ejection: Initiation, Magnetic Helicity, and Flux Ropes. II. Turbulent Diffusion–driven Evolution. *T. Amari, J. F. Luciani, J. J. Aly, Z. Mikic, & J. Linker.* 595, 1231 (2003)

On Nonprimordial Deuterium Production by Accelerated Particles. *Tijana Prodanović & Brian D. Fields.* 597, 48 (2003)

Multiwavelength Observations of Flares on AD Leonis. *Suzanne L. Hawley, Joel C. Allred, Christopher M. Johns-Krull, George H. Fisher, William P. Abbet, Ilya Alekseev, Stavros I. Avgoloupis, Susana E. Deustua, Alastair Gunn, John H. Seiradakis, Martin M. Sirk, & Jeff A. Valenti.* 597, 535 (2003)

A Giant Outburst at Millimeter Wavelengths in the Orion Nebula. *Geoffrey C. Bower, Richard L. Plambeck, Alberto Bolatto, Nate McCrady, James R. Graham, Imke de Pater, Michael C. Liu, & Frederick K. Baganoff.* 598, 1140 (2003)

STARS: FORMATION

From Massive Protostars to a Giant H II Region: Submillimeter Imaging of the Galactic Ministarburst W43. *F. Motte, P. Schilke, & D. C. Lis.* 582, 277 (2003)

A Survey of 557 GHz Water Vapor Emission in the NGC 1333 Molecular Cloud. *Edwin A. Bergin, Michael J. Kaufman, Gary J. Melnick, Ronald L. Snell, & John E. Howe.* 582, 830 (2003)

A Fast Algorithm for Solving the Poisson Equation on a Nested Grid. *Tomoaki Matsumoto & Tomoyuki Hanawa.* 583, 296 (2003)

A Spectrophotometric Method to Determine the Inclination of Class I Objects. *Takeshi Nakazato, Taishi Nakamoto, & Masayuki Umemura.* 583, 322 (2003)

A Spectroscopic Survey of Subarcsecond Binaries in the Taurus-Auriga Dark Cloud with the *Hubble Space Telescope*. *Patrick Hartigan & Scott J. Kenyon.* 583, 334 (2003)

Internal Dust Correction Factors for Star Formation Rates Derived for Dusty H II Regions and Starburst Galaxies. *M. A. Dopita, B. A. Groves, R. S. Sutherland, & L. J. Kewley.* 583, 727 (2003)

A High Spectral Resolution VLBI Study of the 12 GHz Methanol Masers in W3(OH): Their Submilliarcsecond Structure and Clues on Saturation. *L. Moscadelli, K. M. Menten, C. M. Walmsley, & M. J. Reid.* 583, 776 (2003)

Inner Structures of Protostellar Collapse Candidate B335 Derived from Millimeter-Wave Interferometry. *Daniel W. A. Harvey, David J. Wilner, Philip C. Myers, Mario Tafalla, & Diego Mardones.* 583, 809 (2003)

Galaxy Star Formation as a Function of Environment in the Early Data Release of the Sloan Digital Sky Survey. *Percy L. Gomez, Robert C. Nichol, Christopher L. Miller, Michael L. Balogh, Tomotsugu Goto, Ann I. Zabludoff, A. Kathy Romer, Mariengela Bernardi, Ravi Sheth, Andrew M. Hopkins, Francisco J. Castander, Andrew J. Connolly, Donald P. Schneider, Jon Brinkmann, Don Q. Lamb, Mark SubbaRao, & Donald G. York.* 584, 210 (2003)

Molecular Outflow Search in the ρ Ophiuchi A and B2 Regions. *Takeshi Kamazaki, Masao Saito, Naomi Hirano, Tomofuni Umemoto, & Ryohei Kawabe.* 584, 357 (2003)

K3-50A: An Ultracompact H II Region Ionized by a Massive Stellar Cluster. *Yoshiko K. Okamoto, Hirokazu Kataza, Takuya Yamashita, Takashi Miyata, Shigeyuki Sako, Shinya Takubo, Mitsuhiko Honda, & Takashi Onaka.* 584, 368 (2003)

Discovery of a Tight Brown Dwarf Companion to the Low-Mass Star LHS 2397a. *Melanie Freed, Laird M. Close, & Nick Siegler.* 584, 453 (2003)

Time Dependence of the Ultraviolet Radiation Field in the Local Interstellar Medium. *Antonio Parravano, David J. Hollenbach, & Christopher F. McKee.* 584, 797 (2003)

$H^{13}CO^+$ and CH_3OH Line Observations of Prestellar Dense Cores in the TMC-1C Region. II. Internal Structure. *Shigehisa Takakuwa, Takeshi Kamazaki, Masao Saito, & Naomi Hirano.* 584, 818 (2003)

Structure of the Mid-Infrared–emitting Disk around WL 16. *Michael E. Ressler & Mary Barsony.* 584, 832 (2003)

X-Rays from the Vicinity of the Protostar L1551 IRS 5: Reflection or Fast Shocks? *John Bally, Eric Feigelson, & Bo Reipurth.* 584, 843 (2003)

Protoplanetary Disk Mass Distribution in Young Binaries. *Eric L. N. Jensen & Rachel L. Akeson.* 584, 875 (2003)

Clustered Star Formation in W75 N. *D. S. Shepherd, L. Testi, & D. P. Stark.* 584, 882 (2003)

Chemical Evolution in Protostellar Envelopes: Cocoon Chemistry. *S. D. Rodgers & S. B. Charnley.* 585, 355 (2003)

Mid-Infrared Imaging of the Protostellar Binary L1448N IRS 3(A,B). *David R. Ciardi, Charles M. Telesco, Jonathan P. Williams, R. Scott Fisher, Chris Packham, Robert Piña, & James Radomski.* 585, 392 (2003)

Comments on Inferences of Star Formation Histories and Birth Lines. *Lee Hartmann.* 585, 398 (2003)

CO Depletion and Deuterium Fractionation in Prestellar Cores. *A. Bacmann, B. Lefloch, C. Ceccarelli, J. Steinacker, A. Castets, & L. Loinard.* 585, L55 (2003)

The Formation of Massive Stars from Turbulent Cores. *Christopher F. McKee & Jonathan C. Tan.* 585, 850 (2003)

A Holistic Scenario of Turbulent Molecular Cloud Evolution and Control of the Star Formation Efficiency: First Tests. *E. Vázquez-Semadeni, J. Ballesteros-Paredes, & R. S. Klessen.* 585, L131 (2003)

Three Epochs of Star Formation in the High-Redshift Universe. *Jonathan Mackey, Volker Bromm, & Lars Hernquist.* 586, 1 (2003)

Spatial Study with the Very Large Telescope of a New Resolved Edge-on Circumstellar Dust Disk Discovered at the Periphery of the ρ Ophiuchi Dark Cloud. *N. Grosso, J. Alves, K. Wood, R. Neuhäuser, T. Montmerle, & J. E. Bjorkman.* 586, 296 (2003)

Expansion of the R4 H_2O Maser Arc near Cepheus A HW2. *J. F. Gallimore, R. J. Cool, M. D. Thornley, & J. McMullin.* 586, 306 (2003)

Binarity in Brown Dwarfs: T Dwarf Binaries Discovered with the *Hubble Space Telescope* Wide Field Planetary Camera 2. *Adam J. Burgasser, J. Davy Kirkpatrick, I. Neill Reid, Michael E. Brown, Cherie L. Miskey, & John E. Gizis.* 586, 512 (2003)

Tracing the Mass during Low-Mass Star Formation. IV. Observations and Modeling of the Submillimeter Continuum Emission from Class I Protostars. *Chadwick H. Young, Yancy L. Shirley, Neal J. Evans II, & Jonathan M. C. Rawlings.* 145, 111 (2003)

Reionization of Hydrogen and Helium by Early Stars and Quasars. *J. Stuart B. Wyithe & Abraham Loeb.* 586, 693 (2003)

Interactions between a Bright Young Stellar Object and the *Micourse Space Experiment* Infrared-Dark Cloud G79.3+0.3: An Early Stage of Triggered Star Formation? *R. O. Redman, P. A. Feldman, F. Wyrowski, S. Côté, S. J. Carey, & M. P. Egan.* 586, 1127 (2003)

A Comprehensive Study of the L1551 IRS 5 Binary System. *Mayra Osorio, Paolo D'Alessio, James Muzerolle, Nuria Calvet, & Lee Hartmann.* 586, 1148 (2003)

Interferometric Observations of the T Tauri Stars in the MBM 12 Cloud. *Yoichi Itoh, Koji Sugitani, Naoya Fukuda, Kouichiro Nakanishi, Katsuo Ogura, Motohide Tamura, Kazuko Marui, Kenta Fujita, Yumiko Oasa, & Misato Fukagawa.* 586, L141 (2003)

Numerical Simulations of High-Redshift Star Formation in Dwarf Galaxies. *Konstantinos Tassis, Tom Abel, Greg L. Bryan, & Michael L. Norman.* 587, 13 (2003)

The Sloan Digital Sky Survey: The Cosmic Spectrum and Star Formation History. *Karl Glazebrook, Ivan K. Baldry, Michael R. Blanton, Jon Brinkmann, Andrew Connolly, István Csabai, Masataka Fukugita, Željko Ivezić, Jon Loveday, Avery Meiksin, Robert Nichol, Eric Peng, Don Schneider, Mark SubbaRao, Christy Tremonti, & Donald G. York.* 587, 55 (2003)

Detection of Nine M8.0-L0.5 Binaries: The Very Low-Mass Binary Population and Its Implications for Brown Dwarf and Very Low Mass Star Formation. *Laird M. Close, Nick Siegler, Melanie Freed, & Beth Biller.* 587, 407 (2003)

Ejection of a Low-Mass Star in a Young Stellar System in Taurus. *Laurent Loinard, Luis F. Rodríguez, & Monica I. Rodríguez.* 587, L47 (2003)

Resolution of Distance Ambiguities of Inner Galaxy Massive Star Formation Regions. I. *C. Watson, E. Araya, M. Sewilo, E. Churchwell, P. Hofner, & S. Kurtz.* 587, 714 (2003)

A Triple Radio Continuum Source Associated with IRAS 16547−4247: A Collimated Stellar Wind Emanating from a Massive Protostar. *Guido Garay, Kate J. Brooks, Diego Mardones, & Ray P. Norris.* 587, 739 (2003)

Radiative Relaxation and Isomeric Branching of Highly Excited H/C/N: The Importance of Delocalized Vibrational States. *Troy Barger, Alec M. Wodtke, & Joel M. Bowman.* 587, 841 (2003)

Numerous Proplyd Candidates in the Harsh Environment of the Carina Nebula. *Nathan Smith, John Bally, & Jon A. Morse.* 587, L105 (2003)

Evidence for Grain Growth in the Protostellar Disks of Orion. *R. Y. Shuping, John Bally, Mark Morris, & Henry Throop.* 587, L109 (2003)

Precise Millimeter-Wave Laboratory Frequences for CS and $C^{34}S$. *C. A. Gottlieb, P. C. Myers, & P. Thaddeus.* 588, 655 (2003)

Three-dimensional Simulations of the Chemical and Dynamical Evolution of the Galactic Bulge. *Naohito Nakasato & Ken'ichi Nomoto.* 588, 842 (2003)

A Coupled Dynamical and Chemical Model of Starless Cores of Magnetized Molecular Clouds. II. Chemical Differentiation. *V. I. Shematovich, D. S. Wiebe, B. M. Shustov, & Zhi-Yun Li.* 588, 894 (2003)

Magnetic Structure of a Dark Bok Globule. *Jacques P. Vallée, Jane S. Greaves, & Jason D. Fiege.* 588, 910 (2003)

Five Star-forming Cores in the Galactic Ring Survey: A Mid-Infrared Study. *Kathleen E. Kraemer, James M. Jackson, Marc Kassis, Lynne K. Deutsch, Joseph L. Hora, Robert Simon, William F. Hoffmann, G. G. Fazio, Aditya Dayal, T. M. Bania, Dan P. Clemens, & Mark H. Heyer.* 588, 918 (2003)

Was the Universe Reionized by Massive Metal-free Stars? *J. Stuart B. Wyithe & Abraham Loeb.* 588, L69 (2003)

The Detectability of the First Stars and Their Cluster Enrichment Signatures. *Evan Scannapieco, Raffaella Schneider, & Andrea Ferrara.* 589, 35 (2003)

Observations of Water Masers and Radio Continuum Emission in AFGL 2591. *Miguel A. Trinidad, Salvador Curiel, Jorge Cantó, Paola D'Alessio, Luis F. Rodríguez, José M. Torrelles, José F. Gómez, Nimesh Patel, & Paul T. P. Ho.* 589, 386 (2003)

Formation of the First Stars by Accretion. *Kazuyuki Omukai & Francesco Palla.* 589, 677 (2003)

A Turbulent Origin for Flocculent Spiral Structure in Galaxies. *Bruce G. Elmegreen, Debra Meloy Elmegreen, & Samuel N. Leitner.* 590, 271 (2003)

Adaptive Optics Spectroscopy of the [Fe II] Outflow from DG Tauri. *Tae-Soo Pyo, Naoto Kobayashi, Masahiko Hayashi, Hiroshi Terada, Miwa Goto, Hideki Takami, Naruhisa Takato, Wolfgang Gaessler, Tomonori Usuda, Takuya Yamashita, Alan T. Tokunaga, Yutaka Hayano, Yukiko Kamata, Masanori Iye, & Yosuke Minowa.* 590, 340 (2003)

New Low-Mass Members of the Taurus Star-forming Region. *K. L. Luhman, Cesar Briceno, John R. Stauffer, Lee Hartmann, D. Barrado y Navascues, & Nelson Caldwell.* 590, 348 (2003)

On the Origin of the Global Schmidt Law of Star Formation. *Andrey V. Kravtsov.* 590, L1 (2003)

Stellar Disk in the Galactic Center: A Remnant of a Dense Accretion Disk? *Yuri Levin & Andrei M. Beloborodov.* 590, L33 (2003)

Warm Molecular Hydrogen and Ionized Neon in the HH 2 Outflow. *B. LeFloch, J. Cernicharo, S. Cabrit, A. Noriega-Crespo, A. Moro-Martín, & D. Cesarsky.* 590, L41 (2003)

NGC 7538S—a High-Mass Protostar with a Massive Rotating Disk. *Göran Sandell, Melvyn Wright, & James R. Forster.* 590, L45 (2003)

Interaction between the Outflow and the Core in IRAM 04191+1522. *Shigehisa Takakuwa, Nagayoshi Ohashi, & Naomi Hirano.* 590, 932 (2003)

The Thermal Regulation of Gravitational Instabilities in Protoplanetary Disks. *Brian K. Pickett, Annie C. Mejía, Richard H. Durisen, Patrick M. Cassen, Donald K. Berry, & Robert P. Link.* 590, 1060 (2003)

Locating the Launching Region of T Tauri Winds: The Case of DG Tauri. *Jeffrey M. Anderson, Zhi-Yun Li, Ruben Krasnopolsky, & Roger D. Blandford.* 590, L107 (2003)

Hα Spectroscopy of Galaxies at $z > 2$: Kinematics and Star Formation. *Dawn K. Erb, Alice E. Shapley, Charles C. Steidel, Max Pettini, Kurt L. Adelberger, Matthew P. Hunt, Alan F. M. Moorwood, & Jean-Gabriel Cuby.* 591, 101 (2003)

The Spatial Distribution of Fluorescent H_2 Emission near T Tauri. *José Saucedo, Nuria Calvet, Lee Hartmann, & John Raymond.* 591, 275 (2003)

On the Mass-Ratio Distribution of Spectroscopic Binaries. *Dorit Goldberg, Tsevi Mazeh, & David W. Latham.* 591, 397 (2003)

Early Structure Formation and Reionization in a Warm Dark Matter Cosmology. *Naoki Yoshida, Aaron Sokasian, Lars Hernquist, & Volker Springel.* 591, L1 (2003)

The Implications of *Wilkinson Microwave Anisotropy Probe* Observations for Population III Star Formation Processes. *Renyue Cen.* 591, L5 (2003)

Spatial Analysis of the Hα Emission in the Local Star-forming UCM Galaxies. *Pablo G. Pérez-González, Jaime Zamorano, Jesús Gallego, Alfonso Aragón-Salamanca, & Armando Gil de Paz.* 591, 827 (2003)

High-Resolution Imaging of CO Outflows in OMC-2 and OMC-3. *Jonathan P. Williams, R. L. Plambeck, & Mark H. Heyer.* 591, 1025 (2003)

Infrared Photometry of Starless Dense Cores. *D. C. Murphy & P. C. Myers.* 591, 1034 (2003)

Two-dimensional Radiative Transfer in Protostellar Envelopes. I. Effects of Geometry on Class I Sources. *Barbara A. Whitney, Kenneth Wood, J. E. Bjorkman, & Michael J. Wolff.* 591, 1049 (2003)

Star Formation and the Interstellar Medium in Four Dwarf Irregular Galaxies. *L. M. Young, L. van Zee, K. Y. Lo, R. C. Dohm-Palmer, & Michelle E. Beierle.* 592, 111 (2003)

Infrared Space Observatory Long-Wavelength Spectrometer Spectroscopy of Star-forming Regions in M33. *S. J. U. Higdon, J. L. Higdon, J. M. van der Hulst, & G. J. Stacey.* 592, 161 (2003)

Neutral Hydrogen Associated with NGC 7129. *H. E. Matthews, C. R. Purton, R. S. Roger, P. E. Dewdney, & G. F. Mitchell.* 592, 176 (2003)

Dynamic Cores in Hydrostatic Disguise. *Javier Ballesteros-Paredes, Ralf S. Klessen, & Enrique Vázquez-Semadeni.* 592, 188 (2003)

Analysis of Clumps in Molecular Cloud Models: Mass Spectrum, Shapes, Alignment, and Rotation. *Charles F. Gammie, Yen-Ting Lin, James M. Stone, & Eve C. Ostriker.* 592, 203 (2003)

High-Latitude Molecular Clouds in an H I Filament toward the MBM 53, 54, and 55 Complex: Existence of an H_2 Cloud with Low CO Intensity. *H. Yamamoto, T. Onishi, A. Mizuno, & Y. Fukui.* 592, 217 (2003)

Envelope Emission in Young Stellar Systems: A Subarcsecond Survey of Circumstellar Structure. *Leslie W. Looney, Lee G. Mundy, & W. J. Welch.* 592, 255 (2003)

Evidence for a T Tauri Phase in Young Brown Dwarfs. *Ray Jayawardhana, Subhanjoy Mohanty, & Gibor Basri.* 592, 282 (2003)

The Role of Helium Stars in the Formation of Double Neutron Stars. *N. Ivanova, K. Belczynski, V. Kalogera, F. A. Rasio, & R. E. Taam.* 592, 475 (2003)

Simulations of Early Structure Formation: Primordial Gas Clouds. *Naoki Yoshida, Tom Abel, Lars Hernquist, & Naoshi Sugiyama.* 592, 645 (2003)

Giant Lyα Nebulae Associated with High-Redshift Radio Galaxies. *Michiel Reuland, Wil van Breugel, Huub Röttgering, Wim de Vries, S. A. Stanford, Arjun Dey, Mark Lacy, Joss Bland-Hawthorn, Michael Dopita, & George Miley.* 592, 755 (2003)

Sagittarius A* Companion S0-2: A Probe of Very High Mass Star Formation. *Andrew Gould & Alice C. Quillen.* 592, 935 (2003)

The Formation of Stellar Clusters in Turbulent Molecular Clouds: Effects of the Equation of State. *Yuexing Li, Ralf S. Klessen, & Mordecai-Mark Mac Low.* 592, 975 (2003)

Indications of Inflow Motions in Regions Forming Massive Stars. *Neal J. Evans II & Jingwen Wu.* 592, L79 (2003)

A Turbulent Origin for Flocculent Spiral Structure in Galaxies. II. Observations and Models of M33. *Bruce G. Elmegreen, Samuel N. Leitner, Debra Meloy Elmegreen, & Jean-Charles Cuillandre.* 593, 333 (2003)

Gravitational Collapse of Filamentary Magnetized Molecular Clouds. *David A. Tilley & Ralph E. Pudritz.* 593, 426 (2003)

Blowout from IC 1396N: The Emergence of Herbig-Haro Flows from a Cloud Core. *Bo Reipurth, Tina Armond, Alex Raga, & John Bally.* 593, L47 (2003)

The Hot Core around the Low-Mass Protostar IRAS 16293−2422: Scoundrels Rule! *S. Cazaux, A. G. G. M. Tielens, C. Ceccarelli, A. Castets, V. Wakelam, E. Caux, B. Parise, & D. Teyssier.* 593, L51 (2003)

First Detection of Millimeter Dust Emission from Brown Dwarf Disks. *R. Klein, D. Apai, I. Pascucci, Th. Henning, & L. B. F. M. Waters.* 593, L57 (2003)

Molecular Evolution in Collapsing Prestellar Cores. II. The Effect of Grain-Surface Reactions. *Yuri Aikawa, Nagayoshi Ohashi, & Eric Herbst.* 593, 906 (2003)

A Class of Interstellar OH Masers Associated with Protostellar Outflows. *Alice L. Argon, Mark J. Reid, & Karl M. Menten.* 593, 925 (2003)

A Census of the Young Cluster IC 348. *K. L. Luhman, John R. Stauffer, A. A. Muench, G. H. Rieke, E. A. Lada, J. Bouvier, & C. J. Lada.* 593, 1093 (2003)

Indications for Grain Growth and Mass Decrease in Cold Dust Disks around Classical T Tauri Stars in the MBM 12 Young Association. *Michiel R. Hogerheijde, Doug Johnstone, Isamu Matsuyama, Ray Jayawardhana, & James Muzerolle.* 593, L101 (2003)

Spectroscopic Estimate of Surface Gravity for a Planetary Member in the σ Orionis Cluster. *E. L. Martín & M. R. Zapatero Osorio.* 593, L113 (2003)

Binary and Multiple Star Formation in Magnetic Clouds: Bar Growth and Fragmentation. *Fumitaka Nakamura & Zhi-Yun Li.* 594, 363 (2003)

The Stellar Cusp around the Supermassive Black Hole in the Galactic Center. *R. Genzel, R. Schödel, T. Ott, F. Eisenhauer, R. Hofmann, M. Lehnert, A. Eckart, T. Alexander, A. Sternberg, R. Lenzen, Y. Clénet, F. Lacombe, D. Rouan, A. Renzini, & L. E. Tacconi-Garman.* 594, 812 (2003)

Magnetic Field Morphology of Orion IRc2 from 86 GHz SiO Maser Polarization Images. *R. L. Plambeck, M. C. H. Wright, & R. Rao.* 594, 911 (2003)

A Parsec-Scale Flow Associated with the IRAS 16547−4247 Radio Jet. *Kate J. Brooks, Guido Garay, Diego Mardones, & Leonardo Bronfman.* 594, L131 (2003)

High Angular Resolution, Sensitive CS J = 2–1 and J = 3–2 Imaging of the Protostar L1551 NE: Evidence for Outflow-Triggered Star Formation? *Sozo Yokogawa, Yoshimi Kitamura, Munetake Momose, & Ryohei Kawabe.* 595, 266 (2003)

Linear Polarization Observations of Water Masers in W3 IRS 5. *Hiroshi Imai, Shinji Horiuchi, Shuji Deguchi, & Osamu Kameya.* 595, 285 (2003)

X-Ray Modeling of Very Young Early-Type Stars in the Orion Trapezium: Signatures of Magnetically Confined Plasmas and Evolutionary Implications. *N. S. Schulz, C. Canizares, D. Huenemoerder, & K. Tibbets.* 595, 365 (2003)

Magnetocentrifugal Launching of Jets from Accretion Disks. II. Inner Disk-driven Winds. *Ruben Krasnopolsky, Zhi-Yun Li, & Roger D. Blandford.* 595, 631 (2003)

Triggered Star Formation in the W5 H II Region. *J. L. Karr & P. G. Martin.* 595, 900 (2003)

Fragmentation of a Molecular Cloud Core versus Fragmentation of the Massive Protoplanetary Disk in the Main Accretion Phase. *Tomoaki Matsumoto & Tomoyuki Hanawa.* 595, 913 (2003)

Molecular Counterparts of Ultracompact H II Regions with Extended Envelopes. *Kee-Tae Kim & Bon-Chul Koo.* 596, 362 (2003)

Disk Properties and Density Structure of the Star-Forming Dense Core B335. *Daniel W. A. Harvey, David J. Wilner, Philip C. Myers, & Mario Tafalla.* 596, 383 (2003)

Detection of a Near-Infrared Counterpart to the Massive Protostar G192.16−3.82. *Rémy Indebetouw, Christer Watson, Kelsey E. Johnson, Barbara Whitney, & Ed Churchwell.* 596, L83 (2003)

Massive Star Formation in a Gravitationally Lensed H II Galaxy at z = 3.357. *R. A. E. Fosbury, M. Villar-Martín, A. Humphrey, M. Lombardi, P. Rosati, D. Stern, R. N. Hook, B. P. Holden, S. A. Stanford, G. K. Squires, M. Rauch, & W. L. W. Sargent.* 596, 797 (2003)

Star Formation and Feedback in Dwarf Galaxies. *Shawfeng Dong, D. N. C. Lin, & S. D. Murray.* 596, 930 (2003)

Kinematics of Ultracompact H II Regions Revealed: High Spatial and Spectral Resolution Mapping of the 12.8 Micron [Ne II] Line in Monoceros R2. *D. T. Jaffe, Q. Zhu, J. H. Lacy, & M. Richter.* 596, 1053 (2003)

A Near-Infrared Study of the Star-Forming Region S269. *Zhibo Jiang, Yongquiang Yao, Ji Yang, Daisuke Baba, Daisuke Kato, Mikio Kurita, Chie Nagashima, Tetsuya Nagata, Takahiro Nagayama, Yasushi Nakajima, Miki Ishii, Motohide Tamura, & Koji Sugitani.* 596, 1064 (2003)

The First Supernova Explosions in the Universe. *Volker Bromm, Naoki Yoshida, & Lars Hernquist.* 596, L135 (2003)

The Metallicity of Pregalactic Globular Clusters: The Observational Consequences of the First Stars. *Michael A. Beasley, Daisuke Kawata, Frazer R. Pearce, Duncan A. Forbes, & Brad K. Gibson.* 596, L187 (2003)

The High Angular Resolution Measurement of Ion and Neutral Spectra as a Probe of the Magnetic Field Structure in DR 21 (OH). *Shih-Ping Lai, T. Velusamy, & W. D. Langer.* 596, L239 (2003)

The Environment of Active Galactic Nuclei in the Sloan Digital Sky Survey. *Christopher J. Miller, Robert C. Nichol, Percy L. Gómez, Andrew M. Hopkins, & Mariangela Bernardi.* 597, 142 (2003)

Inner Structure of Starless Core L694-2 Derived from Millimeter-Wave Interferometry. *Daniel W. A. Harvey, David J. Wilner, Philip C. Myers, & Mario Tafalla.* 597, 424 (2003)

High-Resolution Continuum Imaging at 1.3 and 0.7 Centimeters of the W3 IRS 5 Region. *T. L. Wilson, D. A. Boboltz, R. A. Gaume, & S. T. Megeath.* 597, 434 (2003)

Using Narrowband Photometry to Detect Young Brown Dwarfs in IC 348. *A. K. Mainzer & Ian S. McLean.* 597, 555 (2003)

The Spectral Energy Distributions of Infant Super–Star Clusters in Henize 2-10 from 7 Millimeters to 6 Centimeters. *Kelsey E. Johnson & Henry A. Kobulnicky.* 597, 923 (2003)

Dense Molecular Clumps in the Orion Bar Photon-dominated Region. *D. C. Lis & P. Schilke.* 597, L145 (2003)

Unveiling the Inner Disk Structure of T Tauri Stars. *James Muzerolle, Nuria Calvet, Lee Hartmann, & Paola D'Alessio.* 597, L149 (2003)

Detection of Reactive Ions in the Ultracompact H II Regions Monoceros R2 and G29.96−0.02. *J. R. Rizzo, A. Fuente, A. Rodríguez-Franco, & S. García-Burillo.* 597, L153 (2003)

A Deep *Chandra* X-Ray Observation of the Embedded Young Cluster in NGC 2024. *Stephen Skinner, Marc Gagné, & Emily Belzer.* 598, 375 (2003)

Interferometric Mapping of Magnetic Fields in Star-Forming Regions. III. Dust and CO Polarization in DR 21(OH). *Shih-Ping Lai, José M. Girart, & Richard M. Crutcher.* 598, 392 (2003)

Mid-Infrared Imaging of the Post–Asymptotic Giant Branch Star AC Herculis with the Multiple Mirror Telescope Adaptive Optics System. *Laird M. Close, Beth Biller, William F. Hoffman, Phil M. Hinz, John H. Bieging, Francois Wildi, Michael Lloyd-Hart, Guido Brusa, Don Fisher, Doug Miller, & Roger Angel.* 598, L35 (2003)

Hubble Space Telescope Observations of Three Very Young Star Clusters in the Small Magellanic Cloud. *Letizia Stanghellini, Eva Villaver, Richard A. Shaw, & Max Mutchler.* 598, 1000 (2003)

Galactic-Field Initial Mass Functions of Massive Stars. *Pavel Kroupa & Carsten Weidner.* 598, 1076 (2003)

Two-dimensional Radiative Transfer in Protostellar Envelopes. II. An Evolutionary Sequence. *Barbara A. Whitney, Kenneth Wood, J. E. Bjorkman, & Martin Cohen.* 598, 1079 (2003)

A Cluster of Compact Radio Sources in NGC 2024 (Orion B). *Luis F. Rodríguez, Yolanda Gómez, & Bo Reipurth.* 598, 1100 (2003)

A Ring-Shaped Embedded Young Stellar (Proto)Cluster. *M. S. Nanda Kumar, D. K. Ojha, & C. J. Davis.* 598, 1107 (2003)

Envelope Structure of Starless Core L694-2 Derived from a Near-Infrared Extinction Map. *Daniel W. A. Harvey, David J. Wilner, Charles J. Lada, Philip C. Myers, & Joao F. Alves.* 598, 1112 (2003)

A Search for Mid-Infrared Emission from Hot Molecular Core Candidates. *J. M. De Buizer, J. T. Radomski, C. M. Telesco, & R. K. Piña.* 598, 1127 (2003)

A Giant Outburst at Millimeter Wavelengths in the Orion Nebula. *Geoffrey C. Bower, Richard L. Plambeck, Alberto Bolatto, Nate McCrady, James R. Graham, Imke de Pater, Michael C. Liu, & Frederick K. Baganoff.* 598, 1140 (2003)

Evidence for Evolution of the Outflow Collimation in Very Young Stellar Objects. *J. M. Torrelles, N. A. Patel, G. Anglada, J. F. Gómez, P. T. P. Ho, L. Lara, A. Alberdi, J. Cantó, S. Curiel, G. Garay, & L. F. Rodríguez.* 598, L115 (2003)

The Nature of Starburst Activity in M82. *N. M. Förster Schreiber, R. Genzel, D. Lutz, & A. Sternberg.* 599, 193 (2003)

NGC 2264 IRS 1: The Central Engine and Its Cavity. *K. Schreyer, B. Stecklum, H. Linz, & Th. Henning.* 599, 334 (2003)

Collapse of Magnetized Singular Isothermal Toroids. I. The Nonrotating Case. *Anthony Allen, Frank H. Shu, & Zhi-Yun Li.* 599, 351 (2003)

Collapse of Magnetized Singular Isothermal Toroids. II. Rotation and Magnetic Braking. *Anthony Allen, Zhi-Yun Li, & Frank H. Shu.* 599, 363 (2003)

High-Resolution Images of Orbital Motion in the Trapezium Cluster: First Scientific Results from the Multiple Mirror Telescope Deformable Secondary Mirror Adaptive Optics System. *Laird M. Close, Francois Wildi, Michael Lloyd-Hart, Guido Brusa, Don Fisher, Doug Miller, Armando Riccardi, Piero Salinari, Donald McCarthy, Roger Angel, Rich Allen, H. M. Martin, Richard G. Sosa, Manny Montoya, Matt Rademacher, Mario Rascon, Dylan Curley, Nick Siegler, & Wolfgang J. Duschl.* 599, 537 (2003)

He I λ10830 as a Probe of Winds in Accreting Young Stars. *Suzan Edwards, William Fischer, John Kwan, Lynne Hillenbrand, & A. K. Dupree.* 599, L41 (2003)

The Mass Spectrum of Metal-free Stars Resulting from Photodissociation Feedback: A Scenario for the Formation of Low-Mass Population III Stars. *Kazuyuki Omukai & Yuzuru Yoshii.* 599, 746 (2003)

Star Formation Rate Indicators in the Sloan Digital Sky Survey. *A. M. Hopkins, C. J. Miller, R. C. Nichol, A. J. Connolly, M. Bernardi, P. L. Gómez, T. Goto, C. A. Tremonti, J. Brinkmann, Ž. Ivezić, & D. Q. Lamb.* 599, 971 (2003)

The Mass Function of Supergiant Molecular Complexes and Implications for Forming Young Massive Star Clusters in the Antennae (NGC 4038/4039). *Christine D. Wilson, Nicholas Scoville, Suzanne C. Madden, & Vassilis Charmandaris.* 599, 1049 (2003)

Magnetorotationally Driven Galactic Turbulence and the Formation of Giant Molecular Clouds. *Woong-Tae Kim, Eve C. Ostriker, & James M. Stone.* 599, 1157 (2003)

The Compact H II Region S88B: Excitation and Extinction. *Jennifer A. Goetz, Robert Gutermuth, Judith L. Pipher, William J. Forrest, & Eric M. Howard.* 599, 1173 (2003)

The Formation of Massive Stars by Accretion through Trapped Hypercompact H II Regions. *Eric Keto.* 599, 1196 (2003)

The ε Chamaeleontis Young Stellar Group and the Characterization of Sparse Stellar Clusters. *Eric D. Feigelson, Warrick A. Lawson, & Gordon P. Garmire.* 599, 1207 (2003)

The Mass Ratio Distribution in Main-Sequence Spectroscopic Binaries Measured by Infrared Spectroscopy. *T. Mazeh, M. Simon, L. Prato, B. Markus, & S. Zucker.* 599, 1344 (2003)

Discovery of a Candidate for the Central Star of the Ultracompact H II Region G5.89−0.39. *M. Feldt, E. Puga, R. Lenzen, Th. Henning, W. Brandner, B. Stecklum, A.-M. Lagrange, E. Gendron, & G. Rousset.* 599, L91 (2003)

ADEMIS: A Library of Evolutionary Models for Emission-Line Galaxies. I. Dust-free Models. *Gladis Margis C., Luc Binette, & Gustavo Bruzual A.* 149, 313 (2003)

A CS $J = 5 \rightarrow 4$ Mapping Survey Toward High-Mass Star-Forming Cores Associated with Water Masers. *Yancy L. Shirley, Neal J. Evans II, Kaisa E. Young, Claudia Knez, & Daniel T. Jaffe.* 149, 375 (2003)

STARS: FUNDAMENTAL PARAMETERS

System Parameters of DW Ursae Majoris. *S. Araujo-Betancor, C. Knigge, K. S. Long, D. W. Hoard, P. Szkody, B. Rogers, K. Krisciunas, V. S. Dhillon, R. I. Hynes, J. Patterson, & J. Kemp.* 583, 437 (2003)

Calculations of the Far-Wing Line Profiles of Sodium and Potassium in the Atmospheres of Substellar-Mass Objects. *Adam Burrows & Maxim Volobuyev.* 583, 985 (2003)

Quantitative Spectral Analysis of Early B-Type Supergiants in the Sculptor Galaxy NGC 300. *Miguel Alejandro Urbaneja, Aremio Herrero, Fabio Bresolin, Rolf-Peter Kudritzki, Wolfgang Gieren, & Joachim Puls.* 584, L73 (2003)

Discovery of an Ultracool Subdwarf: LSR 1425+7102, the First Star with Spectral Type sdM8.0. *Sébastien Lépine, Michael M. Shara, & R. Michael Rich.* 585, L69 (2003)

ι Cassiopeiae: Orbit, Masses, and Photometry from Adaptive Optics Imaging in the *I* and *H* Bands. *Jack Drummond, Scott Milster, Patrick Ryan, & Lewis C. Roberts, Jr.* 585, 1007 (2003)

Transition from L to T Dwarfs of the Color-Magnitude Diagram. *Takashi Tsuji & Tadashi Nakajima.* 585, L151 (2003)

Angular Radii of Stars via Microlensing. *B. Scott Gaudi, David S. Graff, & Cheongho Han.* 586, 451 (2003)

Binarity in Brown Dwarfs: T Dwarf Binaries Discovered with the *Hubble Space Telescope* Wide Field Planetary Camera 2. *Adam J. Burgasser, J. Davy Kirkpatrick, I. Neill Reid, Michael E. Brown, Cherie L. Miskey, & John E. Gizis.* 586, 512 (2003)

Cool Companions to White Dwarfs from the Two Micron All-Sky Survey Second Incremental Data Release. *Stefanie Wachter, D. W. Hoard, Kathryn H. Hansen, Rebecca E. Wilcox, Hilda M. Taylor, & Steven L. Finkelstein.* 586, 1356 (2003)

Fundamental Properties and Distances of Large Magellanic Cloud Eclipsing Binaries. IV. HV 5936. *E. L. Fitzpatrick, I. Ribas, E. F. Guinan, F. P. Maloney, & A. Claret.* 587, 685 (2003)

Determining the Inclination of the Rotation Axis of a Sun-like Star. *L. Gizon & S. K. Solanki.* 589, 1009 (2003)

Intrinsic Properties of the Young Stellar Object SU Aurigae. *L. E. DeWarf, J. F. Sepinsky, E. F. Guinan, I. Ribas, & I. Nadalin.* 590, 357 (2003)

On the Mass-Ratio Distribution of Spectroscopic Binaries. *Dorit Goldberg, Tsevi Mazeh, & David W. Latham.* 591, 397 (2003)

LSR 1610−0040: The First Early-Type L Subdwarf. *Sébastien Lépine, R. Michael Rich, & Michael M. Shara.* 591, L49 (2003)

The Nature of Overluminous F Stars Observed in a Radial-Velocity Survey. *R. F. Griffin & A. A. Suchkov.* 147, 103 (2003)

Sagittarius A* Companion S0-2: A Probe of Very High Mass Star Formation. *Andrew Gould & Alice C. Quillen.* 592, 935 (2003)

The Bursting Behavior of 4U 1728−34: The Parameters of a Neutron Star and the Geometry of a Neutron Star–Disk System. *Nickolai Shaposhnikov, Lev Titarchuk, & Frank Haberl.* 593, L35 (2003)

Gravity Indicators in the Near-Infrared Spectra of Brown Dwarfs. *N. I. Gorlova, M. R. Meyer, G. H. Rieke, & J. Liebert.* 593, 1074 (2003)

The Spectra of T Dwarfs. II. Red Optical Data. *Adam J. Burgasser, J. Davy Kirkpatrick, James Liebert, & Adam Burrows.* 594, 510 (2003)

Line Intensities and Molecular Opacities of the FeH $F\,^4\Delta_i$–$X\,^4\Delta_i$ Transition. *M. Dulick, C. W. Bauschlicher, Jr., Adam Burrows, C. M. Sharp, R. S. Ram, & Peter Bernath.* 594, 651 (2003)

Rotational Periods of Very Young Brown Dwarfs and Very Low-Mass Stars in Chamaeleon I. *V. Joergens, M. Fernández, J. M. Carpenter, & R. Neuhäuser.* 594, 971 (2003)

Stellar Hydrodynamics in Radiative Regions. *Patrick A. Young, Karen A. Knierman, Jane R. Rigby, & David Arnett.* 595, 1114 (2003)

Oxygen Abundances in Metal-poor Stars. *Jon P. Fulbright & Jennifer A. Johnson.* 595, 1154 (2003)

Quantitative Spectroscopy of O Stars at Low Metallicity: O Dwarfs in NGC 346. *J.-C. Bouret, T. Lanz, D. J. Hillier, S. R. Heap, I. Hubeny, D. J. Lennon, L. J. Smith, & C. J. Evans.* 595, 1182 (2003)

Stellar-Mass Black Holes in the Solar Neighborhood. *James R. Chisholm, Scott Dodelson, & Edward W. Kolb.* 596, 437 (2003)

Post–Asymptotic Giant Branch Evolution in the Large Megellanic Cloud: A Study of the Central Stars of Planetary Nebulae. *Eva Villaver, Letizia Stanghellini, & Richard A. Shaw.* 597, 298 (2003)

Ionizing Photon Emission Rates from O- and Early B-Type Stars and Clusters. *Amiel Sternberg, Tadziu L. Hoffmann, & A. W. A. Pauldrach.* 599, 1333 (2003)

The Mass Ratio Distribution in Main-Sequence Spectroscopic Binaries Measured by Infrared Spectroscopy. *T. Mazeh, M. Simon, L. Prato, B. Markus, & S. Zucker.* 599, 1344 (2003)

High-Resolution Infrared Spectroscopy of the Brown Dwarf ϵ Indi Ba. *Verne V. Smith, Takashi Tsuji, Kenneth H. Hinkle, Katia Cunha, Robert D. Blum, Jeff A. Valenti, Stephen T. Ridgway, Richard R. Joyce, & Peter Bernath.* 599, L107 (2003)

STARS: HERTZSPRUNG-RUSSELL DIAGRAM

Helium-Core White Dwarfs in Globular Clusters. *Brad M. S. Hansen, Vassiliki Kalogera, & Frederic A. Rasio.* 586, 1364 (2003)

The Optical Gravitational Lensing Experiment: Is Interstellar Extinction toward the Galactic Center Anomalous? *A. Udalski.* 590, 284 (2003)

STARS: HORIZONTAL-BRANCH

First Full Evolutionary Computation of the Helium Flash-induced Mixing in Population II Stars. *Santi Cassisi, Helmut Schlattl, Maurizio Salaris, & Achim Weiss.* 582, L43 (2003)

Main-Sequence Stellar Eruption Model for V838 Monocerotis. *Noam Soker & Romuald Tylenda.* 582, L105 (2003)

Discovery of a New Class of Pulsating Stars: Gravity-Mode Pulsators among Subdwarf B Stars. *E. M. Green, G. Fontaine, M. D. Reed, K. Callerame, I. R. Seitenzahl, B. A. White, E. A. Hyde, R. Østensen, O. Cordes, P. Brassard, S. Falter, E. J. Jeffery, S. Dreizler, S. L. Schuh, M. Giovanni, H. Edelmann, J. Rigby, & A. Bronowska.* 583, L31 (2003)

Blue Horizontal-Branch Stars in Old, Metal-rich Stellar Systems. *Ruth C. Peterson, Bruce W. Carney, Ben Dorman, Elizabeth M. Green, Wayne Landsman, James Liebert, Robert W. O'Connell, & Robert T. Rood.* 588, 299 (2003)

The Initial Helium Content of Galactic Globular Cluster Stars from the *R*-Parameter: Comparison with the Cosmic Microwave Background Constraint. *Santi Cassisi, Maurizio Salaris, & Alan W. Irwin.* 588, 862 (2003)

RR Lyrae Stars in Galactic Globular Clusters. II. A Theoretical Approach to Variables in M3. *M. Marconi, F. Caputo, M. Di Criscienzo, & M. Castellani.* 596, 299 (2003)

A Driving Mechanism for the Newly Discovered Long-Period Pulsating Subdwarf B Stars. *G. Fontaine, P. Brassard, S. Charpinet, E. M. Green, P. Chayer, M. Billères, & S. K. Randall.* 597, 518 (2003)

Blue Horizontal-Branch Stars in the Sagittarius Dwarf Spheroidal Galaxy. *Lorenzo Monaco, Michele Bellazzini, Francesco R. Ferraro, & Elena Pancino.* 597, L25 (2003)

Detection of the Evolutionary Stages of Variables in M3. *J. Jurcsik, J. M. Benko, G. A. Bakos, B. Szeidl, & R . Szabó.* 597, L49 (2003)

The MACHO Project Large Magellanic Cloud Variable Star Inventory. XI. Frequency Analysis of the Fundamental Mode RR Lyrae Stars. *C. Alcock, D. R. Alves, A. Becker, D. Bennet, K. H. Cook, A. Drake, K. Freeman, M. Geha, K. Griest, G. Kovács, M. Lehner, S. Marshall, D. Minniti, C. Nelson, B. Peterson, P. Popowski, M. Pratt, P. Quinn, A. Rodgers, C. Stubbs, W. Sutherland, T. Vandehei, & D. L. Welch.* 598, 597 (2003)

Chemical Abundances and Rotation Velocities of Blue Horizontal-Branch Stars in Six Globular Clusters. *Bradford B. Behr.* 149, 67 (2003)

Rotation Velocities of Red and Blue Field Horizontal-Branch Stars. *Bradford B. Behr.* 149, 101 (2003)

STARS: IMAGING

Search for the Optical Counterpart of the Nearby Pulsar J0108−1431. *Roberto P. Mignani, Richard N. Manchester, & George G. Pavlov.* 582, 978 (2003)

Adaptive Optics Observations of Vega: Eight Detected Sources and Upper Limits to Planetary-Mass Companions. *Stanimir A. Metchev, Lynne A. Hillenbrand, & Russel J. White.* 582, 1102 (2003)

Very Long Baseline Interferometry Imaging of the RS Canum Venaticorum Binary Star System HR 5110. *R. R. Ransom, N. Bartel, M. F. Bietenholz, M. I. Ratner, D. E. Lebach, I. I. Shapiro, & J.-F. Lestrade.* 587, 390 (2003)

STARS: INDIVIDUAL

Constellation Name: υ Andromedae

Could the 55 Cancri Planetary System Really Be in the 3:1 Mean Motion Resonance? *Jianghui Ji, Hiroshi Kinoshita, Lin Liu, & Guangyu Li.* 585, L139 (2003)

Eccentricity Evolution of Extrasolar Multiple Planetary Systems Due to the Depletion of Nascent Protostellar Disks. *M. Nagasawa, D. N. C. Lin, & S. Ida.* 586, 1374 (2003)

Constellation Name: VY Aquarii

Hubble Space Telescope STIS Spectroscopy of the White Dwarfs in the Ultrashort-Period Dwarf Novae VY Aquarii and WX Ceti. *Edward M. Sion, Paula Szkody, Fuhua Cheng, Boris T. Gänsicke, & Steve B. Howell.* 583, 907 (2003)

Constellation Name: Aquila X-1

Hard X-Ray Flares Preceding Soft X-Ray Outbursts in Aquila X-1: A Link between Neutron Star and Black Hole Transitions. *Wenfei Yu, Marc Klein-Wolt, Rob Fender, & Michiel van der Klis.* 589, L33 (2003)

The Evolution of the High-Energy Tail in the Quiescent Spectrum of the Soft X-Ray Transient Aquila X-1. *S. Campana & L. Stella.* 597, 474 (2003)

Constellation Name: 20 Aquilae

An Ultrahigh-Resolution Survey of the Interstellar ^{7}Li/^{6}Li Isotope Ratio in the Solar Neighborhood. *David C. Knauth, S. R. Federman, & David L. Lambert.* 586, 268 (2003)

Constellation Name: CI Aquilae

Revised Analysis of the Supersoft X-Ray Phase, Helium Enrichment, and Turnoff Time in the 2000 Outburst of the Recurrent Nova CI Aquilae. *Izumi Hachisu, Mariko Kato, & Bradley E. Schaefer.* 584, 1008 (2003)

A New Clue to the Transition Mechanism between Optical High and Low States of the Supersoft X-Ray Source RX J0513.9−6951, Implied from the Recurrent Nova CI Aquilae 2000 Outburst Model. *Izumi Hachisu & Mariko Kato.* 588, 1003 (2003)

Constellation Name: V1432 Aquilae

X-Ray Variability of the Magnetic Cataclysmic Variable V1432 Aquilae and the Seyfert Galaxy NGC 6814. *K. Mukai, C. Hellier, G. Madejski, J. Patterson, & D. R. Skillman.* 597, 479 (2003)

Constellation Name: V1494 Aquilae

The Extraordinary X-Ray Light Curve of the Classical Nova V1494 Aquilae (1999 No. 2) in Outburst: The Discovery of Pulsations and a "Burst." *Jeremy J. Drake, R. Mark Wagner, Sumner Starrfield, Yousaf Butt, Joachim Krautter, H. E. Bond, M. Della Valle, R. D. Gehrz, Charles E. Woodward, A. Evans, M. Orio, P. Hauschildt, M. Hernanz, K. Mukai, & J. W. Truran.* 584, 448 (2003)

Constellation Name: UX Arietis

Statistical Analysis of 5 Year Continuous Radio Flare Data from β Persei, V711 Tauri, δ Librae, and UX Arietis. *Mercedes T. Richards, Elizabeth B. Waltman, Frank D. Ghigo, & Donald St. P. Richards.* 147, 337 (2003)

Constellation Name: AB Aurigae

Near-Infrared Interferometric Measurements of Herbig Ae/Be Stars. *J. A. Eisner, B. F. Lane, R. L. Akeson, L. A. Hillenbrand, & A. I. Sargent.* 588, 360 (2003)

Intrinsic Properties of the Young Stellar Object SU Aurigae. *L. E. DeWarf, J. F. Sepinsky, E. F. Guinan, I. Ribas, & I. Nadalin.* 590, 357 (2003)

The Mid-Infrared–emitting Dust around AB Aurigae. *C. H. Chen & M. Jura.* 591, 267 (2003)

Constellation Name: RW Aurigae

Hubble Space Telescope STIS Spectrum of RW Aurigae A: Evidence for an Ionized Beltlike Structure and Mass Ejection in Timescales of a Few Hours. *Ana I. Gomez de Castro & Eva Verdugo.* 597, 443 (2003)

Constellation Name: SU Aurigae

Intrinsic Properties of the Young Stellar Object SU Aurigae. *L. E. DeWarf, J. F. Sepinsky, E. F. Guinan, I. Ribas, & I. Nadalin.* 590, 357 (2003)

Constellation Name: α Bootis

Oscillations in Arcturus from *WIRE* Photometry. *Alon Retter, Timothy R. Bedding, Derek L. Buzasi, Hans Kjeldsen, & László L. Kiss.* 591, L151 (2003)

Atmospheric Models of Red Giants with Massive-Scale Non–Local Thermodynamic Equilibrium. *C. I. Short & P. H. Hauschildt.* 596, 501 (2003)

Constellation Name: τ Bootis

The Impact of Pollution on Stellar Evolution Models. *Aaron Dotter & Brian Chaboyer.* 596, 496 (2003)

Constellation Name: TX Camelopardalis

A Movie of a Star: Multiepoch Very Long Baseline Array Imaging of the SiO Masers toward the Mira Variable TX Cam. *P. J. Diamond & A. J. Kemball.* 599, 1372 (2003)

Constellation Name: 55 Cancri

Could the 55 Cancri Planetary System Really Be in the 3:1 Mean Motion Resonance? *Jianghui Ji, Hiroshi Kinoshita, Lin Liu, & Guangyu Li.* 585, L139 (2003)

Detection of Close-In Extrasolar Giant Planets Using the Fourier-Kelvin Stellar Interferometer. *William C. Danchi, Drake Deming, Marc J. Kuchner, & Sara Seager.* 597, L57 (2003)

Constellation Name: BH Canum Venaticorum

Very Long Baseline Interferometry Imaging of the RS Canum Venaticorum Binary Star System HR 5110. *R. R. Ransom, N. Bartel, M. F. Bietenholz, M. I. Ratner, D. E. Lebach, I. I. Shapiro, & J.-F. Lestrade.* 587, 390 (2003)

Constellation Name: η Carinae

X-Ray Spectroscopy of η Carinae with *XMM-Newton*. *Maurice A. Leutenegger, Steven M. Kahn, & Gavin Ramsay.* 585, 1015 (2003)

Latitude-dependent Effects in the Stellar Wind of η Carinae. *Nathan Smith, Kris Davidson, Theodore R. Gull, Kazunori Ishibashi, & D. John Hillier.* 586, 432 (2003)

Accretion-Induced Collimated Fast Wind Model for η Carinae. *Noam Soker.* 597, 513 (2003)

Constellation Name: ι Cassiopeiae

ι Cassiopeiae: Orbit, Masses, and Photometry from Adaptive Optics Imaging in the *I* and *H* Bands. *Jack Drummond, Scott Milster, Patrick Ryan, & Lewis C. Roberts, Jr.* 585, 1007 (2003)

Constellation Name: γ Cephei A

A Planetary Companion to γ Cephei A. *Artie P. Hatzes, William D. Cochran, Michael Endl, Barbara McArthur, Diane B. Paulson, Gordon A. H. Walker, Bruce Campbell, & Stephenson Yang.* 599, 1383 (2003)

Constellation Name: τ Ceti

The Geometry of Resonant Signatures in Debris Disks with Planets. *Marc J. Kuchner & Matthew J. Holman.* 588, 1110 (2003)

Constellation Name: o Ceti

Interferometry on Mira in the Mid-Infrared: Cyclic Variability of the Continuum Diameter and the Effect of Spectral Lines on Apparent Size. *J. Weiner, D. D. S. Hale, & C. H. Townes.* 588, 1064 (2003)

Constellation Name: UV Ceti

Separating the X-Ray Emissions of UV Ceti A and B with *Chandra*. *Marc Audard, Manuel Güdel, & Stephen L. Skinner.* 589, 983 (2003)

Constellation Name: WW Ceti

Composite Accretion Disk and White Dwarf Model Analyses of the Quiescence of Dwarf Novae: EM Cygni, CZ Orionis, and WW Ceti. *Lisa Winter & Edward M. Sion.* 582, 352 (2003)

Constellation Name: WX Ceti

Hubble Space Telescope STIS Spectroscopy of the White Dwarfs in the Ultrashort-Period Dwarf Novae VY Aquarii and WX Ceti. *Edward M. Sion, Paula Szkody, Fuhua Cheng, Boris T. Gänsicke, & Steve B. Howell.* 583, 907 (2003)

Constellation Name: ZZ Ceti

Constraining the Evolution of ZZ Ceti. *Anjum S. Mukadem, S. O. Kepler, D. E. Winget, R. E. Nather, M. Kilic, F. Mullally, T. von Hippel, S. J. Kleinman, A. Nitta, J. A. Guzik, P. A. Bradley, J. Matthews, K. Sekiguchi, D. J. Sullivan, T. Sullivan, R. R. Shobbrook, P. Birch, X. J. Jiang, D. W. Xu, S. Joshi, B. N. Ashoka, P. Ibbetson, E. Leibowitz, E. O. Ofek, E. G. Meištas, R. Janulis, D. Ališauskas, R. Kalytis, G. Handler, D. Kilkenny, D. O'Donoghue, D. W. Kurtz, M. Müller, P. Moskalik, W. Ogłoza, S. Zoła, J. Krzesiński, F. Johannessen, J. M. Gonzalez-Perez, J. -E. Solheim, R. Silvotti, S. Bernabei, G. Vauclair, N. Dolez, J. N. Fu, M. Chevreton, M. Manteiga, O. Suárez, A. Ulla, M. S. Cunha, T. S. Metcalfe, A. Kanaan, L. Fraga, A. F. M. Costa, O. Giovannini, G. Fontaine, P. Bergeron, M. S. O'Brien, D. Sanwal, M. A. Wood, T. J. Ahrens, N. Silvestri, E. W. Klumpe, S. D. Kawaler, R. Riddle, M. D. Reed, & T. K. Watson.* 594, 961 (2003)

Constellation Name: Chamaeleon Hα 1

Rotational Periods of Very Young Brown Dwarfs and Very Low-Mass Stars in Chamaeleon I. *V. Joergens, M. Fernández, J. M. Carpenter, & R. Neuhäuser.* 594, 971 (2003)

Constellation Name: Chamaeleon Hα 2

Rotational Periods of Very Young Brown Dwarfs and Very Low-Mass Stars in Chamaeleon I. *V. Joergens, M. Fernández, J. M. Carpenter, & R. Neuhäuser.* 594, 971 (2003)

Constellation Name: Chamaeleon Hα 3

Rotational Periods of Very Young Brown Dwarfs and Very Low-Mass Stars in Chamaeleon I. *V. Joergens, M. Fernández, J. M. Carpenter, & R. Neuhäuser.* 594, 971 (2003)

Constellation Name: Chamaeleon Hα 4

Rotational Periods of Very Young Brown Dwarfs and Very Low-Mass Stars in Chamaeleon I. *V. Joergens, M. Fernández, J. M. Carpenter, & R. Neuhäuser.* 594, 971 (2003)

Constellation Name: Chamaeleon Hα 5

Rotational Periods of Very Young Brown Dwarfs and Very Low-Mass Stars in Chamaeleon I. *V. Joergens, M. Fernández, J. M. Carpenter, & R. Neuhäuser.* 594, 971 (2003)

Constellation Name: Chamaeleon Hα 6

Rotational Periods of Very Young Brown Dwarfs and Very Low-Mass Stars in Chamaeleon I. *V. Joergens, M. Fernández, J. M. Carpenter, & R. Neuhäuser.* 594, 971 (2003)

Constellation Name: Chamaeleon Hα 7

Rotational Periods of Very Young Brown Dwarfs and Very Low-Mass Stars in Chamaeleon I. *V. Joergens, M. Fernández, J. M. Carpenter, & R. Neuhäuser.* 594, 971 (2003)

Constellation Name: Chamaeleon Hα 8

Rotational Periods of Very Young Brown Dwarfs and Very Low-Mass Stars in Chamaeleon I. *V. Joergens, M. Fernández, J. M. Carpenter, & R. Neuhäuser.* 594, 971 (2003)

Constellation Name: Chamaeleon Hα 9

Rotational Periods of Very Young Brown Dwarfs and Very Low-Mass Stars in Chamaeleon I. *V. Joergens, M. Fernández, J. M. Carpenter, & R. Neuhäuser.* 594, 971 (2003)

Constellation Name: Chamaeleon Hα 10

Rotational Periods of Very Young Brown Dwarfs and Very Low-Mass Stars in Chamaeleon I. *V. Joergens, M. Fernández, J. M. Carpenter, & R. Neuhäuser.* 594, 971 (2003)

Constellation Name: Chamaeleon Hα 11

Rotational Periods of Very Young Brown Dwarfs and Very Low-Mass Stars in Chamaeleon I. *V. Joergens, M. Fernández, J. M. Carpenter, & R. Neuhäuser.* 594, 971 (2003)

Constellation Name: Chamaeleon Hα 12

Rotational Periods of Very Young Brown Dwarfs and Very Low-Mass Stars in Chamaeleon I. *V. Joergens, M. Fernández, J. M. Carpenter, & R. Neuhäuser.* 594, 971 (2003)

Constellation Name: ϵ Chamaeleontis

The ϵ Chamaeleontis Young Stellar Group and the Characterization of Sparse Stellar Clusters. *Eric D. Feigelson, Warrick A. Lawson, & Gordon P. Garmire.* 599, 1207 (2003)

Constellation Name: Circinus X-1

Evolution of Hard X-Ray Spectra along the Branches in Circinus X-1. *G. Q. Ding, J. L. Qu, & T. P. Li.* 596, L219 (2003)

Constellation Name: Cygnus X-1

Wind Accretion and State Transitions in Cygnus X-1. *D. R. Gies, C. T. Bolton, J. R. Thomson, W. Huang, M. V. McSwain, R. L. Riddle, Z. Wang, P. J. Wiita, D. W. Wingert, B. Csak, & L. L. Kiss.* 583, 424 (2003)

Correlated Radio:X-Ray Emission in the Hard States of Galactic Microquasars. *M. Choudhury, A. R. Rao, S. V. Vadawale, & A. K. Jain.* 593, 452 (2003)

Observations of Giant Outbursts from Cygnus X-1. *S. Golenetskii, R. Aptekar, D. Frederiks, E. Mazets, V. Palshin, K. Hurley, T. Cline, & B. Stern.* 596, 1113 (2003)

Constellation Name: Cygnus X-3

Doppler Modulation of X-Ray Lines in Cygnus X-3. *Michael J. Stark & Malinda Saia.* 587, L101 (2003)

Extended Emission from Cygnus X-3 Detected with *Chandra*. *W. A. Heindl, J. A. Tomsick, R. Wijnands, & D. M. Smith.* 588, L97 (2003)

Correlated Radio:X-Ray Emission in the Hard States of Galactic Microquasars. *M. Choudhury, A. R. Rao, S. V. Vadawale, & A. K. Jain.* 593, 452 (2003)

Constellation Name: χ Cygni

Asymptotic Giant Branch and Supergiant Stellar Diameters in the Mid-Infrared. *J. Weiner, D. D. S. Hale, & C. H. Townes.* 589, 976 (2003)

Constellation Name: CH Cygni

CH Cygni. I. Observational Evidence for a Disk-Jet Connection. *J. L. Sokoloski & S. J. Kenyon.* 584, 1021 (2003)

CH Cygni. II. Optical Flickering from an Unstable Disk. *J. L. Sokoloski & S. J. Kenyon.* 584, 1027 (2003)

Constellation Name: EM Cygni

Composite Accretion Disk and White Dwarf Model Analyses of the Quiescence of Dwarf Novae: EM Cygni, CZ Orionis, and WW Ceti. *Lisa Winter & Edward M. Sion.* 582, 352 (2003)

Constellation Name: EY Cygni

Anomalous Ultraviolet Line Flux Ratios in the Cataclysmic variables 1RXS J232953.9+062814, CE 315, BZ Ursae Majoris, and EY Cygni observed with the *Hubble Space Telescope* Space Telescope Imaging Spectrograph. *Boris T. Gänsicke, Paula Szkody, Domitilla de Martino, Klaus Beuermann, Knox S. Long, Edward M. Sion, Christian Knigge, Tom Marsh, & Ivan Hubeny.* 594, 443 (2003)

Constellation Name: V404 Cygni

Evidence for Optical Flares in Quiescent Soft X-Ray Transients. *C. Zurita, J. Casares, & T. Shahbaz.* 582, 369 (2003)

Constellation Name: V1016 Cygni

Raman-scattered He II λ6545 Line in the Symbiotic Star V1016 Cygni. *Hee-Won Lee, Young-Jong Sohn, Young Woon Kang, & Ho-Il Kim.* 598, 553 (2003)

Constellation Name: V1057 Cygni

High-Resolution Spectroscopy of FU Orionis Stars. *G. H. Herbig, P. P. Petrov, & R. Duemmler.* 595, 384 (2003)

Constellation Name: V1685 Cygni

Near-Infrared Interferometric Measurements of Herbig Ae/Be Stars. *J. A. Eisner, B. F. Lane, R. L. Akeson, L. A. Hillenbrand, & A. I. Sargent.* 588, 360 (2003)

Constellation Name: V1974 Cygni

The Scattered X-Ray Halo around Nova Cygni 1992: Testing a Model for Interstellar Dust. *B. T. Draine & Jonathan C. Tan.* 594, 347 (2003)

Constellation Name: V2274 Cygni

Near-Infrared Spectrophotometry and the CO Emission in V2274 Cygni (Nova Cygni 2001 No. 1). *Richard J. Rudy, William L. Dimpfl, David K. Lynch, S. Mazuk, Catherine C. Venturini, John C. Wilson, R. C. Puetter, & R. Brad Perry.* 596, 1229 (2003)

Constellation Name: 40 Eridani A

A Search for Lyα Emission from the Astrosphere of 40 Eridani A. *Brian E. Wood, Jeffrey L. Linsky, Hans-Reinhard Mueller, & Gary P. Zank.* 591, 1210 (2003)

Constellation Name: ϵ Eridani

The Geometry of Resonant Signatures in Debris Disks with Planets. *Marc J. Kuchner & Matthew J. Holman.* 588, 1110 (2003)

Deep Keck Adaptive Optics Searches for Extrasolar Planets in the Dust of ϵ Eridani and Vega. *Bruce A. Macintosh, E. E. Becklin, Denise Kaisler, Quinn Konopacky, & B. Zuckerman.* 594, 538 (2003)

Modeling the Infrared Emission from the ϵ Eridani Disk. *Aigen Li, J. I. Lunine, & G. J. Bendo.* 598, L51 (2003)

Constellation Name: ζ Geminorum

Theoretical Limb Darkening for Classical Cepheids. II. Corrections for the Geometric Baade-Wesselink Method. *Massimo Marengo, Margarita Karovska, Dimitar D. Sasselov, Costas Papaliolios, John T. Armstrong, & Tyler E. Nordgren.* 589, 968 (2003)

Constellation Name: α Herculis

Asymptotic Giant Branch and Supergiant Stellar Diameters in the Mid-Infrared. *J. Weiner, D. D. S. Hale, & C. H. Townes.* 589, 976 (2003)

Constellation Name: σ Herculis

The Low-Velocity Wind from the Circumstellar Matter around the B9 V Star σ Herculis. *C. H. Chen & M. Jura.* 582, 443 (2003)

Constellation Name: DQ Herculis

The Origin of Soft X-Rays in DQ Herculis. *K. Mukai, M. Still, & F. A. Ringwald.* 594, 428 (2003)

Constellation Name: EX Hydrae

Hubble Space Telescope Space Telescope Imaging Spectrograph Spectroscopy of the Intermediate Polar EX Hydrae. *Kunegunda E. Belle, Steve B. Howell, Edward M. Sion, Knox S. Long, & Paula Szkody.* 587, 373 (2003)

The Fe XXII I(11.92 Å)/I(11.77 Å) Density Diagnostic Applied to the *Chandra* High-Energy Transmission Grating Spectrum of EX Hydrae. *Christopher W. Mauche, Duane A. Liedahl, & Kevin B. Fournier.* 588, L101 (2003)

Constellation Name: TW Hydrae

ROSAT X-Ray Spectral Properties of Nearby Young Associations: TW Hydrae, Tucana-Horologium, and the β Pictoris Moving Group. *Joel H. Kastner, Lara Crigger, Margaret Rich, & David A. Weintraub.* 585, 878 (2003)

Detections of Rovibrational H_2 Emission from the Disks of T Tauri Stars. *Jeffrey S. Bary, David A. Weintraub, & Joel H. Kastner.* 586, 1136 (2003)

Disks around the Young Stars with TW Hydrae and HD 100546 Imaged at 3.4 Millimeters with the Australia Telescope Compact Array. *D. J. Wilner, T. L. Bourke, C. M. Wright, J. K. Jørgensen, E. F. van Dishoeck, & T. Wong.* 596, 597 (2003)

Constellation Name: WX Hydri

Chandra Observations of the Dwarf Nova WX Hydri in Quiescence. *Rosalba Perna, Jonathan McDowell, Kristen Menou, John Raymond, & Mikhail V. Medvedev.* 598, 545 (2003)

Constellation Name: ϵ Indi B

High-Resolution Infrared Spectroscopy of the Brown Dwarf ϵ Indi Ba. *Verne V. Smith, Takashi Tsuji, Kenneth H. Hinkle, Katia Cunha, Robert D. Blum, Jeff A. Valenti, Stephen T. Ridgway, Richard R. Joyce, & Peter Bernath.* 599, L107 (2003)

Constellation Name: AR Lacertae

The Coronae of AR Lacertae. *David P. Huenemoerder, Claude R. Canizares, Jeremy J. Drake, & Jorge Sanz-Forcada.* 595, 1131 (2003)

Constellation Name: AD Leonis

Are Coronae of Magnetically Active Stars Heated by Flares? II. Extreme Ultraviolet and X-Ray Flare Statistics and the Differential Emission Measure Distribution. *Manuel Güdel, Marc Audard, Vinay L. Kashyap, Jeremy J. Drake, & Edward F. Guinan.* 582, 423 (2003)

Multiwavelength Observations of Flares on AD Leonis. *Suzanne L. Hawley, Joel C. Allred, Christopher M. Johns-Krull, George H. Fisher, William P. Abbet, Ilya Alekseev, Stavros I. Avgoloupis, Susana E. Deustua, Alastair Gunn, John H. Seiradakis, Martin M. Sirk, & Jeff A. Valenti.* 597, 535 (2003)

Constellation Name: R Leonis

Asymptotic Giant Branch and Supergiant Stellar Diameters in the Mid-Infrared. *J. Weiner, D. D. S. Hale, & C. H. Townes.* 589, 976 (2003)

Constellation Name: δ Librae

Statistical Analysis of 5 Year Continuous Radio Flare Data from β Persei, V711 Tauri, δ Librae, and UX Arietis. *Mercedes T. Richards, Elizabeth B. Waltman, Frank D. Ghigo, & Donald St. P. Richards.* 147, 337 (2003)

Constellation Name: α Lyrae

The Geometry of Resonant Signatures in Debris Disks with Planets. *Marc J. Kuchner & Matthew J. Holman.* 588, 1110 (2003)

Constellation Name: Monoceros R2 IRS 3

Carbon Isotope Ratio in $^{12}CO/^{13}CO$ toward Local Molecular Clouds with Near-Infrared High-Resolution Spectroscopy of Vibrational Transition Bands. *Miwa Goto, Tomonori Usuda, Naruhisa Takato, Masa Hayashi, Seiichi Sakamoto, W. Gaessler, Yutaka Hayano, Masanori Iye, Yukiko Kamata, Tomio Kanzawa, Naoto Kobayashi, Yosuke Minowa, Ko Nedachi, Shin Oya, T.-S. Pyo, D. Saint-Jacques, Hiroshi Suto, Hideki Takami, Hiroshi Terada, & George F. Mitchell.* 598, 1038 (2003)

Constellation Name: R Monocerotis

First Evidence of Dusty Disks around Herbig Be Stars. *A. Fuente, A. Rodríguez-Franco, L. Testi, A. Natta, R. Bachiller, & R. Neri.* 598, L39 (2003)

Constellation Name: V838 Monocerotis

Spectroscopic and Spectropolarimetric Observations of V838 Monocerotis. *John P. Wisniewski, Nancy D. Morrison, Karen S. Bjorkman, Anatoly S. Miroshnichenko, Amanda C. Gault, Jennifer L. Hoffman, Marilyn R. Meade, & Jason M. Nett.* 588, 486 (2003)

Evolution of the Inner Circumstellar Envelope of V838 Monocerotis. *J. P. Wisniewski, K. S. Bjorkman, & A. M. Magalhães.* 598, L43 (2003)

Constellation Name: ζ Ophiuchi

An Ultrahigh-Resolution Survey of the Interstellar $^7Li/^6Li$ Isotope Ratio in the Solar Neighborhood. *David C. Knauth, S. R. Federman, & David L. Lambert.* 586, 268 (2003)

Constellation Name: ρ Ophiuchi A

Further Evidence for Chemical Fractionation from Ultraviolet Observations of Carbon Monoxide. *S. R. Federman, David L. Lambert, Yaron Sheffer, Jason A. Cardelli, B.-G. Andersson, Ewine F. van Dishoeck, & J. Zsargó.* 591, 986 (2003)

Constellation Name: χ Ophiuchi

An Ultrahigh-Resolution Survey of the Interstellar ^{7}Li/^{6}Li Isotope Ratio in the Solar Neighborhood. *David C. Knauth, S. R. Federman, & David L. Lambert.* 586, 268 (2003)

Further Evidence for Chemical Fractionation from Ultraviolet Observations of Carbon Monoxide. *S. R. Federman, David L. Lambert, Yaron Sheffer, Jason A. Cardelli, B.-G. Andersson, Ewine F. van Dishoeck, & J. Zsargó.* 591, 986 (2003)

Constellation Name: α Orionis

Asymptotic Giant Branch and Supergiant Stellar Diameters in the Mid-Infrared. *J. Weiner, D. D. S. Hale, & C. H. Townes.* 589, 976 (2003)

Constellation Name: CZ Orionis

Composite Accretion Disk and White Dwarf Model Analyses of the Quiescence of Dwarf Novae: EM Cygni, CZ Orionis, and WW Ceti. *Lisa Winter & Edward M. Sion.* 582, 352 (2003)

Constellation Name: FU Orionis

High-Resolution Spectroscopy of FU Orionis Stars. *G. H. Herbig, P. P. Petrov, & R. Duemmler.* 595, 384 (2003)

Constellation Name: Orion KL IRc2

Magnetic Field Morphology of Orion IRc2 from 86 GHz SiO Maser Polarization Images. *R. L. Plambeck, M. C. H. Wright, & R. Rao.* 594, 911 (2003)

Constellation Name: β Persei

Statistical Analysis of 5 Year Continuous Radio Flare Data from β Persei, V711 Tauri, δ Librae, and UX Arietis. *Mercedes T. Richards, Elizabeth B. Waltman, Frank D. Ghigo, & Donald St. P. Richards.* 147, 337 (2003)

Constellation Name: o Persei

An Ultrahigh-Resolution Survey of the Interstellar ^{7}Li/^{6}Li Isotope Ratio in the Solar Neighborhood. *David C. Knauth, S. R. Federman, & David L. Lambert.* 586, 268 (2003)

Constellation Name: X Persei

An Ultrahigh-Resolution Survey of the Interstellar ^{7}Li/^{6}Li Isotope Ratio in the Solar Neighborhood. *David C. Knauth, S. R. Federman, & David L. Lambert.* 586, 268 (2003)

Constellation Name: β Pictoris

The First Spatially Resolved Mid-Infrared Spectroscopy of β Pictoris. *A. J. Weinberger, E. E. Becklin, & B. Zuckerman.* 584, L33 (2003)

Constellation Name: ζ Puppis

X-Ray Emission-Line Profile Modeling of O Stars: Fitting a Spherically Symmetric Analytic Wind-Shock Model to the *Chandra* Spectrum of ζ Puppis. *Roban H. Kramer, David H. Cohen, & Stanley P. Owocki.* 592, 532 (2003)

Constellation Name: V445 Puppis

V445 Puppis: Helium Nova on a Massive White Dwarf. *Mariko Kato & Izumi Hachisu.* 598, L107 (2003)

Constellation Name: V Sagittae

A Limit Cycle Model for Long-Term Optical Variations of V Sagittae: The Second Example of Accretion Wind Evolution. *Izumi Hachisu & Mariko Kato.* 598, 527 (2003)

Constellation Name: WZ Sagittae

WZ Sagittae: *FUSE* Spectroscopy of the 2001 Outburst. *Knox S. Long, Cynthia S. Froning, Boris Gänsicke, Christian Knigge, Edward M. Sion, & Paula Szkody.* 591, 1172 (2003)

Hubble Space Telescope Spectroscopy of the Unexpected 2001 July Outburst of the Dwarf Nova WZ Sagittae. *Edward M. Sion, Boris T. Gaensicke, Knox S. Long, Paula Szkody, Fu-Hua Cheng, Steve B. Howell, Patrick Godon, William F. Welsh, Sumner Starrfield, Christian Knigge, & Warren M. Sparks.* 592, 1137 (2003)

Hubble Space Telescope Observations of Ultraviolet Oscillations in WZ Sagittae during the Decline from Outburst. *William F. Welsh, Edward M. Sion, Patrick Godon, Boris T. Gänsicke, Christian Knigge, Knox S. Long, & Paula Szkody.* 599, 509 (2003)

Constellation Name: V4134 Sagittarii

An *XMM-Newton* Observation of 4U 1755−33 in Quiescence: Evidence for a Fossil X-Ray Jet. *Lorella Angelini & Nicholas E. White.* 586, L71 (2003)

Constellation Name: V4332 Sagittarii

Remarkable Changes in the Near-Infrared Spectrum of the Nova-like Variable V4332 Sagittarii. *Dipankar P. K. Banerjee, Watson P. Varricatt, Nagarhalli M. Ashok, & Olli Launila.* 598, L31 (2003)

Constellation Name: V4641 Sagittarii

Jet-induced Nucleosynthesis in Misaligned Microquasars. *Yousaf M. Butt, Thomas J. Maccarone, & Nikos Prantzos.* 587, 748 (2003)

Chandra Detections of Two Quiescent Black Hole X-Ray Transients. *John A. Tomsick, Stéphane Corbel, Rob Fender, Jon M. Miller, Jerome A. Orosz, Michael P. Rupen, Tasso Tzioumis, Rudy Wijnands, & Philip Kaaret.* 597, L133 (2003)

Constellation Name: V4743 Sagittarii

A *Chandra* Low Energy Transmission Grating Spectrometer Observation of V4743 Sagittarii: A Supersoft X-Ray Source and a Violently Variable Light Curve. *J.-U. Ness, S. Starrfield, V. Burwitz, R. Wichmann, P. Hauschildt, J. J. Drake, R. M. Wagner, H. E. Bond, J. Krautter, M. Orio, M. Hernanz, R. D. Gehrz, C. E. Woodward, Y. Butt, K. Mukai, S. Balman, & J. W. Truran.* 594, L127 (2003)

Constellation Name: Scorpius X-1

The X-Ray Spectral Changes of Scorpius X-1. *C. F. Bradshaw, B. J. Geldzahler, & E. B. Fomalont.* 592, 486 (2003)

Constellation Name: VV Serpentis

Near-Infrared Interferometric Measurements of Herbig Ae/Be Stars. *J. A. Eisner, B. F. Lane, R. L. Akeson, L. A. Hillenbrand, & A. I. Sargent.* 588, 360 (2003)

Constellation Name: DG Tauri

Locating the Launching Region of T Tauri Winds: The Case of DG Tauri. *Jeffrey M. Anderson, Zhi-Yun Li, Ruben Krasnopolsky, & Roger D. Blandford.* 590, L107 (2003)

Constellation Name: GG Tauri

Detections of Rovibrational H_2 Emission from the Disks of T Tauri Stars. *Jeffrey S. Bary, David A. Weintraub, & Joel H. Kastner.* 586, 1136 (2003)

Constellation Name: HK Tauri

The First Detection of Spatially Resolved Mid-Infrared Scattered Light from a Protoplanetary Disk. *C. McCabe, G. Duchêne, & A. M. Ghez.* 588, L113 (2003)

Experimental Study of Light Scattering by Large Dust Aggregates Consisting of Micron-Sized SiO_2 Monospheres. *Gerhard Wurm, Helena Relke, & Johann Dorschner.* 595, 891 (2003)

Constellation Name: HV Tauri

Hubble Space Telescope WFPC2 Imaging of the Disk and Jet of HV Tauri C. *Karl R. Stapelfeldt, François Ménard, Alan M. Watson, John E. Krist, Catherine Dougados, Deborah L. Padgett, & Wolfgang Brandner.* 589, 410 (2003)

Constellation Name: T Tauri

Ejection of a Low-Mass Star in a Young Stellar System in Taurus. *Laurent Loinard, Luis F. Rodríguez, & Monica I. Rodríguez.* 587, L47 (2003)

The Spatial Distribution of Fluorescent H_2 Emission near T Tauri. *José Saucedo, Nuria Calvet, Lee Hartmann, & John Raymond.* 591, 275 (2003)

Near-Infrared, Adaptive Optics Observations of the T Tauri Multiple-Star System. *Elise Furlan, William J. Forrest, Dan M. Watson, Keven I. Uchida, Bernhard R. Brandl, Luke D. Keller, & Terry L. Herter.* 596, L87 (2003)

Constellation Name: V471 Tauri

Coronal Element Abundances of the Post–Common-Envelope Binary V471 Tauri with *ASCA*. *Martin Still & Gaitee Hussain.* 597, 1059 (2003)

Constellation Name: V711 Tauri

Statistical Analysis of 5 Year Continuous Radio Flare Data from β Persei, V711 Tauri, δ Librae, and UX Arietis. *Mercedes T. Richards, Elizabeth B. Waltman, Frank D. Ghigo, & Donald St. P. Richards.* 147, 337 (2003)

Constellation Name: V773 Tauri

No Fossil Disk in the T Tauri Multiple System V773 Tauri. *G. Duchêne, A. M. Ghez, C. McCabe, & A. J. Weinberger.* 592, 288 (2003)

Constellation Name: RR Telescopii

Emission Lines of Cl II in the Optical Spectra of Gaseous Nebulae. *F. P. Keenan, L. H. Aller, K. M. Exter, S. Hyung, & D. L. Pollacco.* 584, 385 (2003)

Constellation Name: BZ Ursae Majoris

Anomalous Ultraviolet Line Flux Ratios in the Cataclysmic variables 1RXS J232953.9+062814, CE 315, BZ Ursae Majoris, and EY Cygni observed with the *Hubble Space Telescope* Space Telescope Imaging Spectrograph. *Boris T. Gänsicke, Paula Szkody, Domitilla de Martino, Klaus Beuermann, Knox S. Long, Edward M. Sion, Christian Knigge, Tom Marsh, & Ivan Hubeny.* 594, 443 (2003)

Constellation Name: DW Ursae Majoris

System Parameters of DW Ursae Majoris. *S. Araujo-Betancor, C. Knigge, K. S. Long, D. W. Hoard, P. Szkody, B. Rogers, K. Krisciunas, V. S. Dhillon, R. I. Hynes, J. Patterson, & J. Kemp.* 583, 437 (2003)

Constellation Name: UX Ursae Majoris

Accretion and Outflow in Interacting Binary Systems: *Far Ultraviolet Spectropscopic Explorer* Observations of the Nova-like Cataclysmic Variable UX Ursae Majoris. *Cynthia S. Froning, Knox S. Long, & Christian Knigge.* 584, 433 (2003)

Constellation Name: 47 Ursae Majoris

Could the 55 Cancri Planetary System Really Be in the 3:1 Mean Motion Resonance? *Jianghui Ji, Hiroshi Kinoshita, Lin Liu, & Guangyu Li.* 585, L139 (2003)

Occurrence and Stability of Apsidal Resonance in Multiple Planetary Systems. *Ji-Lin Zhou & Yi-Sui Sun.* 598, 1290 (2003)

Constellation Name: GW Virginis

A Pulsation Mechanism for GW Virginis Variables. *Arthur N. Cox.* 585, 975 (2003)

Constellation Name: RT Virginis

The Three-dimensional Kinematics of Water Masers around the Semiregular Variable RT Virginis. *Hiroshi Imai, Katsunori M. Shibata, Kevin B. Marvel, Philip J. Diamond, Tetsuo Sasao, Makoto Miyoshi, Makoto Inoue, Victor Migenes, & Yasuhiro Murata.* 590, 460 (2003)

Bright Star Number: HR 166

A Sub-Saturn Mass Planet Orbiting HD 3651. *Debra A. Fischer, R. Paul Butler, Geoffrey W. Marcy, Steven S. Vogt, & Gregory W. Henry.* 590, 1081 (2003)

Bright Star Number: HR 1099

Statistical Analysis of 5 Year Continuous Radio Flare Data from β Persei, V711 Tauri, δ Librae, and UX Arietis. *Mercedes T. Richards, Elizabeth B. Waltman, Frank D. Ghigo, & Donald St. P. Richards.* 147, 337 (2003)

Bright Star Number: HR 4796A

Modeling the Infrared Emission from the HR 4796A Disk. *Aigen Li & J. I. Lunine.* 590, 368 (2003)

Henry Draper Number: HD 2039

Four New Planets Orbiting Metal-Enriched Stars. *C. G. Tinney, R. Paul Butler, Geoffrey W. Marcy, Hugh R. A. Jones, Alan J. Penny, Chris McCarthy, Brad D. Carter, & Jade Bond.* 587, 423 (2003)

Henry Draper Number: HD 3651

A Sub-Saturn Mass Planet Orbiting HD 3651. *Debra A. Fischer, R. Paul Butler, Geoffrey W. Marcy, Steven S. Vogt, & Gregory W. Henry.* 590, 1081 (2003)

Henry Draper Number: HD 5980

A Supernova Remnant Collision with a Stellar Wind. *Pablo F. Velázquez, Gloria Koenigsberger, & Alejandro C. Raga.* 584, 284 (2003)

Discovery of Highly Dynamic Matter Enhancements along the Polar Axis and Equatorial Plane in the Luminous Blue Variable Binary HD 5980. *A. Villar-Sbaffi, Anthony F. J. Moffat, & N. St-Louis.* 590, 483 (2003)

Henry Draper Number: HD 10700

Acoustic Heating Models for the Basal Flux Star τ Ceti Including Time-dependent Ionization: Results for Ca II and Mg II Emission. *W. Rammacher & M. Cuntz.* 594, L51 (2003)

Henry Draper Number: HD 12661

Could the 55 Cancri Planetary System Really Be in the 3:1 Mean Motion Resonance? *Jianghui Ji, Hiroshi Kinoshita, Lin Liu, & Guangyu Li.* 585, L139 (2003)

A Planetary Companion to HD 40979 and Additional Planets Orbiting HD 12661 and HD 38529. *Debra A. Fischer, Geoffrey W. Marcy, R. Paul Butler, Steven S. Vogt, Gregory W. Henry, Dimitri Pourbaix, Bernard Walp, Anthony A. Misch, & Jason T. Wright.* 586, 1394 (2003)

The Janus Head of the HD 12661 Planetary System. *Krzysztof Goździewski & Andrzej J. Maciejewski.* 586, L153 (2003)

The Librating Companions in HD 37124, HD 12661, HD 82943, 47 Ursa Majoris, and GJ 876: Alignment or Antialignment? *Jianghui Ji, Lin Liu, Hiroshi Kinoshita, Jilin Zhou, Hiroshi Nakai, & Guangyu Li.* 591, L57 (2003)

Occurrence and Stability of Apsidal Resonance in Multiple Planetary Systems. *Ji-Lin Zhou & Yi-Sui Sun.* 598, 1290 (2003)

Henry Draper Number: HD 14434

On the Origin of the High-Ionization Intermediate-Velocity Gas toward HD 14434. *David C. Knauth, J. Christopher Howk, Kenneth R. Sembach, James T. Lauroesch, & David M. Meyer.* 592, 964 (2003)

Henry Draper Number: HD 16429

The Massive Triple Star System HD 16429 A. *M. V. McSwain.* 595, 1124 (2003)

Henry Draper Number: HD 30177

Four New Planets Orbiting Metal-Enriched Stars. *C. G. Tinney, R. Paul Butler, Geoffrey W. Marcy, Hugh R. A. Jones, Alan J. Penny, Chris McCarthy, Brad D. Carter, & Jade Bond.* 587, 423 (2003)

Henry Draper Number: HD 37124

Seven New Keck Planets Orbiting G and K Dwarfs. *R. Paul Butler, Geoffrey W. Marcy, Steven S. Vogt, Debra A. Fischer, Gregory W. Henry, Gregory Laughlin, & Jason T. Wright.* 582, 455 (2003)

The Librating Companions in HD 37124, HD 12661, HD 82943, 47 Ursa Majoris, and GJ 876: Alignment or Antialignment? *Jianghui Ji, Lin Liu, Hiroshi Kinoshita, Jilin Zhou, Hiroshi Nakai, & Guangyu Li.* 591, L57 (2003)

Henry Draper Number: HD 38529

A Planetary Companion to HD 40979 and Additional Planets Orbiting HD 12661 and HD 38529. *Debra A. Fischer, Geoffrey W. Marcy, R. Paul Butler, Steven S. Vogt, Gregory W. Henry, Dimitri Pourbaix, Bernard Walp, Anthony A. Misch, & Jason T. Wright.* 586, 1394 (2003)

Henry Draper Number: HD 40979

A Planetary Companion to HD 40979 and Additional Planets Orbiting HD 12661 and HD 38529. *Debra A. Fischer, Geoffrey W. Marcy, R. Paul Butler, Steven S. Vogt, Gregory W. Henry, Dimitri Pourbaix, Bernard Walp, Anthony A. Misch, & Jason T. Wright.* 586, 1394 (2003)

Henry Draper Number: HD 49674

Seven New Keck Planets Orbiting G and K Dwarfs. *R. Paul Butler, Geoffrey W. Marcy, Steven S. Vogt, Debra A. Fischer, Gregory W. Henry, Gregory Laughlin, & Jason T. Wright.* 582, 455 (2003)

Henry Draper Number: HD 50896

Hot Gas in the Circumstellar Bubble S308. *You-Hua Chu, Martín A. Guerrero, Robert A. Gruendl, Guillermo García-Segura, & Heinrich J. Wendker.* 599, 1189 (2003)

Henry Draper Number: HD 56126

An Abundance Analysis of the New Carbon-Rich Proto-Planetary Nebula IRAS 06530−0213. *Bruce J. Hrivnak & Bacham E. Reddy.* 590, 1049 (2003)

On Titanium Carbide Nanoparticles as the Origin of the 21 Micron Emission Feature in Post–Asymptotic Giant Branch Stars. *Aigen Li.* 599, L45 (2003)

Henry Draper Number: HD 62623

On the Determination of Ejecta Structure and Explosion Asymmetry from the X-Ray Knots of Cassiopeia A. *J. Martin Laming & Una Hwang.* 597, 347 (2003)

Henry Draper Number: HD 70642

A Planet in a Circular Orbit with a 6 Year Period. *Brad D. Carter, R. Paul Butler, C. G. Tinney, Hugh R. A. Jones, Geoffrey W. Marcy, Chris McCarthy, Debra A. Fischer, & Alan J. Penny.* 593, L43 (2003)

Henry Draper Number: HD 72659

Seven New Keck Planets Orbiting G and K Dwarfs. *R. Paul Butler, Geoffrey W. Marcy, Steven S. Vogt, Debra A. Fischer, Gregory W. Henry, Gregory Laughlin, & Jason T. Wright.* 582, 455 (2003)

Henry Draper Number: HD 73526

Four New Planets Orbiting Metal-Enriched Stars. *C. G. Tinney, R. Paul Butler, Geoffrey W. Marcy, Hugh R. A. Jones, Alan J. Penny, Chris McCarthy, Brad D. Carter, & Jade Bond.* 587, 423 (2003)

Henry Draper Number: HD 76700

Four New Planets Orbiting Metal-Enriched Stars. *C. G. Tinney, R. Paul Butler, Geoffrey W. Marcy, Hugh R. A. Jones, Alan J. Penny, Chris McCarthy, Brad D. Carter, & Jade Bond.* 587, 423 (2003)

Henry Draper Number: HD 80606b

Planet Migration and Binary Companions: The Case of HD 80606b. *Y. Wu & N. Murray.* 589, 605 (2003)

Henry Draper Number: HD 82943

Could the 55 Cancri Planetary System Really Be in the 3:1 Mean Motion Resonance? *Jianghui Ji, Hiroshi Kinoshita, Lin Liu, & Guangyu Li.* 585, L139 (2003)

A Possible Correlation between Mass Ratio and Period Ration in Multiple Planetary Systems. *Tsevi Mazeh & Shay Zucker.* 590, L115 (2003)

The Librating Companions in HD 37124, HD 12661, HD 82943, 47 Ursa Majoris, and GJ 876: Alignment or Antialignment? *Jianghui Ji, Lin Liu, Hiroshi Kinoshita, Jilin Zhou, Hiroshi Nakai, & Guangyu Li.* 591, L57 (2003)

Henry Draper Number: HD 91316

Variable Na I Absorption toward ρ Leonis: Biased Neutral Formation in the Diffuse Interstellar Medium? *J. T. Lauroesch & David M. Meyer.* 591, L123 (2003)

Henry Draper Number: HD 100546

Disks around the Young Stars with TW Hydrae and HD 100546 Imaged at 3.4 Millimeters with the Australia Telescope Compact Array. *D. J. Wilner, T. L. Bourke, C. M. Wright, J. K. Jørgensen, E. F. van Dishoeck, & T. Wong.* 596, 597 (2003)

A Resolved Circumstellar Disk around the Herbig Ae Star HD 00546 in the Thermal Infrared. *Wilson M. Liu, Philip M. Hinz, Michael R. Meyer, Eric E. Mamajek, William F. Hoffman, & Joseph L. Hora.* 598, L111 (2003)

Henry Draper Number: HD 104237

The ϵ Chamaeleontis Young Stellar Group and the Characterization of Sparse Stellar Clusters. *Eric D. Feigelson, Warrick A. Lawson, & Gordon P. Garmire.* 599, 1207 (2003)

Henry Draper Number: HD 104985

A Planetary Companion to the G-Type Giant Star HD 104985. *Bun'ei Sato, Hiroyasu Ando, Eiji Kambe, Yoichi Takeda, Hideyuki Izumiura, Seiji Masuda, Etsuji Watanabe, Kunio Noguchi, Setsuko Wada, Norio Okada, Hisashi Koyano, Hideo Maehara, Yuji Norimoto, Takafumi Okada, Yasuhiro Shimizu, Fumihiro Uraguchi, Kenshi Yanagisawa, & Michitoshi Yoshida.* 597, L157 (2003)

Henry Draper Number: HD 108874

Seven New Keck Planets Orbiting G and K Dwarfs. *R. Paul Butler, Geoffrey W. Marcy, Steven S. Vogt, Debra A. Fischer, Gregory W. Henry, Gregory Laughlin, & Jason T. Wright.* 582, 455 (2003)

Henry Draper Number: HD 114729

Seven New Keck Planets Orbiting G and K Dwarfs. *R. Paul Butler, Geoffrey W. Marcy, Steven S. Vogt, Debra A. Fischer, Gregory W. Henry, Gregory Laughlin, & Jason T. Wright.* 582, 455 (2003)

Henry Draper Number: HD 116852

Origins of the Highly Ionized Gas along the Line of Sight toward HD 116852. *Andrew J. Fox, Blair D. Savage, Kenneth R. Sembach, Dirk Fabian, Philipp Richter, David M. Meyer, James Lauroesch, & J. Christopher Howk.* 582, 793 (2003)

Henry Draper Number: HD 122563

Oxygen Abundance in the Template Halo Giant HD 122563. *Beatriz Barbuy, Jorge Meléndez, Monique Spite, Francois Spite, Eric Depagne, Vanessa Hill, Roger Cayrel, Piercarlo Bonifacio, Augusto Damineli, & Carlos A.O. Torres.* 588, 1072 (2003)

Henry Draper Number: HD 128311

Seven New Keck Planets Orbiting G and K Dwarfs. *R. Paul Butler, Geoffrey W. Marcy, Steven S. Vogt, Debra A. Fischer, Gregory W. Henry, Gregory Laughlin, & Jason T. Wright.* 582, 455 (2003)

Henry Draper Number: HD 141569A

Ground-based Near-Infrared Imaging of the HD 141569 Circumstellar Disk. *A. Boccaletti, J.-C. Augereau, F. Marchis, & J. Hahn.* 585, 494 (2003)

Modeling the Infrared Emission from the HD 141569A Disk. *Aigen Li & J. I. Lunine.* 594, 987 (2003)

Henry Draper Number: HD 145675

Seven New Keck Planets Orbiting G and K Dwarfs. *R. Paul Butler, Geoffrey W. Marcy, Steven S. Vogt, Debra A. Fischer, Gregory W. Henry, Gregory Laughlin, & Jason T. Wright.* 582, 455 (2003)

Henry Draper Number: HD 160691

Where Is the Second Planet in the HD 160691 Planetary System? *Krzysztof Gozdźiewski, Maciej Konacki, & Andrzej J. Maciejewski.* 594, 1019 (2003)

Conditions of Dynamical Stability for the HD 160691 Planetary System. *Eric Bois, Ludmila Kiseleva-Eggleton, Nicolas Rambaux, & Elke Pilat-Lohinger.* 598, 1312 (2003)

Henry Draper Number: HD 168443

Eccentricity Evolution of Extrasolar Multiple Planetary Systems Due to the Depletion of Nascent Protostellar Disks. *M. Nagasawa, D. N. C. Lin, & S. Ida.* 586, 1374 (2003)

Henry Draper Number: HD 168625

The Dust Ring of Luminous Blue Variable Candidate HD 168625: Infrared Observations and Model Calculations. *Timothy B. O'Hara, Margaret Meixner, Angela K. Speck, Toshiya Ueta, & Matthew Bobrowsky.* 598, 1255 (2003)

Henry Draper Number: HD 185418

Abundances and Physical Conditions in the Interstellar Gas toward HD 185418. *Paule Sonnentrucker, Scott D. Friedman, Daniel E. Welty, Donald G. York, & Theodore P. Snow.* 596, 350 (2003)

Henry Draper Number: HD 191612

The Remarkable Alternating Spectra of the Of?p Star HD 191612. *Nolan R. Walborn, Ian D. Howarth, Artemio Herrero, & Daniel J. Lennon.* 588, 1025 (2003)

Henry Draper Number: HD 191877

Deuterium toward Two Milky Way Disk Stars: Probing Extended Sight Lines with the *Far Ultraviolet Spectroscopic Explorer*. *Charles G. Hoopes, Kenneth R. Sembach, Guillaume Hébrard, H. Warren Moos, & David C. Knauth.* 586, 1094 (2003)

Henry Draper Number: HD 195965

Deuterium toward Two Milky Way Disk Stars: Probing Extended Sight Lines with the *Far Ultraviolet Spectroscopic Explorer*. *Charles G. Hoopes, Kenneth R. Sembach, Guillaume Hébrard, H. Warren Moos, & David C. Knauth.* 586, 1094 (2003)

Henry Draper Number: HD 203374A

FUSE Measurements of Rydberg Bands of Interstellar CO between 925 and 1150 Å. *Yaron Sheffer, S. R. Federman, & B.-G. Andersson.* 597, L29 (2003)

Henry Draper Number: HD 209458

Infrared Observations during the Secondary Eclipse of HD 209458b. I. 3.6 Micron Occultation Spectroscopy Using the Very Large Telescope. *L. Jeremy Richardson, Drake Deming, Guenter Wiedemann, Cedric Goukenleuque, David Steyert, Joseph Harrington, & Larry W. Esposito.* 584, 1053 (2003)

On the Indirect Detection of Sodium in the Atmosphere of the Planetary Companion to HD 209458. *J. J. Fortney, D. Sudarsky, I. Hubeny, C. S. Cooper, W. B. Hubbard, A. Burrows, & J. I. Lunine.* 589, 615 (2003)

A Theory for the Radius of the Transiting Giant Planet HD 209458b. *Adam Burrows, D. Sudarsky, & W. B. Hubbard.* 594, 545 (2003)

Source of Atomic Hydrogen in the Atmosphere of HD 209458b. *Mao-Chang Liang, Christopher D. Parkinson, Anthony Y. T. Lee, Yuk L. Yung, & Sara Seager.* 596, L247 (2003)

Infrared Observations During the Secondary Eclipse of HD 209458b. II. Strong Limits on the Infrared Spectrum near 2.2 Microns. *L. Jeremy Richardson, Drake Deming, & Sara Seager.* 597, 581 (2003)

Henry Draper Number: HDE 226868

Wind Accretion and State Transitions in Cygnus X-1. *D. R. Gies, C. T. Bolton, J. R. Thomson, W. Huang, M. V. McSwain, R. L. Riddle, Z. Wang, P. J. Wiita, D. W. Wingert, B. Csak, & L. L. Kiss.* 583, 424 (2003)

Name: Arcturus

Buried Alive in the Coronal Graveyard. *Thomas R. Ayres, Alexander Brown, & Graham M. Harper.* 598, 610 (2003)

Name: Aldebaran

Buried Alive in the Coronal Graveyard. *Thomas R. Ayres, Alexander Brown, & Graham M. Harper.* 598, 610 (2003)

Name: Algol

Statistical Analysis of 5 Year Continuous Radio Flare Data from β Persei, V711 Tauri, δ Librae, and UX Arietis. *Mercedes T. Richards, Elizabeth B. Waltman, Frank D. Ghigo, & Donald St. P. Richards.* 147, 337 (2003)

Name: Capella

Modeling the Ne IX Triplet Spectral Region of Capella with the *Chandra* and *XMM-Newton* Gratings. *Jan-Uwe Ness, Nancy S. Brickhouse, Jeremy J. Drake, & David P. Huenemoerder.* 598, 1277 (2003)

Name: Elias 25

A Test Case for the Organic Refractory Model of Interstellar Dust. *S. S. Shenoy, D. C. B. Whittet, J. E. Chiar, A. J. Adamson, W. G. Roberge, & G. E. Hassel.* 591, 962 (2003)

Name: Fomalhaut

Submillimeter Observations of an Asymmetric Dust Disk around Fomalhaut. *W. S. Holland, J. S. Greaves, W. R. F. Dent, M. C. Wyatt, B. Zuckerman, R. A. Webb, C. McCarthy, I. M. Coulson, E. I. Robson, & W. K. Gear.* 582, 1141 (2003)

Name: Lanning 23

Interstellar Deuterium, Nitrogen, and Oxygen Abundances toward GD 246, WD 2331−475, HZ 21, and Lanning 23: Results from the *FUSE* Mission. *Cristina M. Oliveira, Guillaume Hébrard, J. Christopher Howk, Jeffrey W. Kruk, Pierre Chayer, & H. Warren Moos.* 587, 235 (2003)

Name: Nova LMC 1995

An *XMM-Newton* Observation of Nova LMC 1995: A Bright Supersoft X-Ray Source. *Marina Orio, Wouter Hartmann, Martin Still, & Jochen Greiner.* 594, 435 (2003)

Name: OGLE-TR-56

The New Transiting Planet OGLE-TR-56b: Orbit and Atmosphere. *Dimitar D. Sasselov.* 596, 1327 (2003)

Name: Vega

Adaptive Optics Observations of Vega: Eight Detected Sources and Upper Limits to Planetary-Mass Companions. *Stanimir A. Metchev, Lynne A. Hillenbrand, & Russel J. White.* 582, 1102 (2003)

Deep Keck Adaptive Optics Searches for Extrasolar Planets in the Dust of ϵ Eridani and Vega. *Bruce A. Macintosh, E. E. Becklin, Denise Kaisler, Quinn Konopacky, & B. Zuckerman.* 594, 538 (2003)

Resonant Trapping of Planetesimals by Planet Migration: Debris Disk Clumps and Vega's Similarity to the Solar System. *M. C. Wyatt.* 598, 1321 (2003)

Alphanumeric: A0620−00

Multiwavelength Spectrum of the Black Hole XTE J1118+480 in Quiescence. *Jeffrey E. McClintock, Ramesh Narayan, Michael R. Garcia, Jerome A. Orosz, Ronald A. Remillard, & Stephen S. Murray.* 593, 435 (2003)

Alphanumeric: AFGL 490

Carbon Isotope Ratio in $^{12}CO/^{13}CO$ toward Local Molecular Clouds with Near-Infrared High-Resolution Spectroscopy of Vibrational Transition Bands. *Miwa Goto, Tomonori Usuda, Naruhisa Takato, Masa Hayashi, Seiichi Sakamoto, W. Gaessler, Yutaka Hayano, Masanori Iye, Yukiko Kamata, Tomio Kanzawa, Naoto Kobayashi, Yosuke Minowa, Ko Nedachi, Shin Oya, T.-S. Pyo, D. Saint-Jacques, Hiroshi Suto, Hideki Takami, Hiroshi Terada, & George F. Mitchell.* 598, 1038 (2003)

Alphanumeric: AS 442

Near-Infrared Interferometric Measurements of Herbig Ae/Be Stars. *J. A. Eisner, B. F. Lane, R. L. Akeson, L. A. Hillenbrand, & A. I. Sargent.* 588, 360 (2003)

Alphanumeric: AV 69

A Tale of Two Stars: The Extreme O7 Iaf+ Supergiant AV 83 and the OC7.5 III((f)) Star AV 69. *D. John Hillier, T. Lanz, S. R. Heap, I. Hubeny, L. J. Smith, C. J. Evans, D. J. Lennon, & J. C. Bouret.* 588, 1039 (2003)

Alphanumeric: AV 83

A Tale of Two Stars: The Extreme O7 Iaf+ Supergiant AV 83 and the OC7.5 III((f)) Star AV 69. *D. John Hillier, T. Lanz, S. R. Heap, I. Hubeny, L. J. Smith, C. J. Evans, D. J. Lennon, & J. C. Bouret.* 588, 1039 (2003)

Alphanumeric: B34

Rotational Periods of Very Young Brown Dwarfs and Very Low-Mass Stars in Chamaeleon I. *V. Joergens, M. Fernández, J. M. Carpenter, & R. Neuhäuser.* 594, 971 (2003)

Alphanumeric: CE 315

Anomalous Ultraviolet Line Flux Ratios in the Cataclysmic variables 1RXS J232953.9+062814, CE 315, BZ Ursae Majoris, and EY Cygni observed with the *Hubble Space Telescope* Space Telescope Imaging Spectrograph. *Boris T. Gänsicke, Paula Szkody, Domitilla de Martino, Klaus Beuermann, Knox S. Long, Edward M. Sion, Christian Knigge, Tom Marsh, & Ivan Hubeny.* 594, 443 (2003)

Alphanumeric: CFHT-BD-Tau 4

The First Detailed Look at a Brown Dwarf Disk. *I. Pascucci, D. Apai, Th. Henning, & C. P. Dullemond.* 590, L111 (2003)

First Detection of Millimeter Dust Emission from Brown Dwarf Disks. *R. Klein, D. Apai, I. Pascucci, Th. Henning, & L. B. F. M. Waters.* 593, L57 (2003)

Alphanumeric: COM J1740−5340

The Complex Hα Line Profile of the Bright Companion to PSR J1740−5340 in NGC 6397. *E. Sabbi, R. Gratton, F. R. Ferraro, A. Bragaglia, A. Possenti, N. D'Amico, & F. Camilo.* 589, L41 (2003)

Alphanumeric: CRL 618

First Detection of Vibrationally Excited HNC in Space. *Peter Schilke, Claudio Comito, & Sven Thorwirth.* 582, L101 (2003)

Detection of HCN Direct l-Type Transitions Probing Hot Molecular Gas in the Proto–Planetary Nebula CRL 618. *S. Thorwirth, F. Wyrowski, P. Schilke, K. M. Menten, S. Brünken, H. S. P. Müller, & G. Winnewisser.* 586, 338 (2003)

Physical Conditions in the Proto–Planetary Nebula CRL 618 Derived from Observations of Vibrationally Excited HC_3N. *F. Wyrowski, P. Schilke, S. Thorwirth, K. M. Menten, & G. Winnewisser.* 586, 344 (2003)

Detection of MgNC in CRL 618: Tracing Metal Chemistry in Asymptotic Giant Branch Evolution. *J. L. Highberger & L. M. Ziurys.* 597, 1065 (2003)

Alphanumeric: CRL 2688

The Salty Scrambled Egg: Detection of NaCl toward CRL 2688. *J. L. Highberger, K. J. Thomson, P. A. Young, D. Arnett, & L. M. Ziurys.* 593, 393 (2003)

Alphanumeric: CS 31082-001

Measurement of the Europium Isotope Ratio for the Extremely Metal-poor, r-Process–enhanced Star CS 31082-001. *Wako Aoki, Satoshi Honda, Timothy C. Beers, & Christopher Sneden.* 586, 506 (2003)

Alphanumeric: CHXR 73

Rotational Periods of Very Young Brown Dwarfs and Very Low-Mass Stars in Chamaeleon I. *V. Joergens, M. Fernández, J. M. Carpenter, & R. Neuhäuser.* 594, 971 (2003)

Alphanumeric: CHXR 78C

Rotational Periods of Very Young Brown Dwarfs and Very Low-Mass Stars in Chamaeleon I. *V. Joergens, M. Fernández, J. M. Carpenter, & R. Neuhäuser.* 594, 971 (2003)

Alphanumeric: EUVE J0317−85.5

A Multiwavelength Study of the High-Field Magnetic White Dwarf EUVE J0317−85.5 (=RE J0317−853). *Stéphane Vennes, G. D. Schmidt, L. Ferrario, D. J. Christian, D. T. Wickramasinghe, & A. Kawka.* 593, 1040 (2003)

Alphanumeric: EXO 0748−676

Discrete X-Ray Signatures of a Photoionized Plasma above the Accretion Disk of the Neutron Star EXO 0748−676. *M. A. Jimenez-Garate, N. S. Schulz, & H. L. Marshall.* 590, 432 (2003)

Alphanumeric: G29-38

High-Resolution Spectroscopy of the Pulsating White Dwarf G29-38. *Susan E. Thompson, J. C. Clemens, M. H. van Kerkwijk, & D. Koester.* 589, 921 (2003)

Alphanumeric: GD 246

Interstellar Deuterium, Nitrogen, and Oxygen Abundances toward GD 246, WD 2331−475, HZ 21, and Lanning 23: Results from the *FUSE* Mission. *Cristina M. Oliveira, Guillaume Hébrard, J. Christopher Howk, Jeffrey W. Kruk, Pierre Chayer, & H. Warren Moos.* 587, 235 (2003)

Alphanumeric: GD 358

White Dwarf Asteroseismology and the $^{12}C(\alpha, \gamma)^{16}O$ Rate. *Travis S. Metcalfe.* 587, L43 (2003)

Alphanumeric: GJ 876

Could the 55 Cancri Planetary System Really Be in the 3:1 Mean Motion Resonance? *Jianghui Ji, Hiroshi Kinoshita, Lin Liu, & Guangyu Li.* 585, L139 (2003)

A Possible Correlation between Mass Ratio and Period Ration in Multiple Planetary Systems. *Tsevi Mazeh & Shay Zucker.* 590, L115 (2003)

Alphanumeric: GRO J0422+32

GRO J0422+32: The Lowest Mass Black Hole? *Dawn M. Gelino & Thomas E. Harrison.* 599, 1254 (2003)

Alphanumeric: GRO J1719−24

Jet-induced Nucleosynthesis in Misaligned Microquasars. *Yousaf M. Butt, Thomas J. Maccarone, & Nikos Prantzos.* 587, 748 (2003)

Alphanumeric: GRS 1741.9−2853

The X-Ray Binary GRS 1741.9−2853 in Outburst and Quiescence. *M. P. Muno, F. K. Baganoff, & J. S. Arabadjis.* 598, 474 (2003)

Alphanumeric: GRS 1915+105

A Disk-Jet Interaction Model for the X-Ray Variability in Microquasars. *L. Nobili.* 582, 954 (2003)

Low-Frequency Coherence Break in the Soft X-Ray State of GRS 1915+105. *Jian Feng Ji, Shuang Nan Zhang, Jin Lu Qu, & Ti Pei Li.* 584, L23 (2003)

Role of Shocked Accretion Flows in Regulating the Quasi-Periodic Oscillation of Galactic Black Hole Candidates. *Tapas K. Das.* 588, L89 (2003)

The Disk-Jet Connection in Microquasars and Active Galactic Nuclei. *Mario Livio, J. E. Pringle, & A. R. King.* 593, 184 (2003)

Correlated Radio:X-Ray Emission in the Hard States of Galactic Microquasars. *M. Choudhury, A. R. Rao, S. V. Vadawale, & A. K. Jain.* 593, 452 (2003)

Alphanumeric: GX 13+1

Long-Term X-Ray Variability in GX 13+1: Energy-dependent Periodic Modulation. *Robin H. D. Corbet.* 595, 1086 (2003)

Alphanumeric: HE 0107−5240

Excavation of the First Stars. *Toshikazu Shigeyama, Takuji Tsujimoto, & Yuzuru Yoshii.* 586, L57 (2003)

Alphanumeric: HV 5936

Fundamental Properties and Distances of Large Magellanic Cloud Eclipsing Binaries. IV. HV 5936. *E. L. Fitzpatrick, I. Ribas, E. F. Guinan, F. P. Maloney, & A. Claret.* 587, 685 (2003)

Alphanumeric: IRAS 04302+2247

The Circumstellar Disk of the Butterfly Star in Taurus. *Sebastian Wolf, Deborah L. Padgett, & Karl R. Stapelfeldt.* 588, 373 (2003)

Experimental Study of Light Scattering by Large Dust Aggregates Consisting of Micron-Sized SiO_2 Monospheres. *Gerhard Wurm, Helena Relke, & Johann Dorschner.* 595, 891 (2003)

Alphanumeric: IRAS 06530−0213

An Abundance Analysis of the New Carbon-Rich Proto-Planetary Nebula IRAS 06530−0213. *Bruce J. Hrivnak & Bacham E. Reddy.* 590, 1049 (2003)

Alphanumeric: IRAS 22272+5435

Spatially Resolved 3 Micron Spectroscopy of IRAS 22272+5435: Formation and Evolution of Aliphatic Hydrocarbon Dust in Proto–Planetary Nebulae. *Miwa Goto, W. Gaessler, Yutaka Hayano, Masanori Iye, Yukiko Kamata, Tomio Kanzawa, Naoto Kobayashi, Yosuke Minowa, D. J. Saint-Jacques, Hideki Takami, Naruhisa Takato, & Hiroshi Terada.* 589, 419 (2003)

Alphanumeric: IRC +10216

Detections of OH toward the Extreme Carbon Star IRC +10216. *K. E. Saavik Ford, David A. Neufeld, Paul F. Goldsmith, & Gary J. Melnick.* 589, 430 (2003)

A C-Band Spectral Scan of IRC +10°216. *Esteban Araya, Peter Hofner, Paul Goldsmith, Slava Slysh, & Shuro Takano.* 596, 556 (2003)

Alphanumeric: KH 15D

Natural Coronagraphics Observations of the Eclipsing T Tauri System KH 15D: Evidence of Accretion and Bipolar Outflow in a Weak-Line T Tauri Star. *Catrina M. Hamilton, William Herbst, Reinhard Mundt, Coryn A. L. Bailer-Jones, & Christopher M. Johns-Krull.* 591, L45 (2003)

Limits on Eclipses of the Pre–Main-Sequence Star KH 15D in the First Half of the 20th Century. *Joshua N. Winn, Peter M. Garnavich, K. Z. Stanek, & Dimitar D. Sasselov.* 593, L121 (2003)

Alphanumeric: L1551 IRS 5

Very Large Array Observations of Proper Motions in L1551 IRS 5. *Luis F. Rodríguez, Salvador Curiel, Jorge Cantó, Laurent Loinard, Alejandro C. Raga, & Jose M. Torrelles.* 583, 330 (2003)

A Comprehensive Study of the L1551 IRS 5 Binary System. *Mayra Osorio, Paolo D'Alessio, James Muzerolle, Nuria Calvet, & Lee Hartmann.* 586, 1148 (2003)

The Binary Jet in L1551 IRS 5. *Luis F. Rodríguez, Alicia Porras, Mark J. Claussen, Salvador Curiel, David J. Wilner, & Paul T. P. Ho.* 586, L137 (2003)

Alphanumeric: L1551NE

High Angular Resolution, Sensitive CS $J = 2$–1 and $J = 3$–2 Imaging of the Protostar L1551 NE: Evidence for Outflow-Triggered Star Formation? *Sozo Yokogawa, Yoshimi Kitamura, Munetake Momose, & Ryohei Kawabe.* 595, 266 (2003)

Alphanumeric: LkCa 15

Detections of Rovibrational H_2 Emission from the Disks of T Tauri Stars. *Jeffrey S. Bary, David A. Weintraub, & Joel H. Kastner.* 586, 1136 (2003)

Continuum and CO/HCO^+ Emission from the Disk around the T Tauri Star LkCa 15. *Chunhua Qi, Jacqueline E. Kessler, David W. Koerner, Anneila I. Sargent, & Geoffrey A. Blake.* 597, 986 (2003)

Alphanumeric: LkHα 101

Carbon Isotope Ratio in $^{12}CO/^{13}CO$ toward Local Molecular Clouds with Near-Infrared High-Resolution Spectroscopy of Vibrational Transition Bands. *Miwa Goto, Tomonori Usuda, Naruhisa Takato, Masa Hayashi, Seiichi Sakamoto, W. Gaessler, Yutaka Hayano, Masanori Iye, Yukiko Kamata, Tomio Kanzawa, Naoto Kobayashi, Yosuke Minowa, Ko Nedachi, Shin Oya, T.-S. Pyo, D. Saint-Jacques, Hiroshi Suto, Hideki Takami, Hiroshi Terada, & George F. Mitchell.* 598, 1038 (2003)

Alphanumeric: LMC X-2

The Complete Z-Diagram of LMC X-2. *A. P. Smale, J. Homan, & E. Kuulkers.* 590, 1035 (2003)

Alphanumeric: LP 415-20

An Adaptive Optics Survey of M6.0–M7.5 Stars: Discovery of Three Very Low Mass Binary Systems Including Two Probably Hyades Members. *Nick Siegler, Laird M. Close, Eric E. Mamajek, & Melanie Freed.* 598, 1265 (2003)

Alphanumeric: LP 475-855

An Adaptive Optics Survey of M6.0–M7.5 Stars: Discovery of Three Very Low Mass Binary Systems Including Two Probably Hyades Members. *Nick Siegler, Laird M. Close, Eric E. Mamajek, & Melanie Freed.* 598, 1265 (2003)

Alphanumeric: 2MASS J05325346+8246465

The First Substellar Subdwarf? Discovery of a Metal-poor L Dwarf with Halo Kinematics. *Adam J. Burgasser, J. Davy Kirkpatrick, Adam Burrows, James Liebert, I. Neill Reid, John E. Gizis, Mark R. McGovern, L. Prato, & Ian S. McLean.* 592, 1186 (2003)

Alphanumeric: 2MASS J09373487+2931409

The Spectra of T Dwarfs. II. Red Optical Data. *Adam J. Burgasser, J. Davy Kirkpatrick, James Liebert, & Adam Burrows.* 594, 510 (2003)

Alphanumeric: 2MASSI J12171110−0311131

Binarity in Brown Dwarfs: T Dwarf Binaries Discovered with the *Hubble Space Telescope* Wide Field Planetary Camera 2. *Adam J. Burgasser, J. Davy Kirkpatrick, I. Neill Reid, Michael E. Brown, Cherie L. Miskey, & John E. Gizis.* 586, 512 (2003)

Alphanumeric: 2MASSI J12255432−2739466

Binarity in Brown Dwarfs: T Dwarf Binaries Discovered with the *Hubble Space Telescope* Wide Field Planetary Camera 2. *Adam J. Burgasser, J. Davy Kirkpatrick, I. Neill Reid, Michael E. Brown, Cherie L. Miskey, & John E. Gizis.* 586, 512 (2003)

Alphanumeric: 2MASSI J15344984−2952274

Binarity in Brown Dwarfs: T Dwarf Binaries Discovered with the *Hubble Space Telescope* Wide Field Planetary Camera 2. *Adam J. Burgasser, J. Davy Kirkpatrick, I. Neill Reid, Michael E. Brown, Cherie L. Miskey, & John E. Gizis.* 586, 512 (2003)

Alphanumeric: 2MASSI J1628137−243139

Spatial Study with the Very Large Telescope of a New Resolved Edge-on Circumstellar Dust Disk Discovered at the Periphery of the ρ Ophiuchi Dark Cloud. *N. Grosso, J. Alves, K. Wood, R. Neuhäuser, T. Montmerle, & J. E. Bjorkman.* 586, 296 (2003)

Alphanumeric: 2MASSW J1750129+442404

An Adaptive Optics Survey of M6.0–M7.5 Stars: Discovery of Three Very Low Mass Binary Systems Including Two Probably Hyades Members. *Nick Siegler, Laird M. Close, Eric E. Mamajek, & Melanie Freed.* 598, 1265 (2003)

Alphanumeric: MWC 137

First Evidence of Dusty Disks around Herbig Be Stars. *A. Fuente, A. Rodríguez-Franco, L. Testi, A. Natta, R. Bachiller, & R. Neri.* 598, L39 (2003)

Alphanumeric: MWC 349A

The Stellar "Wind" of MWC 349A. *M. A. Gordon.* 589, 953 (2003)

Alphanumeric: MWC 1080

Near-Infrared Interferometric Measurements of Herbig Ae/Be Stars. *J. A. Eisner, B. F. Lane, R. L. Akeson, L. A. Hillenbrand, & A. I. Sargent.* 588, 360 (2003)

First Evidence of Dusty Disks around Herbig Be Stars. *A. Fuente, A. Rodríguez-Franco, L. Testi, A. Natta, R. Bachiller, & R. Neri.* 598, L39 (2003)

Alphanumeric: MXB 1659−29

A *Chandra* Observation of the Neutron Star X-Ray Transient and Eclipsing Binary MXB 1659−29 in Quiescence. *Rudy Wijnands, Mike Nowak, Jon M. Miller, Jeroen Homan, Stefanie Wachter, & Walter H. H. Lewin.* 594, 952 (2003)

Alphanumeric: PG 1034+001

Serendipity and the Sloan Digital Sky Survey: Discovery of the Largest Known Planetary Nebula on the Sky. *Paul C. Hewett, Michael J. Irwin, Evan D. Skillman, Craig B. Foltz, Jon P. Willis, Stephen J. Warren, & Nicholas A. Walton.* 599, L37 (2003)

Alphanumeric: PG 1658+441

Far Ultraviolet Spectroscopic Explorer Observation of the Ultramassive White Dwarf PG 1658+441. *Jean Dupuis, Pierre Chayer, Stéphane Vennes, Nicole F. Allard, & Guillaume Hébrard.* 598, 486 (2003)

Alphanumeric: PG 1716+426

Discovery of a New Class of Pulsating Stars: Gravity-Mode Pulsators among Subdwarf B Stars. *E. M. Green, G. Fontaine, M. D. Reed, K. Callerame, I. R. Seitenzahl, B. A. White, E. A. Hyde, R. Østensen, O. Cordes, P. Brassard, S. Falter, E. J. Jeffery, S. Dreizler, S. L. Schuh, M. Giovanni, H. Edelmann, J. Rigby, & A. Bronowska.* 583, L31 (2003)

Alphanumeric: PSR B0540−69

Giant Pulses from PSR B0540−69 in the Large Magellanic Cloud. *Simon Johnston & Roger W. Romani.* 590, L95 (2003)

Alphanumeric: PSR B1055−52

Thermal Structure and Cooling of Superfluid Neutron Stars with Accreted Magnetized Envelopes. *Alexander Y. Potekhin, Dmitry G. Yakovlev, Gilles Chabrier, & Oleg Y. Gnedin.* 594, 404 (2003)

Alphanumeric: PSR J1846−02558

Chandra X-Ray Imaging Spectroscopy of the Young Supernova Remnant Kesteven 75. *David J. Helfand, Benjamin F. Collins, & E. V. Gotthelf.* 582, 783 (2003)

Alphanumeric: R548

Constraining the Evolution of ZZ Ceti. *Anjum S. Mukadem, S. O. Kepler, D. E. Winget, R. E. Nather, M. Kilic, F. Mullally, T. von Hippel, S. J. Kleinman, A. Nitta, J. A. Guzik, P. A. Bradley, J. Matthews, K. Sekiguchi, D. J. Sullivan, T. Sullivan, R. R. Shobbrook, P. Birch, X. J. Jiang, D. W. Xu, S. Joshi, B. N. Ashoka, P. Ibbetson, E. Leibowitz, E. O. Ofek, E. G. Meištas, R. Janulis, D. Ališauskas, R. Kalytis, G. Handler, D. Kilkenny, D. O'Donoghue, D. W. Kurtz, M. Müller, P. Moskalik, W. Ogłoza, S. Zoła, J. Krzesiński, F. Johannessen, J. M. Gonzalez-Perez, J. -E. Solheim, R. Silvotti, S. Bernabei, G. Vauclair, N. Dolez, J. N. Fu, M. Chevreton, M. Manteiga, O. Suárez, A. Ulla, M. S. Cunha, T. S. Metcalfe, A. Kanaan, L. Fraga, A. F. M. Costa, O. Giovannini, G. Fontaine, P. Bergeron, M. S. O'Brien, D. Sanwal, M. A. Wood, T. J. Ahrens, N. Silvestri, E. W. Klumpe, S. D. Kawaler, R. Riddle, M. D. Reed, & T. K. Watson.* 594, 961 (2003)

Alphanumeric: RX J0513.9−6951

A New Clue to the Transition Mechanism between Optical High and Low States of the Supersoft X-Ray Source RX J0513.9−6951, Implied from the Recurrent Nova CI Aquilae 2000 Outburst Model. *Izumi Hachisu & Mariko Kato.* 588, 1003 (2003)

RX J0513.9−6951: The First Example of Accretion Wind Evolution, a Key Evolutionary Process to Type Ia Supernovae. *Izumi Hachisu & Mariko Kato.* 590, 445 (2003)

Alphanumeric: RX J0806.3+1527

Phase Coherent Timing of RX J0806.3+1527 with *ROSAT* and *Chandra*. *Tod E. Strohmayer.* 593, L39 (2003)

Unveiling the Nature of the 321 Second Modulation in RX J0806.3+1527: Near-Simultaneous *Chandra* and Very Large Telescope Observations. *G. L. Israel, S. Covino, L. Stella, C. W. Mauche, S. Campana, G. Marconi, W. Hummel, S. Mereghetti, U. Munari, & I. Negueruela.* 598, 492 (2003)

Alphanumeric: RX J0822−4300

Thermal Structure and Cooling of Superfluid Neutron Stars with Accreted Magnetized Envelopes. *Alexander Y. Potekhin, Dmitry G. Yakovlev, Gilles Chabrier, & Oleg Y. Gnedin.* 594, 404 (2003)

Alphanumeric: RX J1856.5−3754

Isolated Magnetar Spin-Down, Soft X-Ray Emission, and RX J1856.5−3754. *Kaya Mori & Malvin A. Ruderman.* 592, L75 (2003)

ALphanumeric: RX J1914.4+2456

Phase Coherent Timing of RX J0806.3+1527 with *ROSAT* and *Chandra*. *Tod E. Strohmayer.* 593, L39 (2003)

Unveiling the Nature of the 321 Second Modulation in RX J0806.3+1527: Near-Simultaneous *Chandra* and Very Large Telescope Observations. *G. L. Israel, S. Covino, L. Stella, C. W. Mauche, S. Campana, G. Marconi, W. Hummel, S. Mereghetti, U. Munari, & I. Negueruela.* 598, 492 (2003)

Alphanumeric: 1RXS J232953.9+062814

Anomalous Ultraviolet Line Flux Ratios in the Cataclysmic variables 1RXS J232953.9+062814, CE 315, BZ Ursae Majoris, and EY Cygni observed with the *Hubble Space Telescope* Space Telescope Imaging Spectrograph. *Boris T. Gänsicke, Paula Szkody, Domitilla de Martino, Klaus Beuermann, Knox S. Long, Edward M. Sion, Christian Knigge, Tom Marsh, & Ivan Hubeny.* 594, 443 (2003)

Alphanumeric: 2S 0918−549

X-Ray Spectroscopy of the Low-Mass X-Ray Binaries 2S 0918−549 and 4U 1543−624: Evidence for Neon-Rich Degenerate Donors. *Adrienne M. Juett & Deepto Chakrabarty.* 599, 498 (2003)

Alphanumeric: 2S 0921−63

Chandra and *XMM* Observations of the Accretion Disk Corona Source 0921−63. *T. R. Kallman, L. Angelini, B. Boroson, & J. Cottam.* 583, 861 (2003)

Alphanumeric: SAO 26804

Mid-Infrared Imaging of the First-Ascent Giant HD 233517. *R. Scott Fisher, C. M. Telesco, Robert K. Piña, & Roger F. Knacke.* 586, L91 (2003)

Alphanumeric: SAX J1748.9−2021

Discovery of X-Ray Burst Oscillations from a Neutron Star X-Ray Transient in the Globular Cluster NGC 6440. *P. Kaaret, J. J. M. in 't Zand, J. Heise, & J. A. Tomsick.* 598, 481 (2003)

Alphanumeric: SAX J1808.4−3658

An *XMM-Newton* Observation during the 2000 Outburst of SAX J1808.4−3658. *Rudy Wijands.* 588, 425 (2003)

Alphanumeric: sc26_2218

A Brown Dwarf Microlens Candidate from the Second Phase of the Optical Gravitational Lensing Experiment. *Martin C. Smith, Shude Mao, & Przemysław Woźniak.* 585, L65 (2003)

Alphanumeric: SDSS J132411.57+032050.5

Two Rare Magnetic Cataclysmic Variables with Extreme Cyclotron Features Identified in the Sloan Digital Sky Survey. *Paula Szkody, Scott F. Anderson, Gary Schmidt, Patrick B. Hall, Bruce Margon, Antonino Miceli, Mark SubbaRao, James Frith, Hugh Harris, Suzanne Hawley, Brandon Lawton, Ricardo Covarrubias, Kevin Covey, Xiaohui Fan, Thomas Murphy, Vijay Narayanan, Sean Raymond, Armin Rest, Michael A. Strauss, Christopher Stubbs, Edwin Turner, Wolfgang Voges, Amanda Bauer, J. Brinkmann, Gillian R. Knapp, & Donald P. Schneider.* 583, 902 (2003)

Alphanumeric: SDSS J155331.12+551614.5

Two Rare Magnetic Cataclysmic Variables with Extreme Cyclotron Features Identified in the Sloan Digital Sky Survey. *Paula Szkody, Scott F. Anderson, Gary Schmidt, Patrick B. Hall, Bruce Margon, Antonino Miceli, Mark SubbaRao, James Frith, Hugh Harris, Suzanne Hawley, Brandon Lawton, Ricardo Covarrubias, Kevin Covey, Xiaohui Fan, Thomas Murphy, Vijay Narayanan, Sean Raymond, Armin Rest, Michael A. Strauss, Christopher Stubbs, Edwin Turner, Wolfgang Voges, Amanda Bauer, J. Brinkmann, Gillian R. Knapp, & Donald P. Schneider.* 583, 902 (2003)

Alphanumeric: SGR 1806−20

New Evidence of Proto-Cyclotron Resonance in a Magnetar Strength Field from SGR 1806−20. *Alaa I. Ibrahim, Jean H. Swank, & William Parke.* 584, L17 (2003)

Alphanumeric: SGR 1900+14

An Extended Burst Tail from SGR 1900+14 with a Thermal X-Ray Spectrum. *Geoffrey T. Lenters, Peter M. Woods, Johnathan E. Goupell, Chryssa Kouveliotou, Ersin Göğüş, Kevin Hurley, Dmitry Frederiks, Sergey Golenetskii, & Jean Swank.* 587, 761 (2003)

The Radio Afterglow from the Giant Flare of SGR 1900+14: The Same Mechanism as Afterglows from Classic Gamma-Ray Bursts? *K. S. Cheng & X. Y. Wang.* 593, L85 (2003)

The 2001 April Burst Activation of SGR 1900+14: Pulse Properties and Torque. *P. M. Woods, C. Kouveliotou, E. Göğüş, M. H. Finger, M. Feroci, S. Mereghetti, J. H. Swank, K. Hurley, J. Heise, D. Smith, F. Frontera, C. Guidorzi, & C. Thompson.* 596, 464 (2003)

The 2001 April Burst Activation of SGR 1900+14: X-Ray Afterglow Emission. *M. Feroci, S. Mereghetti, P. Woods, C. Kouveliotou, E. Costa, D. D. Frederiks, S. V. Golenetskii, K. Hurley, E. Mazets, P. Soffitta, & M. Tavani.* 596, 470 (2003)

Alphanumeric: Sk 108

The Complete *Far Ultraviolet Spectroscopic Explorer* Spectrum of the Small Magellanic Cloud Star Sk 108. *Christoforos Mallouris.* 147, 265 (2003)

Alphanumeric: SS 433

Possible Photometric Evidence of Ejection of Bullet-like Features in the Relativistic Jet Source SS 433. *Sandip K. Chakrabarti, S. Pal, A. Nandi, B. G. Anandarao, & Soumen Mondal.* 595, L45 (2003)

Alphanumeric: 4U 1543−624

X-Ray Spectroscopy of the Low-Mass X-Ray Binaries 2S 0918−549 and 4U 1543−624: Evidence for Neon-Rich Degenerate Donors. *Adrienne M. Juett & Deepto Chakrabarty.* 599, 498 (2003)

Alphanumeric: 4U 1636−53

Origin and Interpretation of Kilohertz Quasi-periodic Oscillations from Strange Stars in an X-Ray Binary Systems: Theoretical Hydrodynamical Description. *Banibrata Mukhopadhyay, Subharthi Ray, Jishnu Dey, & Mira Dey.* 584, L83 (2003)

Alphanumeric: 4U 1700−37

Chandra Grating Spectroscopy of the X-Ray Binary 4U 1700−37 in a Flaring State. *Bram Boroson, Saeqa Dil Vrtilek, Timothy Kallman, & Michael Corcoran.* 592, 516 (2003)

Alphanumeric: 4U 1705−44

Correlated Timing and Spectral Behavior of 4U 1705−44. *Jean-Francois Olive, Didier Barret, & Marek Gierlinski.* 583, 416 (2003)

Alphanumeric: 4U 1728−34

Eddington-limited X-Ray Bursts as Distance Indicators. I. Systematic Trends and Spherical Symmetry in Bursts from 4U 1728−34. *Duncan K. Galloway, Dimitrios Psaltis, Deepto Chakrabarty, & Michael P. Muno.* 590, 999 (2003)

The Bursting Behavior of 4U 1728−34: The Parameters of a Neutron Star and the Geometry of a Neutron Star–Disk System. *Nickolai Shaposhnikov, Lev Titarchuk, & Frank Haberl.* 593, L35 (2003)

Alphanumeric: 4U 1820−30

Models of Type I X-Ray Bursts from 4U 1820−30. *Andrew Cumming.* 595, 1077 (2003)

Alphanumeric: VB 8

Transition Region Emission from Very Low Mass Stars. *Suzanne L. Hawley & Christopher M. Johns-Krull.* 588, L109 (2003)

Alphanumeric: VB 10

Transition Region Emission from Very Low Mass Stars. *Suzanne L. Hawley & Christopher M. Johns-Krull.* 588, L109 (2003)

Alphanumeric: WD 2331−475

Interstellar Deuterium, Nitrogen, and Oxygen Abundances toward GD 246, WD 2331−475, HZ 21, and Lanning 23: Results from the *FUSE* Mission. *Cristina M. Oliveira, Guillaume Hébrard, J. Christopher Howk, Jeffrey W. Kruk, Pierre Chayer, & H. Warren Moos.* 587, 235 (2003)

Alphanumeric: 1WGA J1216.9+3743

1WGA J1216.9+3743: *Chandra* Finds an Extremely Steep Ultraluminous X-Ray Source. *I. Cagnoni, R. Turolla, A. Treaves, J.-S. Huang, D. W. Kim, M. Elvis, & A. Celotti.* 582, 654 (2003)

Alphanumeric: WL 16

Structure of the Mid-Infrared–emitting Disk around WL 16. *Michael E. Ressler & Mary Barsony.* 584, 832 (2003)

Alphanumeric: WR 136

Constraints from *Infrared Space Observatory* Data on the Velocity Law and Clumpiness of WR 136. *R. Ignace, M. F. Quigley, & J. P. Cassinelli.* 596, 538 (2003)

Alphanumeric: WR 140

The Unusual 2001 Periastron Passage in the "Clockwork" Colliding-Wind Binary WR 140. *S. V. Marchenko, A. F. J. Moffat, D. Ballereau, J. Chauville, J. Zorec, G. M. Hill, K. Annuk, L. J. Corral, H. Demers, P. R. J. Eenens, K. P. Panov, W. Seggewiss, J. R. Thomson, & A. Villar-Sbaffi.* 596, 1295 (2003)

Alphanumeric: X1822−371

Bowen Flourescence from the Companion Star in X1822−371. *J. Casares, D. Steeghs, R. I. Hynes, P. A. Charles, & K. O'Brien.* 590, 1041 (2003)

Alphanumeric: XTE J1118+480

Spectral and Temporal Behavior of the Black Hole Candidate XTE J1118+480 as Observed with *BeppoSAX*. *F. Frontera, L. Amati, A. A. Zdziarski, T. Belloni, S. Del Sordo, N. Masetti, M. Orlandini, & E. Palazzi.* 592, 1110 (2003)

Multiwavelength Spectrum of the Black Hole XTE J1118+480 in Quiescence. *Jeffrey E. McClintock, Ramesh Narayan, Michael R. Garcia, Jerome A. Orosz, Ronald A. Remillard, & Stephen S. Murray.* 593, 435 (2003)

Alphanumeric: XTE J1550−564

X-Ray Jet Emission from the Black Hole X-Ray Binary XTE J1550−564 with *Chandra* in 2000. *John A. Tomsick, Stéphane Corbel, Rob Fender, Jon M. Miller, Jerome A. Orosz, Tasso Tzioumis, Rudy Wijnands, & Philip Kaaret.* 582, 933 (2003)

X-Ray Emission from the Jets of XTE J1550−564. *P. Kaaret, S. Corbel, J. A. Tomsick, R. Fender, J. M. Miller, J. A. Orosz, T. Tzioumis, & R. Wijnands.* 582, 945 (2003)

External Shock Model for the Large-Scale, Relativistic X-Ray Jets from the Microquasar XTE J1550−564. *X. Y. Wang, Z. G. Dai, & T. Lu.* 592, 347 (2003)

Alphanumeric: XTE J1550−1564

A Disk-Jet Interaction Model for the X-Ray Variability in Microquasars. *L. Nobili.* 582, 954 (2003)

Alphanumeric: XTE J1650−500

X-Ray Temporal Properties of XTE J1650−500 during Outburst Decay. *E. Kalemci, J. A. Tomsick, R. E. Rothschild, K. Pottschmidt, S. Corbel, R. Wijnands, J. M. Miller, & P. Kaaret.* 586, 419 (2003)

High-Frequency Quasi-Periodic Oscillations in the Black Holes X-Ray Transient XTE J1650−500. *Jeroen Homan, Marc Klein-Wolt, Sabrina Rossi, Jon M. Miller, Rudy Wijnands, Tomaso Belloni, Michiel van der Klis, & Walter H. G. Lewin.* 586, 1262 (2003)

X-Ray Flares and Oscillations from the Black Hole Candidate X-Ray Transient XTE J1650−500 at Low Luminosity. *John A. Tomsick, Emrah Kalemci, Stephane Corbel, & Philip Kaaret.* 592, 1100 (2003)

Alphanumeric: XTE J1806−246

Spectral Evolution of the Microquasar XTE J1550−564 over Its Entire 2000 Outburst. *J. Rodriguez, S. Corbel, & J. A. Tomsick.* 595, 1032 (2003)

Alphanumeric: XTE J1814−338

X-Ray Bursts from the Accreting Millisecond Pulsar XTE J1814−338. *Tod E. Strohmayer, Craig B. Markwardt, Jean H. Swank, & Jean in 't Zand.* 596, L67 (2003)

Alphanumeric: XTE J1859+226

Chandra Detections of Two Quiescent Black Hole X-Ray Transients. *John A. Tomsick, Stéphane Corbel, Rob Fender, Jon M. Miller, Jerome A. Orosz, Michael P. Rupen, Tasso Tzioumis, Rudy Wijnands, & Philip Kaaret.* 597, L133 (2003)

Alphanumeric: XTE J2123−058

The Optical Light Curves of XTE J2123−058. III. The Mass of the Binary Components and the Structure of the Quiescent Accretion Disk. *T. Shahbaz, C. Zurita, J. Casares, G. Dubus, P. A. Charles, R. Mark Wagner, & E. Ryan.* 585, 443 (2003)

Alphanumeric: YLW 15

Very Large Array Observations of Proper Motions in YLW 15. *S. Curiel, J. M. Girart, L. F. Rodríguez, & J. Canto.* 582, L109 (2003)

STARS: INTERIORS

Discovery of a New Class of Pulsating Stars: Gravity-Mode Pulsators among Subdwarf B Stars. *E. M. Green, G. Fontaine, M. D. Reed, K. Callerame, I. R. Seitenzahl, B. A. White, E. A. Hyde, R. Østensen, O. Cordes, P. Brassard, S. Falter, E. J. Jeffery, S. Dreizler, S. L. Schuh, M. Giovanni, H. Edelmann, J. Rigby, & A. Bronowska.* 583, L31 (2003)

The Chemical Composition of White Dwarfs as a Test of Convective Efficiency during Core Helium Burning. *Oscar Straniero, Immaculada Domínguez, Gianluca Imbriani, & Luciano Piersanti.* 583, 878 (2003)

The Y^2 Stellar Evolutionary Tracks. *Sukyoung K. Yi, Yong-Cheol Kim, & Pierre Demarque.* 144, 259 (2003)

Diffusive Nuclear Burning in Neutron Star Envelopes. *Philip Chang & Lars Bildsten.* 585, 464 (2003)

On the Rotational Evolution of Solar- and Late-Type Stars, Its Magnetic Orgins, and the Possibility of Stellar Gyrochronology. *Sydney A. Barnes.* 586, 464 (2003)

Magnetic Fields in Massive Stars. II. The Buoyant Rise of Magnetic Flux Tubes through the Radiative Interior. *K. B. MacGregor & J. P. Cassinelli.* 586, 480 (2003)

White Dwarf Asteroseismology and the $^{12}C(\alpha, \gamma)^{16}O$ Rate. *Travis S. Metcalfe.* 587, L43 (2003)

On the Coupling between Helium Settling and Rotation-induced Mixing in Stellar Radiative Zones. I. Analytical Approach. *Sylvie Vauclair & Sylvie Théado.* 587, 777 (2003)

On the Coupling between Helium Settling and Rotation-induced Mixing in Stellar Radiative Zones. II. Numerical Approach. *Sylvie Théado & Sylvie Vauclair.* 587, 784 (2003)

A Confirmation of the Optical Spectroscopy Approach: Discovery of Two More Pulsating DA (ZZ Ceti) White Dwarfs. *G. Fontaine, P. Bergeron, M. Billères, & S. Charpinet.* 591, 1184 (2003)

Evolution, Explosion, and Nucleosynthesis of Core-Collapse Supernovae. *Marco Limongi & Alessandro Chieffi.* 592, 404 (2003)

Canonical Extra Mixing in Low-Mass Red Giants. *Pavel A. Denissenkov & Don A. VandenBerg.* 593, 509 (2003)

The *s*-Process in Rotating Asymptotic Giant Branch Stars. *Falk Herwig, Norbert Langer, & Maria Lugaro.* 593, 1056 (2003)

On the Origin of HE 0107−5240, the Most Iron-deficient Star Presently Known. *Marco Limongi, Alessandro Chieffi, & Piercarlo Bonifacio.* 594, L123 (2003)

Stellar Hydrodynamics in Radiative Regions. *Patrick A. Young, Karen A. Knierman, Jane R. Rigby, & David Arnett.* 595, 1114 (2003)

The New Transiting Planet OGLE-TR-56b: Orbit and Atmosphere. *Dimitar D. Sasselov.* 596, 1327 (2003)

A Driving Mechanism for the Newly Discovered Long-Period Pulsating Subdwarf B Stars. *G. Fontaine, P. Brassard, S. Charpinet, E. M. Green, P. Chayer, M. Billères, & S. K. Randall.* 597, 518 (2003)

Onset of Shear Instability in Rotating Red Giants. *J. MacDonald & D. J. Mullan.* 598, 560 (2003)

Thermal Stability of Rotating Low-Mass Subgiants and Red Giants. *Pavel A. Denissenkov & Don A. VandenBerg.* 598, 1246 (2003)

Radiative Instability in Stellar Envelopes. *Richard B. Stothers.* 599, L103 (2003)

STARS: KINEMATICS

Studying the Galactic Bulge through the Spectroscopy of Microlensed Sources. II. Observations. *Stephen R. Kane & Kailash C. Sahu.* 582, 743 (2003)

Stellar Halo Parameters from 4588 Subdwarfs. *Andrew Gould.* 583, 765 (2003)

A Critical Examination of Halo White Dwarf Candidates. *P. Bergeron.* 586, 201 (2003)

Kinematics of Tidal Debris from ω Centauri's Progenitor Galaxy. *Arihiro Mizutani, Masashi Chiba, & Tsuyoshi Sakamoto.* 589, L89 (2003)

Sqeezars: Tidally Powered Stars Orbiting a Massive Black Hole. *Tal Alexander & Mark Morris.* 590, L25 (2003)

Chemical Abundances of Old Metal-rich Stars in the Solar Neighborhood. *Y. Q. Chen, G. Zhao, P. E. Nissen, G. S. Bai, & H. M. Qiu.* 591, 925 (2003)

ω Centauri: Not a Recent Merger but Self-enriched? *Imants Platais, Rosemary F. G. Wyse, Leslie Hebb, Young-Wook Lee, & Soo-Chang Rey.* 591, L127 (2003)

The Nature of Overluminous F Stars Observed in a Radial-Velocity Survey. *R. F. Griffin & A. A. Suchkov.* 147, 103 (2003)

Sagittarius A* Companion S0-2: A Probe of Very High Mass Star Formation. *Andrew Gould & Alice C. Quillen.* 592, 935 (2003)

An Upper Limit on the Granularity of the Local Stellar Halo. *Andrew Gould.* 592, L63 (2003)

ROSAT View of *Hipparcos* F Stars. *A. A. Suchkov, V. V. Makarov, & W. Voges.* 595, 1206 (2003)

The Oort Constants Measured from Proper Motions. *Rob P. Olling & Walter Dehnen.* 599, 274 (2003)

New Members of the TW Hydrae Association, β Pictoris Moving Group, and Tucana/Horologium Association. *Inseok Song, B. Zuckerman, & M. S. Bessell.* 599, 342 (2003)

STARS: LATE-TYPE

Are Coronae of Magnetically Active Stars Heated by Flares? II. Extreme Ultraviolet and X-Ray Flare Statistics and the Differential Emission Measure Distribution. *Manuel Güdel, Marc Audard, Vinay L. Kashyap, Jeremy J. Drake, & Edward F. Guinan.* 582, 423 (2003)

First Full Evolutionary Computation of the Helium Flash-induced Mixing in Population II Stars. *Santi Cassisi, Helmut Schlattl, Maurizio Salaris, & Achim Weiss.* 582, L43 (2003)

The Molecular Line Opacity of MgH in Cool Stellar Atmospheres. *P. F. Weck, A. Schweitzer, P. C. Stancil, P. H. Hauschildt, & K. Kirby.* 582, 1059 (2003)

Chandra, *Extreme Ultraviolet Explorer*, and Very Large Array Observations of the Active Binary System σ^2 Coronae Borealis. *Rachel A. Osten, Thomas R. Ayres, Alexander Brown, Jeffrey L. Linsky, & Anita Krishnamurthi.* 582, 1073 (2003)

Stellar Neutron Capture on Promethium: Implications for the *s*-Process Neutron Density. *R. Reifarth, C. Arlandini, M. Heil, F. Käppeler, P. V. Sedyshev, A. Mengoni, M. Herman, T. Rauscher, R. Gallino, & C. Travaglio.* 582, 1251 (2003)

The Molecular Continuum Opacity of ^{24}MgH in Cool Stellar Atmospheres. *P. F. Weck, A. Schweitzer, P. C. Stancil, P. H. Hauschildt, & K. Kirby.* 584, 459 (2003)

Discovery of an Ultracool Subdwarf: LSR 1425+7102, the First Star with Spectral Type sdM8.0. *Sébastien Lépine, Michael M. Shara, & R. Michael Rich.* 585, L69 (2003)

A *Far Ultraviolet Spectroscopic Explorer* Survey of Coronal Forbidden Lines in Late-Type Stars. *Seth Redfield, Thomas R. Ayres, Jeffrey L. Linsky, Thomas B. Ake, A. K. Dupree, Richard D. Robinson, & Peter R. Young.* 585, 993 (2003)

Transition from L to T Dwarfs of the Color-Magnitude Diagram. *Takashi Tsuji & Tadashi Nakajima.* 585, L151 (2003)

On the Rotational Evolution of Solar- and Late-Type Stars, Its Magnetic Orgins, and the Possibility of Stellar Gyrochronology. *Sydney A. Barnes.* 586, 464 (2003)

A Connection between the Morphology of the X-Ray Emission and Rotation for Solar-Type Stars in Open Clusters. *Sydney A. Barnes.* 586, L145 (2003)

Separating the X-Ray Emissions of UV Ceti A and B with *Chandra*. *Marc Audard, Manuel Güdel, & Stephen L. Skinner.* 589, 983 (2003)

Asterospheric Magnetic Fields and Winds of Cool Stars. *Carolus J. Schrijver, Marc L. DeRosa, & Alan M. Title.* 590, 493 (2003)

LSR 1610−0040: The First Early-Type L Subdwarf. *Sébastien Lépine, R. Michael Rich, & Michael M. Shara.* 591, L49 (2003)

A Near-Infrared Spectroscopic Screening of the Red Giant Populations in ω Centauri. *Livia Origlia, Francesco R. Ferraro, Michele Bellazzini, & Elena Pancino.* 591, 916 (2003)

Detailed Analysis of Nearby Bulgelike Dwarf Stars. III. α-Element and Heavy-Element Abundances. *Luciana Pompéia, Beatriz Barbuy, & Michel Grenon.* 592, 1173 (2003)

The Extreme-Ultraviolet Continuum of a Strong Stellar Flare. *D. J. Christian, M. Mathioudakis, D. Jevremović, J. Dupuis, S. Vennes, & A. Kawka.* 593, L105 (2003)

From the Heart of the Ghoul: C and N Abundances in the Corona of Algol B. *Jeremy J. Drake.* 594, 496 (2003)

Far-Ultraviolet Emissions of the Sun in Time: Probing Solar Magnetic Activity and Effects on Evolution of Paleoplanetary Atmospheres. *Edward F. Guinan, Ignasi Ribas, & Graham M. Harper.* 594, 561 (2003)

Acoustic Heating Models for the Basal Flux Star τ Ceti Including Time-dependent Ionization: Results for Ca II and Mg II Emission. *W. Rammacher & M. Cuntz.* 594, L51 (2003)

Rotational Periods of Very Young Brown Dwarfs and Very Low-Mass Stars in Chamaeleon I. *V. Joergens, M. Fernández, J. M. Carpenter, & R. Neuhäuser.* 594, 971 (2003)

Atmospheric Models of Red Giants with Massive-Scale Non–Local Thermodynamic Equilibrium. *C. I. Short & P. H. Hauschildt.* 596, 501 (2003)

New Theoretical Line List for the $B'\ ^2\Sigma^+ \leftarrow X\ ^2\Sigma^+$ System of ^{24}MgH. *S. Skory, P. F. Weck, P. C. Stancil, & K. Kirby.* 148, 599 (2003)

Really Cool Stars and the Star Formation History at the Galactic Center. *R. D. Blum, Solange V. Ramírez, K. Sellgren, & K. Olsen.* 597, 323 (2003)

Modeling the Ne IX Triplet Spectral Region of Capella with the *Chandra* and *XMM-Newton* Gratings. *Jan-Uwe Ness, Nancy S. Brickhouse, Jeremy J. Drake, & David P. Huenemoerder.* 598, 1277 (2003)

Magnesium Isotopic Abundance Ratios in Cool Stars. *David Yong, David L. Lambert, & Inese I. Ivans.* 599, 1357 (2003)

STARS: LOW-MASS, BROWN DWARFS

FeH Absorption in the Near-Infared Spectra of Late M and L Dwarfs. *Michael Cushing, John T. Rayner, Sumner P. Davis, & William D. Vacca.* 582, 1066 (2003)

Adaptive Optics Observations of Vega: Eight Detected Sources and Upper Limits to Planetary-Mass Companions. *Stanimir A. Metchev, Lynne A. Hillenbrand, & Russel J. White.* 582, 1102 (2003)

Very Low Mass Stars amd Brown Dwarfs in Taurus-Auriga. *Russel J. White & Gibor Basri.* 582, 1109 (2003)

Rotation and Activity in Mid-M to L Field Dwarfs. *Subhanjoy Mohanty & Gibor Basri.* 583, 451 (2003)

Calculations of the Far-Wing Line Profiles of Sodium and Potassium in the Atmospheres of Substellar-Mass Objects. *Adam Burrows & Maxim Volobuyev.* 583, 985 (2003)

Discovery of a Tight Brown Dwarf Companion to the Low-Mass Star LHS 2397a. *Melanie Freed, Laird M. Close, & Nick Siegler.* 584, 453 (2003)

Astrophysics of Young Star Binaries. *L. Prato, T. P. Greene, & M. Simon.* 584, 853 (2003)

Near-Field Microlensing and Its Effects on Stellar Transit Observations by *Kepler*. *Kailash C. Sahu & Ronald L. Gilliland.* 584, 1042 (2003)

A Survey for Circumstellar Disks around Young Substellar Objects. *Michael C. Liu, Joan Najita, & Alan T. Tokunaga.* 585, 372 (2003)

A Brown Dwarf Microlens Candidate from the Second Phase of the Optical Gravitational Lensing Experiment. *Martin C. Smith, Shude Mao, & Przemysław Woźniak.* 585, L65 (2003)

Discovery of an Ultracool Subdwarf: LSR 1425+7102, the First Star with Spectral Type sdM8.0. *Sébastien Lépine, Michael M. Shara, & R. Michael Rich.* 585, L69 (2003)

Transition from L to T Dwarfs of the Color-Magnitude Diagram. *Takashi Tsuji & Tadashi Nakajima.* 585, L151 (2003)

Explaining the Observed Polarization from Brown Dwarfs by Single Dust Scattering. *Sujan Sengupta.* 585, L155 (2003)

Binarity in Brown Dwarfs: T Dwarf Binaries Discovered with the *Hubble Space Telescope* Wide Field Planetary Camera 2. *Adam J. Burgasser, J. Davy Kirkpatrick, I. Neill Reid, Michael E. Brown, Cherie L. Miskey, & John E. Gizis.* 586, 512 (2003)

Tracing the Mass during Low-Mass Star Formation. IV. Observations and Modeling of the Submillimeter Continuum Emission from Class I Protostars. *Chadwick H. Young, Yancy L. Shirley, Neal J. Evans II, & Jonathan M. C. Rawlings.* 145, 111 (2003)

Modeling the Formation of Clouds in Brown Dwarf Atmospheres. *Curtis S. Cooper, David Sudarsky, John A. Milsom, Jonathan I. Lunine, & Adam Burrows.* 586, 1320 (2003)

A Planetary Companion to HD 40979 and Additional Planets Orbiting HD 12661 and HD 38529. *Debra A. Fischer, Geoffrey W. Marcy, R. Paul Butler, Steven S. Vogt, Gregory W. Henry, Dimitri Pourbaix, Bernard Walp, Anthony A. Misch, & Jason T. Wright.* 586, 1394 (2003)

The Galactic Disk Mass Function: Reconciliation of the *Hubble Space Telescope* and Nearby Determinations. *Gilles Chabrier.* 586, L133 (2003)

LSR 0602+3910: Discovery of a Bright Nearby L-Type Brown Dwarf. *Samir Salim, Sébastien Lépine, R. Michael Rich, & Michael M. Shara.* 586, L149 (2003)

Detection of Nine M8.0-L0.5 Binaries: The Very Low-Mass Binary Population and Its Implications for Brown Dwarf and Very Low Mass Star Formation. *Laird M. Close, Nick Siegler, Melanie Freed, & Beth Biller.* 587, 407 (2003)

Coronal X-Ray Emission from an Intermediate-Age Brown Dwarf. *Yohko Tsuboi, Yoshitomo Maeda, Eric D. Feigelson, Gordon P. Garmire, George Chartas, Koji Mori, & Steven H. Pravdo.* 587, L51 (2003)

Theoretical Spectra and Atmospheres of Extrasolar Giant Planets. *David Sudarsky, Adam Burrows, & Ivan Hubeny.* 588, 1121 (2003)

Transition Region Emission from Very Low Mass Stars. *Suzanne L. Hawley & Christopher M. Johns-Krull.* 588, L109 (2003)

On the Selection of Photometric Planetary Transits. *A. J. Drake.* 589, 1020 (2003)

New Low-Mass Members of the Taurus Star-forming Region. *K. L. Luhman, Cesar Briceno, John R. Stauffer, Lee Hartmann, D. Barrado y Navascues, & Nelson Caldwell.* 590, 348 (2003)

The First Detailed Look at a Brown Dwarf Disk. *I. Pascucci, D. Apai, Th. Henning, & C. P. Dullemond.* 590, L111 (2003)

LSR 1610−0040: The First Early-Type L Subdwarf. *Sébastien Lépine, R. Michael Rich, & Michael M. Shara.* 591, L49 (2003)

Accretion in Young Stellar/Substellar Objects. *James Muzerolle, Lynne Hillenbrand, Nuria Calvet, César Briceño, & Lee Hartmann.* 592, 266 (2003)

Evidence for a T Tauri Phase in Young Brown Dwarfs. *Ray Jayawardhana, Subhanjoy Mohanty, & Gibor Basri.* 592, 282 (2003)

The First Substellar Subdwarf? Discovery of a Metal-poor L Dwarf with Halo Kinematics. *Adam J. Burgasser, J. Davy Kirkpatrick, Adam Burrows, James Liebert, I. Neill Reid, John E. Gizis, Mark R. McGovern, L. Prato, & Ian S. McLean.* 592, 1186 (2003)

First Detection of Millimeter Dust Emission from Brown Dwarf Disks. *R. Klein, D. Apai, I. Pascucci, Th. Henning, & L. B. F. M. Waters.* 593, L57 (2003)

Gravity Indicators in the Near-Infrared Spectra of Brown Dwarfs. *N. I. Gorlova, M. R. Meyer, G. H. Rieke, & J. Liebert.* 593, 1074 (2003)

A Census of the Young Cluster IC 348. *K. L. Luhman, John R. Stauffer, A. A. Muench, G. H. Rieke, E. A. Lada, J. Bouvier, & C. J. Lada.* 593, 1093 (2003)

Magellan Echelle Spectroscopy of TW Hydrae Brown Dwarfs. *Subhanjoy Mohanty, Ray Jayawardhana, & David Barrado y Navascues.* 593, L109 (2003)

Spectroscopic Estimate of Surface Gravity for a Planetary Member in the σ Orionis Cluster. *E. L. Martín & M. R. Zapatero Osorio.* 593, L113 (2003)

The Spectra of T Dwarfs. II. Red Optical Data. *Adam J. Burgasser, J. Davy Kirkpatrick, James Liebert, & Adam Burrows.* 594, 510 (2003)

A *Hubble Space Telescope* Wide Field Planetary Camera 2 Survey for Brown Dwarf Binaries in the α Persei and the Pleiades Open Clusters. *Eduardo L. Martín, David Barrado y Navascués, Isabelle Baraffe, Hervé Bouy, & Scott Dahm.* 594, 525 (2003)

Line Intensities and Molecular Opacities of the FeH $F\ ^4\Delta_i$–$X\ ^4\Delta_i$ Transition. *M. Dulick, C. W. Bauschlicher, Jr., Adam Burrows, C. M. Sharp, R. S. Ram, & Peter Bernath.* 594, 651 (2003)

Rotational Periods of Very Young Brown Dwarfs and Very Low-Mass Stars in Chamaeleon I. *V. Joergens, M. Fernández, J. M. Carpenter, & R. Neuhäuser.* 594, 971 (2003)

The Quiescent Corona of VB 10. *Thomas A. Fleming, Mark S. Giampapa, & David Garza.* 594, 982 (2003)

A Possible Bifurcation in Atmospheres of Strongly Irradiated Stars and Planets. *Ivan Hubeny, Adam Burrows, & David Sudarsky.* 594, 1011 (2003)

Luminosity Functions of Young Clusters: Modeling the Substellar Mass Regime. *Peter R. Allen, David E. Trilling, David W. Koerner, & I. Neill Reid.* 595, 1222 (2003)

The NIRSPEC Brown Dwarf Spectroscopic Survey. I. Low-Resolution Near-Infrared Spectra. *Ian S. McLean, Mark R. McGovern, Adam J. Burgasser, J. Davy Kirkpatrick, L. Prato, & Sungsoo S. Kim.* 596, 561 (2003)

Beyond the T Dwarfs: Theoretical Spectra, Colors, and Detectability of the Coolest Brown Dwarfs. *Adam Burrows, David Sudarsky, & Jonathan I. Lunine.* 596, 587 (2003)

Multiwavelength Observations of Flares on AD Leonis. *Suzanne L. Hawley, Joel C. Allred, Christopher M. Johns-Krull, George H. Fisher, William P. Abbet, Ilya Alekseev, Stavros I. Avgoloupis, Susana E. Deustua, Alastair Gunn, John H. Seiradakis, Martin M. Sirk, & Jeff A. Valenti.* 597, 535 (2003)

Using Narrowband Photometry to Detect Young Brown Dwarfs in IC 348. *A. K. Mainzer & Ian S. McLean.* 597, 555 (2003)

High-Resolution Spectroscopic Follow-up of OGLE Planetary Transit Candidates in the Galactic Bulge: Two Possible Jupiter-Mass Planets and Two Blends. *Maciej Konacki, Guillermo Torres, Dimitar D. Sasselov, & Saurabh Jha.* 597, 1076 (2003)

Theoretical Considerations on the Properties of Accreting Millisecond Pulsars. *Lorne A. Nelson & Saul Rappaport.* 598, 431 (2003)

An Adaptive Optics Survey of M6.0–M7.5 Stars: Discovery of Three Very Low Mass Binary Systems Including Two Probably Hyades Members. *Nick Siegler, Laird M. Close, Eric E. Mamajek, & Melanie Freed.* 598, 1265 (2003)

High-Resolution Images of Orbital Motion in the Trapezium Cluster: First Scientific Results from the Multiple Mirror Telescope Deformable Secondary Mirror Adaptive Optics System. *Laird M. Close, Francois Wildi, Michael Lloyd-Hart, Guido Brusa, Don Fisher, Doug Miller, Armando Riccardi, Piero Salinari, Donald McCarthy, Roger Angel, Rich Allen, H. M. Martin, Richard G. Sosa, Manny Montoya, Matt Rademacher, Mario Rascon, Dylan Curley, Nick Siegler, & Wolfgang J. Duschl.* 599, 537 (2003)

High-Resolution Infrared Spectroscopy of the Brown Dwarf ϵ Indi Ba. *Verne V. Smith, Takashi Tsuji, Kenneth H. Hinkle, Katia Cunha, Robert D. Blum, Jeff A. Valenti, Stephen T. Ridgway, Richard R. Joyce, & Peter Bernath.* 599, L107 (2003)

STARS: LUMINOSITY FUNCTION, MASS FUNCTION

Stellar Halo Parameters from 4588 Subdwarfs. *Andrew Gould.* 583, 765 (2003)

Time Dependence of the Ultraviolet Radiation Field in the Local Interstellar Medium. *Antonio Parravano, David J. Hollenbach, & Christopher F. McKee.* 584, 797 (2003)

The Galactic Disk Mass Function: Reconciliation of the *Hubble Space Telescope* and Nearby Determinations. *Gilles Chabrier.* 586, L133 (2003)

New Low-Mass Members of the Taurus Star-forming Region. *K. L. Luhman, Cesar Briceno, John R. Stauffer, Lee Hartmann, D. Barrado y Navascues, & Nelson Caldwell.* 590, 348 (2003)

Stellar Contribution to the Galactic Bulge Microlensing Optical Depth. *Cheongho Han & Andrew Gould.* 592, 172 (2003)

Constraints on a Universal Initial Mass Function from Ultraviolet to Near-Infrared Galaxy Luminosity Densities. *Ivan K. Baldry & Karl Glazebrook.* 593, 258 (2003)

A Census of the Young Cluster IC 348. *K. L. Luhman, John R. Stauffer, A. A. Muench, G. H. Rieke, E. A. Lada, J. Bouvier, & C. J. Lada.* 593, 1093 (2003)

Spectroscopic Estimate of Surface Gravity for a Planetary Member in the σ Orionis Cluster. *E. L. Martín & M. R. Zapatero Osorio.* 593, L113 (2003)

A *Hubble Space Telescope* Wide Field Planetary Camera 2 Survey for Brown Dwarf Binaries in the α Persei and the Pleiades Open Clusters. *Eduardo L. Martín, David Barrado y Navascués, Isabelle Baraffe, Hervé Bouy, & Scott Dahm.* 594, 525 (2003)

Luminosity Functions of Young Clusters: Modeling the Substellar Mass Regime. *Peter R. Allen, David E. Trilling, David W. Koerner, & I. Neill Reid.* 595, 1222 (2003)

Galactic-Field Initial Mass Functions of Massive Stars. *Pavel Kroupa & Carsten Weidner.* 598, 1076 (2003)

The Mass Spectrum of Metal-free Stars Resulting from Photodissociation Feedback: A Scenario for the Formation of Low-Mass Population III Stars. *Kazuyuki Omukai & Yuzuru Yoshii.* 599, 746 (2003)

STARS: MAGNETIC FIELDS

Force-free Waves and Black Hole Magnetospheric Causality. *Brian Punsly.* 583, 842 (2003)

Understanding the Radio Emission Geometry of Multiple-Component Radio Pulsars from Retardation and Aberration Effects. *Y. Gupta & R. T. Gangadhara.* 584, 418 (2003)

General Relativistic Electromagnetism and Particle Acceleration in Pulsar Polar Cap. *Nobuyuki Sakai & Shinpei Shibata.* 584, 427 (2003)

New Evidence of Proto-Cyclotron Resonance in a Magnetar Strength Field from SGR 1806−20. *Alaa I. Ibrahim, Jean H. Swank, & William Parke.* 584, L17 (2003)

X-Rays in the Orion Nebula Cluster: Constraints on the Origins of Magnetic Activity in Pre–Main-Sequence Stars. *Eric D. Feigelson, James A. Gaffney III, Gordon Garmire, Lynne A. Hillenbrand, & Leisa Townsley.* 584, 911 (2003)

Magnetic Protoneutron Star Winds and r-Process Nucleosynthesis. *Todd A. Thompson.* 585, L33 (2003)

Coronal Mass Ejection: Initiation, Magnetic Helicity, and Flux Ropes. I. Boundary Motion–driven Evolution. *T. Amari, J. F. Luciani, J. J. Aly, Z. Mikic, & J. Linker.* 585, 1073 (2003)

Interchange Method in Compressible Magnetized Couette Flow: Magnetorotational and Magnetoconvective Instabilities. *Dimitris M. Christodoulou, John Contopoulos, & Demosthenes Kazanas.* 586, 372 (2003)

On the Rotational Evolution of Solar- and Late-Type Stars, Its Magnetic Orgins, and the Possibility of Stellar Gyrochronology. *Sydney A. Barnes.* 586, 464 (2003)

Magnetic Fields in Massive Stars. II. The Buoyant Rise of Magnetic Flux Tubes through the Radiative Interior. *K. B. MacGregor & J. P. Cassinelli.* 586, 480 (2003)

Evidence of a Cyclotron Feature in the Spectrum of the Anomalous X-Ray Pulsar 1RXS J170849−400910. *Nanda Rea, Gian Luca Israel, Luigi Stella, Tim Oosterbroek, Sandro Mereghetti, Lorella Angelini, Sergio Campana, & Stefano Covino.* 586, L65 (2003)

A Connection between the Morphology of the X-Ray Emission and Rotation for Solar-Type Stars in Open Clusters. *Sydney A. Barnes.* 586, L145 (2003)

Dynamo Action in Magnetohydrodynamics and Hall-Magnetohydrodynamics. *Pablo D. Mininni, Daniel O. Gómez, & Swadesh M. Mahajan.* 587, 472 (2003)

Magnetohydrodynamic Simulations of Accretion to a Star in the "Propeller" Regime. *M. M. Romanova, O. D. Toropina, Yu. M. Toropin, & R. V. E. Lovelace.* 588, 400 (2003)

The Fe XXII I(11.92 Å)/I(11.77 Å) Density Diagnostic Applied to the *Chandra* High-Energy Transmission Grating Spectrum of EX Hydrae. *Christopher W. Mauche, Duane A. Liedahl, & Kevin B. Fournier.* 588, L101 (2003)

Transition Region Emission from Very Low Mass Stars. *Suzanne L. Hawley & Christopher M. Johns-Krull.* 588, L109 (2003)

Magnetic Star-Disk Coupling in Classical T Tauri Systems. *Manfred Küker, Thomas Henning, & Günther Rüdiger.* 589, 397 (2003)

Coupling between Periodic and Aperiodic Variability in SAX J1808.4−3658. *M. T. Menna, L. Burderi, L. Stella, N. Robba, & M. van der Klis.* 589, 503 (2003)

Radiation of Neutron Stars Produced by Superfluid Core. *Anatoly A. Svidzinsky.* 590, 386 (2003)

Asterospheric Magnetic Fields and Winds of Cool Stars. *Carolus J. Schrijver, Marc L. DeRosa, & Alan M. Title.* 590, 493 (2003)

Onset of Mass Loss in Red Giants: Association with an Evolutionary Event. *D. J. Mullan & J. MacDonald.* 591, 1203 (2003)

Magnetic Flares on Asymptotic Giant Branch Stars. *Noam Soker & Joel H. Kastner.* 592, 498 (2003)

Magnetic Roster Winds and Keplerian Disks of Hot Stars. *M. Maheswaran.* 592, 1156 (2003)

Magnetic Inhibition of Accretion and Observability of Isolated Old Neutron Stars. *O. D. Toropina, M. M. Romanova, Yu. M. Toropin, & R. V. E. Lovelace.* 593, 472 (2003)

Chandra Observations of Magnetic White Dwarfs and Their Theoretical Implications. *Z. E. Musielak, M. Noble, J. G. Porter, & D. E. Winget.* 593, 481 (2003)

A Multiwavelength Study of the High-Field Magnetic White Dwarf EUVE J0317−85.5 (=RE J0317−853). *Stéphane Vennes, G. D. Schmidt, L. Ferrario, D. J. Christian, D. T. Wickramasinghe, & A. Kawka.* 593, 1040 (2003)

Thermal Structure and Cooling of Superfluid Neutron Stars with Accreted Magnetized Envelopes. *Alexander Y. Potekhin, Dmitry G. Yakovlev, Gilles Chabrier, & Oleg Y. Gnedin.* 594, 404 (2003)

Magnetic Field Morphology of Orion IRc2 from 86 GHz SiO Maser Polarization Images. *R. L. Plambeck, M. C. H. Wright, & R. Rao.* 594, 911 (2003)

Three-Dimensional Simulations of Disk Accretion to an Inclined Dipole. I. Magnetospheric Flows at Different Θ. *M. M. Romanova, G. V. Ustyugova, A. V. Koldoba, J. V. Wick, & R. V. E. Lovelace.* 595, 1009 (2003)

Magnetic White Dwarfs from the Sloan Digital Sky Survey: The First Data Release. *Gary D. Schmidt, Hugh C. Harris, James Liebert, Daniel J. Eisenstein, Scott F. Anderson, J. Brinkmann, Patrick B. Hall, Michael Harvanek, Suzanne Hawley, S. J. Kleinman, Gillian R. Knapp, Jurek Krzesinski, Don Q. Lamb, Dan Long, Jeffrey A. Munn, Eric H. Neilsen, Peter R. Newman, Atsuko Nitta, David J. Schlegel, Donald P. Schneider,*

Nicole M. Silvestri, J. Allyn Smith, Stephanie A. Snedden, Paula Szkody, & Dan Vanden Berk. 595, 1101 (2003)

Coronal Mass Ejection: Initiation, Magnetic Helicity, and Flux Ropes. II. Turbulent Diffusion–driven Evolution. *T. Amari, J. F. Luciani, J. J. Aly, Z. Mikic, & J. Linker.* 595, 1231 (2003)

BeppoSAX Serendipitous Discovery of the X-Ray Pulsar SAX J1802.7−2017. *G. Augello, R. Iaria, N. R. Robba, T. Di Salvo, L. Burderi, G. Lavagetto, & L. Stella.* 596, L63 (2003)

Coronal Element Abundances of the Post–Common-Envelope Binary V471 Tauri with *ASCA*. *Martin Still & Gaitee Hussain.* 597, 1059 (2003)

On the Axisymmetric Force-free Pulsar Magnetosphere. *Dmitri A. Uzdensky.* 598, 446 (2003)

A Giant Outburst at Millimeter Wavelengths in the Orion Nebula. *Geoffrey C. Bower, Richard L. Plambeck, Alberto Bolatto, Nate McCrady, James R. Graham, Imke de Pater, Michael C. Liu, & Frederick K. Baganoff.* 598, 1140 (2003)

The Relationship Between X-Ray Radiance and Magnetic Flux. *Alexei A. Pevtsov, George H. Fisher, Loren W. Acton, Dana W. Longcope, Christopher M. Johns-Krull, Charles C. Kankelborg, & Thomas R. Metcalf.* 598, 1387 (2003)

Hubble Space Telescope Observations of Ultraviolet Oscillations in WZ Sagittae during the Decline from Outburst. *William F. Welsh, Edward M. Sion, Patrick Godon, Boris T. Gänsicke, Christian Knigge, Knox S. Long, & Paula Szkody.* 599, 509 (2003)

Magnetic Braking Revisited. *N. Ivanova & Ronald E. Taam.* 599, 516 (2003)

Atmospheres and Spectra of Strongly Magnetized Neutron Stars. III. Partially Ionized Hydrogen Models. *Wynn C. G. Ho, Dong Lai, Alexander Y. Potekhin, & Gilles Chabrier.* 599, 1293 (2003)

A Movie of a Star: Multiepoch Very Long Baseline Array Imaging of the SiO Masers toward the Mira Variable TX Cam. *P. J. Diamond & A. J. Kemball.* 599, 1372 (2003)

STARS: MASS LOSS

Discovery of Multiple Molecular Shells in the Outer Envelope of IRC +10216. *D. Fong, M. Meixner, & R. Y. Shah.* 582, L39 (2003)

Hydrodynamic Models of Line-driven Accretion Disk Winds. III. Local Ionization Equilibrium. *Nicolas Antonio Pereyra & Timothy R. Kallman.* 582, 984 (2003)

A Flared, Orbiting, Dusty Disk around HD 233517. *M. Jura.* 582, 1032 (2003)

Main-Sequence Stellar Eruption Model for V838 Monocerotis. *Noam Soker & Romuald Tylenda.* 582, L105 (2003)

On the Luminosities and Temperatures of Extended X-Ray Emission from Planetary Nebulae. *Noam Soker & Joel H. Kastner.* 583, 368 (2003)

Detection of a Second, Strong Submillimeter HCN Laser Line toward Carbon Stars. *Peter Schilke & Karl M. Menten.* 583, 446 (2003)

Synthetic High-Resolution Line Spectra of Star-forming Galaxies below 1200 Å. *Carmelle Robert, Anne Pellerin, Alessandra Aloisi, Claus Leitherer, Charles Hoopes, & Timothy M. Heckman.* 144, 21 (2003)

Shaping Proto–Planetary and Young Planetary Nebulae with Collimated Fast Winds. *Chin-Fei Lee & Raghvendra Sahai.* 586, 319 (2003)

Detection of HCN Direct *l*-Type Transitions Probing Hot Molecular Gas in the Proto–Planetary Nebula CRL 618. *S. Thorwirth, F. Wyrowski, P. Schilke, K. M. Menten, S. Brünken, H. S. P. Müller, & G. Winnewisser.* 586, 338 (2003)

Physical Conditions in the Proto–Planetary Nebula CRL 618 Derived from Observations of Vibrationally Excited HC_3N. *F. Wyrowski, P. Schilke, S. Thorwirth, K. M. Menten, & G. Winnewisser.* 586, 344 (2003)

Interchange Method in Compressible Magnetized Couette Flow: Magnetorotational and Magnetoconvective Instabilities. *Dimitris M. Christodoulou, John Contopoulos, & Demosthenes Kazanas.* 586, 372 (2003)

Latitude-dependent Effects in the Stellar Wind of η Carinae. *Nathan Smith, Kris Davidson, Theodore R. Gull, Kazunori Ishibashi, & D. John Hillier.* 586, 432 (2003)

High-Resolution *Chandra* Spectroscopy of τ Scorpii: A Narrow-Line X-Ray Spectrum from a Hot Star. *David H. Cohen, Geneviève E. de Messières, Joseph J. MacFarlane, Nathan A. Miller, Joseph P. Cassinelli, Stanley P. Owocki, & Duane A. Liedahl.* 586, 495 (2003)

An Icy, Bipolar Proto–Planetary Nebula with Knotty Jets: IRAS 22036+5306. *R. Sahai, A. Zijlstra, C. Sánchez Contreras, & M. Morris.* 586, L81 (2003)

A Radio Flare from GRB 020405: Evidence for a Uniform Medium around a Massive Stellar Progenitor. *E. Berger, A. M. Soderberg, D. A. Frail, & S. R. Kulkarni.* 587, L5 (2003)

Are TiC Grains a Carrier of the 21 Micron Emission Band Observed around Post–Asymptotic Giant Branch Objects? *Takeshi Chigai, Tetsuo Yamamoto, Chihiro Kaito, & Yuki Kimura.* 587, 771 (2003)

The Remarkable Alternating Spectra of the Of?p Star HD 191612. *Nolan R. Walborn, Ian D. Howarth, Artemio Herrero, & Daniel J. Lennon.* 588, 1025 (2003)

Far Ultraviolet Spectroscopic Explorer Snapshot Survey of O VI Variability in the Winds of 66 OB-Type Stars. *N. Lehner, A. W. Fullerton, D. Massa, K. R. Sembach, & J. Zsargó.* 589, 526 (2003)

Turbulent Pressure in the Envelopes of Yellow Hypergiants and Luminous Blue Variables. *Richard B. Stothers.* 589, 960 (2003)

Wind-Interaction Models for the Early Afterglows of Gamma-Ray Bursts: The Case of GRB 021004. *Zhi-Yun Li & Roger A. Chevalier.* 589, L69 (2003)

The Three-dimensional Kinematics of Water Masers around the Semiregular Variable RT Virginis. *Hiroshi Imai, Katsunori M. Shibata, Kevin B. Marvel, Philip J. Diamond, Tetsuo Sasao, Makoto Miyoshi, Makoto Inoue, Victor Migenes, & Yasuhiro Murata.* 590, 460 (2003)

Discovery of Highly Dynamic Matter Enhancements along the Polar Axis and Equatorial Plane in the Luminous Blue Variable Binary HD 5980. *A. Villar-Sbaffi, Anthony F. J. Moffat, & N. St-Louis.* 590, 483 (2003)

Trapped Protostellar Winds and Their Breakout. *Francis P. Wilkin & Steven W. Stahler.* 590, 917 (2003)

Interaction between the Outflow and the Core in IRAM 04191+1522. *Shigehisa Takakuwa, Nagayoshi Ohashi, & Naomi Hirano.* 590, 932 (2003)

A Compact X-Ray Source and Possible X-Ray Jets within the Planetary Nebula Menzel 3. *Joel H. Kastner, Bruce Balick, Eric G. Blackman, Adam Frank, Noam Soker, Saeqa D. Vrtilek, & Jingqiang Li.* 591, L37 (2003)

WZ Sagittae: *FUSE* Spectroscopy of the 2001 Outburst. *Knox S. Long, Cynthia S. Froning, Boris Gänsicke, Christian Knigge, Edward M. Sion, & Paula Szkody.* 591, 1172 (2003)

Onset of Mass Loss in Red Giants: Association with an Evolutionary Event. *D. J. Mullan & J. MacDonald.* 591, 1203 (2003)

Multiwavelength Spectroscopy of the Bipolar Outflow from Cepheus E. *Michael D. Smith, Dirk Froebrich, & Jochen Eislöffel.* 592, 245 (2003)

Magnetic Flares on Asymptotic Giant Branch Stars. *Noam Soker & Joel H. Kastner.* 592, 498 (2003)

X-Ray Emission-Line Profile Modeling of O Stars: Fitting a Spherically Symmetric Analytic Wind-Shock Model to the *Chandra* Spectrum of ζ Puppis. *Roban H. Kramer, David H. Cohen, & Stanley P. Owocki.* 592, 532 (2003)

On Resonance-Line Profiles Predicted by Radiation-driven Disk-Wind Models. *Daniel Proga.* 592, L9 (2003)

Broad Hα Wings in Nebulae around Evolved Stars and in Young Planetary Nebulae. *A. Arrieta & S. Torres-Peimbert.* 147, 97 (2003)

Radio Emission from SN 2001gd in NGC 5033. *Christopher J. Stockdale, Kurt W. Weiler, Schuyler D. Van Dyk, Marcos J. Montes, Nino Panagia, Richard A. Sramek, M. A. Perez-Torres, & J. M. Marcaide.* 592, 900 (2003)

Molecular Outflows in The Young Open Cluster IC 348. *Jochen Eislöffel, Dirk Froebrich, Thomas Stanke, & Mark J. McCaughrean.* 595, 259 (2003)

Winds in R Coronae Borealis Stars. *Geoffrey C. Clayton, T. R. Geballe, & Luciana Bianchi.* 595, 412 (2003)

Possible Photometric Evidence of Ejection of Bullet-like Features in the Relativistic Jet Source SS 433. *Sandip K. Chakrabarti, S. Pal, A. Nandi, B. G. Anandarao, & Soumen Mondal.* 595, L45 (2003)

Quantitative Spectroscopy of O Stars at Low Metallicity: O Dwarfs in NGC 346. *J.-C. Bouret, T. Lanz, D. J. Hillier, S. R. Heap, I. Hubeny, D. J. Lennon, L. J. Smith, & C. J. Evans.* 595, 1182 (2003)

Constraints from *Infrared Space Observatory* Data on the Velocity Law and Clumpiness of WR 136. *R. Ignace, M. F. Quigley, & J. P. Cassinelli.* 596, 538 (2003)

Accretion-Induced Collimated Fast Wind Model for η Carinae. *Noam Soker.* 597, 513 (2003)

Theoretical Considerations on the Properties of Accreting Millisecond Pulsars. *Lorne A. Nelson & Saul Rappaport.* 598, 431 (2003)

The Dust Ring of Luminous Blue Variable Candidate HD 168625: Infrared Observations and Model Calculations. *Timothy B. O'Hara, Margaret Meixner, Angela K. Speck, Toshiya Ueta, & Matthew Bobrowsky.* 598, 1255 (2003)

X-Ray Emission from the Pre–Planetary Nebula Henize 3-1475. *Raghvendra Sahai, Joel H. Kastner, Adam Frank, Mark Morris, & Eric G. Blackman.* 599, L87 (2003)

Radiative Instability in Stellar Envelopes. *Richard B. Stothers.* 599, L103 (2003)

Infrared Properties of Solid Titanium Oxides: Exploring Potential Primary Dust Condensates. *T. Posch, F. Kerschbaum, D. Fabian, H. Mutschke, J. Dorschner, A. Tamanai, & T. Henning.* 149, 437 (2003)

STARS: NEUTRON

Spectral Lines from Rotating Neutron Stars. *Feryal Ozel & Dimitrios Psaltis.* 582, L31 (2003)

Chandra X-Ray Imaging Spectroscopy of the Young Supernova Remnant Kesteven 75. *David J. Helfand, Benjamin F. Collins, & E. V. Gotthelf.* 582, 783 (2003)

Search for the Optical Counterpart of the Nearby Pulsar J0108−1431. *Roberto P. Mignani, Richard N. Manchester, & George G. Pavlov.* 582, 978 (2003)

Relativistic Dyson Rings and Their Black Hole Limit. *M. Ansorg, A. Kleinwächter, & R. Meinel.* 582, L87 (2003)

SMC X-1 as an Intermediate-Stage Flaring X-Ray Pulsar. *Dae-Sik Moon, Stephen S. Eikenberry, & Ira M. Wasserman.* 582, L91 (2003)

Precursor Plerionic Activity and High-Energy Gamma-Ray Emission in the Supranova Model of Gamma-Ray Bursts. *Susumu Inoe, Dafne Guetta, & Franco Pacini.* 583, 379 (2003)

The Effect of Vacuum Polarization and Proton Cyclotron Resonances on Photon Propagation in Strongly Magnetized Plasmas. *Feryal Özel.* 583, 402 (2003)

Correlated Timing and Spectral Behavior of 4U 1705−44. *Jean-Francois Olive, Didier Barret, & Marek Gierlinski.* 583, 416 (2003)

Photodisintegration-triggered Nuclear Energy Release in Superbursts. *Hendrik Schatz, Lars Bildsten, & Andrew Cumming.* 583, L87 (2003)

XMM-Newton Spectroscopy of the Accretion-driven Millisecond X-Ray Pulsar XTE J1751−305 in Outburst. *J. M. Miller, R. Wijnands, M. Méndez, E. Kendziorra, A. Tiengo, M. van der Klis, D. Chakrabarty, B. M. Gaensler, & W. H. G. Lewin.* 583, L99 (2003)

A Compact Central Object in the Supernova Remnant Kesteven 79. *F. D. Seward, P. O. Slane, R. K. Smith, & M. Sun.* 584, 414 (2003)

Understanding the Radio Emission Geometry of Multiple-Component Radio Pulsars from Retardation and Aberration Effects. *Y. Gupta & R. T. Gangadhara.* 584, 418 (2003)

General Relativistic Electromagnetism and Particle Acceleration in Pulsar Polar Cap. *Nobuyuki Sakai & Shinpei Shibata.* 584, 427 (2003)

New Evidence of Proto-Cyclotron Resonance in a Magnetar Strength Field from SGR 1806−20. *Alaa I. Ibrahim, Jean H. Swank, & William Parke.* 584, L17 (2003)

The Probability Distribution of Binary Pulsar Coalescence Rates. I. Double Neutron Star Systems in the Galactic Field. *C. Kim, V. Kalogera, & D. R. Lorimer.* 584, 985 (2003)

Near-Field Microlensing and Its Effects on Stellar Transit Observations by *Kepler*. *Kailash C. Sahu & Ronald L. Gilliland.* 584, 1042 (2003)

Three New Long-Period X-Ray Pulsars Discovered in the Small Magellanic Cloud. *D. J. Macomb, D. W. Fox, R. C. Lamb, & T. A. Prince.* 584, L79 (2003)

Origin and Interpretation of Kilohertz Quasi-periodic Oscillations from Strange Stars in an X-Ray Binary Systems: Theoretical Hydrodynamical Description. *Banibrata Mukhopadhyay, Subharthi Ray, Jishnu Dey, & Mira Dey.* 584, L83 (2003)

Diffusive Nuclear Burning in Neutron Star Envelopes. *Philip Chang & Lars Bildsten.* 585, 464 (2003)

Magnetic Protoneutron Star Winds and r-Process Nucleosynthesis. *Todd A. Thompson.* 585, L33 (2003)

The Pulsar Wind Nebula Torus of PSR J0538+2817 and the Origin of Pulsar Velocities. *Roger W. Romani & C.-Y. Ng.* 585, L41 (2003)

The Quiescent Counterpart of the Soft Gamma-Ray Repeater SGR 0526−66. *S. R. Kulkarni, D. L. Kaplan, H. L. Marshall, D. A. Frail, T. Murakami, & D. Yonetoku.* 585, 948 (2003)

Equation of State and Opacities for Hydrogen Atmospheres of Neutron Stars with Strong Magnetic Fields. *Alexander Y. Potekhin & Gilles Chabrier.* 585, 955 (2003)

Polarized Gravitational Waves from Gamma-Ray Bursts. *Shiho Kobayashi & Peter Mészáros.* 585, L89 (2003)

X-Ray Emission from Multiphase Shock in the Large Magellanic Cloud Supernova Remnant N49. *Sangwook Park, David N. Burrows, Gordon P. Garmire, John A. Nousek, John P. Hughes, & Rosa Murphy Williams.* 586, 210 (2003)

r-Modes of Neutron Stars with Superfluid Cores. *Umin Lee & Shijun Yoshida.* 586, 403 (2003)

Detectability of Gravitational Waves from SN 1987A. *Giovanni Santostasi, Warren Johnson, & Juhan Frank.* 586, 1191 (2003)

Gamma-Ray Bursts from Delayed Collapse of Neutron Stars to Quark Matter Stars. *Z. Berezhiani, I. Bombaci, A. Drago, F. Frontera, & A. Lavagno.* 586, 1250 (2003)

The Evolution of LMC X-4 Flares: Evidence for Super Eddington Radiation Oosing through Inhomogeneous Polar Cap Accretion Flows? *Dae-Sik Moon, Stephen S. Eikenberry, & Ira M. Wasserman.* 586, 1280 (2003)

The Nonlinear Evolution of Massive Stellar Core Collapses that "Fizzle." *James N. Imamura, Brian K. Pickett, & Richard H. Durisen.* 587, 341 (2003)

Chandra Observations of the Anomalous X-Ray Pulsar 4U 0142+61. *Sandeep K. Patel, Chryssa Kouveliotou, Peter M. Woods, Allyn F. Tennant, Martin C. Weisskopf, Mark H. Finger, Colleen Wilson-Hodge, Ersin Göğüş, Michiel van der Klis, & Tomaso Belloni.* 587, 367 (2003)

X-Ray Spectroscopy of the Accreting Millisecond Pulsar XTE J0929−314 in Outburst. *Adrienne M. Juett, Duncan K. Galloway, & Deepto Chakrabarty.* 587, 754 (2003)

An Extended Burst Tail from SGR 1900+14 with a Thermal X-Ray Spectrum. *Geoffrey T. Lenters, Peter M. Woods, Johnathan E. Goupell, Chryssa Kouveliotou, Ersin Göğüş, Kevin Hurley, Dmitry Frederiks, Sergey Golenetskii, & Jean Swank.* 587, 761 (2003)

An *XMM-Newton* Observation during the 2000 Outburst of SAX J1808.4−3658. *Rudy Wijands.* 588, 425 (2003)

Extended Acceleration in Slot Gaps and Pulsar High-Energy Emission. *Alex G. Muslimov & Alice K. Harding.* 588, 430 (2003)

XMM-Newton Observations of PSR B1823−13: An Asymmetric Synchrotron Nebula around a Vela-like Pulsar. *B. M. Gaensler, N. S. Schulz, V. M. Kaspi, M. J. Pivovaroff, & W. E. Becker.* 588, 441 (2003)

X-Ray Studies of Two Neutron Stars in 47 Tucanae: Toward Constraints on the Equation of State. *C. O. Heinke, J. E. Grindlay, D. A. Lloyd, & P. D. Edmonds.* 588, 452 (2003)

The Optical Counterpart of the Isolated Neutron Star RX J1605.3+3249. *D. L. Kaplan, S. R. Kulkarni, & M. H. van Kerkwijk.* 588, L33 (2003)

Transfer of Polarized Radiation in Strongly Magnetized Plasmas and Thermal Emission from Magnetars: Effect of Vacuum Polarization. *Dong Lai & Wynn C. G. Ho.* 588, 962 (2003)

The Crustal Rigidity of a Neutron Star, and Implications for PSR 1828−11 and Other Precession Candidates. *Curt Cutler, Greg Ushomirsky, & Bennett Link.* 588, 975 (2003)

The Pulsar Wind Nebula in G11.2−0.3. *Mallory S. E. Roberts, Cindy R. Tam, Victoria M. Kaspi, Maxim Lyutikov, Gautam Vasisht, Michael Pivovaroff, Eric V. Gotthelf, & Nobuyuki Kawai.* 588, 992 (2003)

Geodetic Precession and Timing of the Relativistic Binary Pulsars PSR B1534+12 and PSR 1913+16. *Maciej Konacki, Alex Wolszczan, & Ingrid H. Stairs.* 589, 495 (2003)

Coupling between Periodic and Aperiodic Variability in SAX J1808.4−3658. *M. T. Menna, L. Burderi, L. Stella, N. Robba, & M. van der Klis.* 589, 503 (2003)

Hard X-Ray Flares Preceding Soft X-Ray Outbursts in Aquila X-1: A Link between Neutron Star and Black Hole Transitions. *Wenfei Yu, Marc Klein-Wolt, Rob Fender, & Michiel van der Klis.* 589, L33 (2003)

Gravitational Radiation from Gamma-Ray Burst Progenitors. *Shiho Kobayashi & Peter Mészáros.* 589, 861 (2003)

Magnetars in the Metagalaxy: An Origin for Ultra–High-Energy Cosmic Rays in the Nearby Universe. *Jonathan Arons.* 589, 871 (2003)

A Search for Pulsars in Quiescent Soft X-Ray Transients. I. *M. Burgay, L. Burderi, A. Possenti, N. D'Amico, R. N. Manchester, A. G. Lyne, F. Camilo, & S. Campana.* 589, 902 (2003)

A New Search Technique for Short Orbital Period Binary Pulsars. *Scott M. Ransom, James M. Cordes, & Stephen S. Eikenberry.* 589, 911 (2003)

The Infrared Counterpart to the Anomalous X-Ray Pulsar 1RXS J170849−400910. *G. L. Israel, S. Covino, R. Perna, R. Mignani, L. Stella, S. Campana, G. Marconi, G. Bono, S. Mereghetti, C. Motch, I. Negueruela, T. Oosterbroek, & L. Angelini.* 589, L93 (2003)

Radiation of Neutron Stars Produced by Superfluid Core. *Anatoly A. Svidzinsky.* 590, 386 (2003)

Toward an Empirical Theory of Pulsar Emission. VIII. Subbeam Circulation and the Polarization-Modal Structure of Conal Beams. *Joanna M. Rankin & R. Ramachandran.* 590, 411 (2003)

X-Ray Pulses from Accretion Columns: Contributions to the Energy Dependence of the Pulse Shape. *U. Kraus, C. Zahn, C. Weth, & H. Ruder.* 590, 424 (2003)

A *Chandra* X-Ray Study of the Dense Globular Cluster Terzan 5. *C. O. Heinke, P. D. Edmonds, J. E. Grindlay, D. A. Lloyd, H. N. Cohn, & P. M. Lugger.* 590, 809 (2003)

Eddington-limited X-Ray Bursts as Distance Indicators. I. Systematic Trends and Spherical Symmetry in Bursts from 4U 1728−34. *Duncan K. Galloway, Dimitrios Psaltis, Deepto Chakrabarty, & Michael P. Muno.* 590, 999 (2003)

The Nearby Neutron Star RX J0720.4−3125 from Radio to X-Rays. *D. L. Kaplan, M. H. van Kerkwijk, H. L. Marshall, B. A. Jacoby, S. R. Kulkarni, & D. A. Frail.* 590, 1008 (2003)

Radio Polarization of the Young High-Magnetic-Field Pulsar PSR J1119−6127. *Fronefield Crawford & Nathan C. Keim.* 590, 1020 (2003)

The Complete Z-Diagram of LMC X-2. *A. P. Smale, J. Homan, & E. Kuulkers.* 590, 1035 (2003)

Giant Pulses from PSR B0540−69 in the Large Magellanic Cloud. *Simon Johnston & Roger W. Romani.* 590, L95 (2003)

How Massive Single Stars End Their Life. *A. Heger, C. L. Fryer, S. E. Woosley, N. Langer, & D. H. Hartmann.* 591, 288 (2003)

Rayleigh-Taylor Gravity Waves and Quasi-periodic Oscillation Phenomena in X-Ray Binaries. *Lev Titarchuk.* 591, 354 (2003)

X-Ray Spectra of Young Pulsars and Their Wind Nebulae: Dependence on Spin-Down Energy Loss Rate. *E. V. Gotthelf.* 591, 361 (2003)

Atomic Spectral Features during Thermonuclear Flashes on Neutron Stars. *Lars Bildsten, Philip Chang, & Frits Paerels.* 591, L29 (2003)

Saturation of the r-Mode Instability. *Phil Arras, Eanna E. Flanagan, Sharon M. Morsink, A. Katrin Schenk, Saul A. Teukolsky, & Ira Wasserman.* 591, 1129 (2003)

The Variable Jet of the Vela Pulsar. *G. G. Pavlov, M. A. Teter, O. Kargaltsev, & D. Sanwal.* 591, 1157 (2003)

An X-Ray Pulsar in the Oxygen-rich Supernova Remnant G292.0+1.8. *John P. Hughes, Patrick O. Slane, Sangwook Park, Peter W. A. Roming, & David N. Burrows.* 591, L139 (2003)

The Role of Helium Stars in the Formation of Double Neutron Stars. *N. Ivanova, K. Belczynski, V. Kalogera, F. A. Rasio, & R. E. Taam.* 592, 475 (2003)

The X-Ray Spectral Changes of Scorpius X-1. *C. F. Bradshaw, B. J. Geldzahler, & E. B. Fomalont.* 592, 486 (2003)

Chandra Detection of a Pulsar Wind Nebula Associated with Supernova Remnant 3C 396. *C. M. Olbert, J. W. Keohane, K. A. Arnaud, K. K. Dyer, S. P. Reynolds, & S. Safi-Harb.* 592, L45 (2003)

Global Anisotrophy versus Small-Scale Fluctuations in Neutrino Flux in Core-Collapse Supernova Explosions. *Hideki Madokoro, Tetsuya Shimizu, & Yuko Mochizuki.* 592, 1035 (2003)

Linear Stability Analysis of Differentially Rotating Polytropes: New Results for the $M = 2$ F-Mode Dynamical Instability. *Shigeyuki Karino & Yoshiharu Eriguchi.* 592, 1119 (2003)

Isolated Magnetar Spin-Down, Soft X-Ray Emission, and RX J1856.5−3754. *Kaya Mori & Malvin A. Ruderman.* 592, L75 (2003)

Low-Mass Neutron Stars and the Equation of State of Dense Matter. *J. Carriere, C. J. Horowitz, & J. Piekarewicz.* 593, 463 (2003)

Magnetic Inhibition of Accretion and Observability of Isolated Old Neutron Stars. *O. D. Toropina, M. M. Romanova, Yu. M. Toropin, & R. V. E. Lovelace.* 593, 472 (2003)

X-Ray Observations of the Compact Central Object in Supernova Remnant G347.3−0.5. *J. S. Lazendic, P. O. Slane, B. M. Gaensler, P. P. Plucinsky, J. P. Hughes, D. K. Galloway, & F. Crawford.* 593, L27 (2003)

The Proper Motion, Age, and Initial Spin Period of PSR J0538+2817 in S147. *M. Kramer, A. G. Lyne, G. Hobbs, O. Löhmer, P. Carr, C. Jordan, & A. Wolszczan.* 593, L31 (2003)

Optical and X-Ray Properties of Cooling Neutron Stars. *Don A. Lloyd, Lars Hernquist, & Jeremy S. Heyl.* 593, 1024 (2003)

The Distance and Radius of the Neutron Star PSR B0656+14. *Walter F. Brisken, S. E. Thorsett, A. Golden, & W. M. Goss.* 593, L89 (2003)

On the Enhanced X-Ray Emission from SGR 1900+14 after the August 27 Giant Flare. *Ü. Ertan & M. A. Alpar.* 593, L93 (2003)

A Multifrequency Radio Study of Supernova Remnant G292.0+1.8 and Its Pulsar Wind Nebula. *B. M. Gaensler & B. J. Wallace.* 594, 326 (2003)

Gamma-Ray Lines from Asymmetric Supernovae. *Aimee L. Hungerford, Chris L. Fryer, & Michael S. Warren.* 594, 390 (2003)

Thermal Structure and Cooling of Superfluid Neutron Stars with Accreted Magnetized Envelopes. *Alexander Y. Potekhin, Dmitry G. Yakovlev, Gilles Chabrier, & Oleg Y. Gnedin.* 594, 404 (2003)

Search for the Optical Counterpart of the Vela Pulsar X-Ray Nebula. *R. P. Mignani, A. De Luca, O. Kargaltsev, G. G. Pavlov, S. Zaggia, P. A. Caraveo, & W. Becker.* 594, 419 (2003)

XMM-Newton Observation of the 5.25 Millisecond Transient Millisecond Pulsar XTE J1807−294 in Outburst. *S. Campana, M. Ravasio, G. L. Israel, V. Mangano, & T. Belloni.* 594, L39 (2003)

Chandra X-Ray Observatory Observations of the Globular Cluster M28 and Its Millisecond Pulsar PSR 1821−24. *Werner Becker, Douglas A. Swartz, George G. Pavlov, Ronald F. Elsner, Jonathan Grindlay, Roberto Mignani, Allyn F. Tennant, Don Backer, Luigi Pulone, Vincenzo Testa, & Martin C. Weisskopf.* 594, 798 (2003)

Gamma-Ray Bursts from Neutron Star Kicks. *Y. F. Huang, Z. G. Dai, T. Lu, K. S. Cheng, & X. F. Wu.* 594, 919 (2003)

The Arecibo 430 MHz Intermediate Galactic Latitude Survey: Discovery of Nine Radio Pulsars. *J. Navarro, S. B. Anderson, & P. C. Freire.* 594, 943 (2003)

A *Chandra* Observation of the Neutron Star X-Ray Transient and Eclipsing Binary MXB 1659−29 in Quiescence. *Rudy Wijnands, Mike Nowak, Jon M. Miller, Jeroen Homan, Stefanie Wachter, & Walter H. H. Lewin.* 594, 952 (2003)

Discovery of a New Pulsar Wind Nebula in the Large Magellanic Cloud. *B. M. Gaensler, S. P. Hendrick, S. P. Reynolds, & K. J. Borkowski.* 594, L111 (2003)

The Puzzling Dynamical Status of the Core of the Globular Cluster NGC 6752. *F. R. Ferraro, A. Possenti, E. Sabbi, P. Lagani, R. T. Rood, N. D'Amico, & L. Origlia.* 595, 179 (2003)

Nature of Fault Planes in Solid Neutron Star Matter. *P. B. Jones.* 595, 342 (2003)

High-Energy Neutrinos from Magnetars. *Bing Zhang, Z. G. Dai, P. Mészáros, E. Waxman, & A. K. Harding.* 595, 346 (2003)

One-armed Spiral Instability in Differentially Rotating Stars. *Motoyuki Saijo, Thomas W. Baumgarte, & Stuart L. Shapiro.* 595, 352 (2003)

Self-Consistency of Relativistic Observables with General Relativity in the White Dwarf–Neutron Star Binary PSR J1141−6545. *M. Bailes, S. M. Ord, H. S. Knight, & A. W. Hotan.* 595, L49 (2003)

Observation of TeV Gamma Rays from the Crab Nebula with Milagro Using a New Background Rejection Technique. *R. Atkins, W. Benbow, D. Berley, E. Blaufuss, J. Bussons, D. G. Coyne, R. S. Delay, T. DeYoung, B. L. Dingus, D. E. Dorfan, R. W. Ellsworth, A. Falcone, L. Fleysher, R. Fleysher, G. Gisler, M. M. Gonzalez, J. A. Goodman, T. J. Haines, E. Hays, C. M. Hoffman, L. A. Kelley, R. W. Laird, J. McCullough, J. E. McEnery, R. S. Miller, A. I. Mincer, M. F. Morales, P. Nemethy, D. Noyes, J. M. Ryan, F. W. Samuelson, M. Schneider, B. Shen, A. Shoup, G. Sinnis, A. J. Smith, G. W. Sullivan, O. T. Tumer, K. Wang, M. Wascko, D. A. Williams, S. Westerhoff, M. E. Wilson, X. Xu, & G. B. Yodh.* 595, 803 (2003)

A Comparison of Measured Crab and Vela Glitch Healing Parameters with Predictions of Neutron Star Models. *Fronefield Crawford & Marek Demiański.* 595, 1052 (2003)

X-Ray Bursts in Neutron Star and Black Hole Binaries from Unconvetional Stellar Aspect Experiment and *Rossi X-Ray Timing Explorer* Data: Detections and Upper Limits. *D. Tournear, E. Raffauf, E. D. Bloom, W. Focke, B. Giebels, G. Godfrey, P. M. Saz Parkinson, K. T. Reilly, K. S. Wood, P. S. Ray, M. T. Wolff, R. M. Bandyopadhyay, M. N. Lovellette, & Jeffrey D. Scargle.* 595, 1058 (2003)

The Energy Dependence of Millisecond Oscillations in Thermonuclear X-Ray Bursts. *Michael P. Muno, Feryal Oezel, & Deepto Chakrabarty.* 595, 1066 (2003)

Models of Type I X-Ray Bursts from 4U 1820−30. *Andrew Cumming.* 595, 1077 (2003)

Long-Term X-Ray Variability in GX 13+1: Energy-dependent Periodic Modulation. *Robin H. D. Corbet.* 595, 1086 (2003)

The 2001 April Burst Activation of SGR 1900+14: X-Ray Afterglow Emission. *M. Feroci, S. Mereghetti, P. Woods, C. Kouveliotou, E. Costa, D. D. Frederiks, S. V. Golenetskii, K. Hurley, E. Mazets, P. Soffitta, & M. Tavani.* 596, 470 (2003)

Solid Quark Stars? *Renxin Xu.* 596, L59 (2003)

BeppoSAX Serendipitous Discovery of the X-Ray Pulsar SAX J1802.7−2017. *G. Augello, R. Iaria, N. R. Robba, T. Di Salvo, L. Burderi, G. Lavagetto, & L. Stella.* 596, L63 (2003)

X-Ray Bursts from the Accreting Millisecond Pulsar XTE J1814−338. *Tod E. Strohmayer, Craig B. Markwardt, Jean H. Swank, & Jean in 't Zand.* 596, L67 (2003)

Can the Age Discrepancies of Neutron Stars Be Circumvented by an Accretion-assisted Torque? *Y. Shi & R. X. Xu.* 596, L75 (2003)

Unraveling the Cooling Trend of the Soft Gamma Repeater SGR 1627−41. *C. Kouveliotou, D. Eichler, P. M. Woods, Y. Lyubarsky, S. K. Patel, E. Göğüş, M. van der Klis, A. Tennant, S. Wachter, & K. Hurley.* 596, L79 (2003)

Hollow Cone Accretion Columns and Light-Bending Effects. *D. A. Leahy.* 596, 1131 (2003)

The Vela Pulsar's Proper Motion and Parallax Derived from VLBI Observations. *R. Dodson, D. Legge, J. E. Reynolds, & P. M. McCulloch.* 596, 1137 (2003)

The Atoll Source States of 4U 1608−52. *Steve van Straaten, Michiel van der Klis, & Mariano Méndez.* 596, 1155 (2003)

The Evolution of the High-Energy Tail in the Quiescent Spectrum of the Soft X-Ray Transient Aquila X-1. *S. Campana & L. Stella.* 597, 474 (2003)

The Galactic Population of Low- and Intermediate-Mass X-Ray Binaries. *Eric Pfahl, Saul Rappaport, & Philipp Podsiadlowski.* 597, 1036 (2003)

Broad Redshifted Line as Signature of Outflow. *Lev Titarchuk, Demos Kazanas, & Peter A. Becker.* 598, 411 (2003)

On the Axisymmetric Force-free Pulsar Magnetosphere. *Dmitri A. Uzdensky.* 598, 446 (2003)

A Limit on the Number of Isolated Neutron Stars Detected in the *ROSAT* Bright Source Catalogue. *Robert E. Rutledge, Derek W. Fox, Milan Bogosavljevic, & Ashish Mahabal.* 598, 458 (2003)

The X-Ray Binary GRS 1741.9−2853 in Outburst and Quiescence. *M. P. Muno, F. K. Baganoff, & J. S. Arabadjis.* 598, 474 (2003)

Discovery of X-Ray Burst Oscillations from a Neutron Star X-Ray Transient in the Globular Cluster NGC 6440. *P. Kaaret, J. J. M. in 't Zand, J. Heise, & J. A. Tomsick.* 598, 481 (2003)

Analysis of the Quiescent Low-Mass X-Ray Binary Populaton in Galactic Globular Clusters. *C. O. Heinke, J. E. Grindlay, P. M. Lugger, H. N. Cohn, P. D. Edmonds, D. A. Lloyd, & A. M. Cool.* 598, 501 (2003)

A *Chandra* X-Ray Study of the Globular Cluster M80. *C. O. Heinke, J. E. Grindlay, P. M. Lugger, H. N. Cohn, P. D. Edmonds, D. A. Lloyd, & S. S. Murray.* 598, 516 (2003)

Two-Pole Caustic Model for High-Energy Light Curves of Pulsars. *J. Dyks & B. Rudak.* 598, 1201 (2003)

Thermonuclear Stability of Material Accreting onto a Neutron Star. *Ramesh Narayan & Jeremy S. Heyl.* 599, 419 (2003)

Can Thin Disks Produce Anomalous X-Ray Pulsars? *K. Yavuz Eksi & M. Ali Alpar.* 599, 450 (2003)

Three Binary Millisecond Pulsars in NGC 6266. *A. Possenti, N. D'Amico, R. N. Manchester, F. Camilo, A. G. Lyne, J. Sarkissian, & A. Corongiu.* 599, 475 (2003)

The Glitches of the Anomalous X-Ray Pulsar 1RXS J170849.0−400910. *S. Dall'Osso, G. L. Israel, L. Stella, A. Possenti, & E. Perozzi.* 599, 485 (2003)

X-Ray Spectroscopy of the Low-Mass X-Ray Binaries 2S 0918−549 and 4U 1543−624: Evidence for Neon-Rich Degenerate Donors. *Adrienne M. Juett & Deepto Chakrabarty.* 599, 498 (2003)

Probing the Presence of a Single or Binary Black Hole in the Globular Cluster NGC 6752 with Pulsar Dynamics. *Monica Colpi, Michela Mapelli, & Andrea Possenti.* 599, 1260 (2003)

Magnetic Braking and Viscous Damping of Differential Rotation in Cylindrical Stars. *James N. Cook, Stuart L. Shapiro, & Branson C. Stephens.* 599, 1272 (2003)

Atmospheres and Spectra of Strongly Magnetized Neutron Stars. III. Partially Ionized Hydrogen Models. *Wynn C. G. Ho, Dong Lai, Alexander Y. Potekhin, & Gilles Chabrier.* 599, 1293 (2003)

PSR J1909−3744: A Binary Millisecond Pulsar with a Very Small Duty Cycle. *B. A. Jacoby, M. Bailes, M. H. van Kerkwijk, S. Ord, A. Hotan, S. R. Kulkarni, & S. B. Anderson.* 599, L99 (2003)

STARS: NOVAE, CATACLYSMIC VARIABLES

Composite Accretion Disk and White Dwarf Model Analyses of the Quiescence of Dwarf Novae: EM Cygni, CZ Orionis, and WW Ceti. *Lisa Winter & Edward M. Sion.* 582, 352 (2003)

Cataclysmic Variables: An Empirical Angular Momentum Loss Prescription From Open Cluster Data. *N. Andronov, M. Pinsonneault, & A. Sills.* 582, 358 (2003)

Hydrodynamic Models of Line-driven Accretion Disk Winds. III. Local Ionization Equilibrium. *Nicolas Antonio Pereyra & Timothy R. Kallman.* 582, 984 (2003)

System Parameters of DW Ursae Majoris. *S. Araujo-Betancor, C. Knigge, K. S. Long, D. W. Hoard, P. Szkody, B. Rogers, K. Krisciunas, V. S. Dhillon, R. I. Hynes, J. Patterson, & J. Kemp.* 583, 437 (2003)

Two Rare Magnetic Cataclysmic Variables with Extreme Cyclotron Features Identified in the Sloan Digital Sky Survey. *Paula Szkody, Scott F. Anderson, Gary Schmidt, Patrick B. Hall, Bruce Margon, Antonino Miceli, Mark SubbaRao, James Frith, Hugh Harris, Suzanne Hawley, Brandon Lawton, Ricardo Covarrubias, Kevin Covey, Xiaohui Fan, Thomas Murphy, Vijay Narayanan, Sean Raymond, Armin Rest, Michael A. Strauss, Christopher Stubbs, Edwin Turner, Wolfgang Voges, Amanda Bauer, J. Brinkmann, Gillian R. Knapp, & Donald P. Schneider.* 583, 902 (2003)

Hubble Space Telescope STIS Spectroscopy of the White Dwarfs in the Ultrashort-Period Dwarf Novae VY Aquarii and WX Ceti. *Edward M. Sion, Paula Szkody, Fuhua Cheng, Boris T. Gänsicke, & Steve B. Howell.* 583, 907 (2003)

Accretion and Outflow in Interacting Binary Systems: *Far Ultraviolet Spectropscopic Explorer* Observations of the Nova-like Cataclysmic Variable UX Ursae Majoris. *Cynthia S. Froning, Knox S. Long, & Christian Knigge.* 584, 433 (2003)

The Extraordinary X-Ray Light Curve of the Classical Nova V1494 Aquilae (1999 No. 2) in Outburst: The Discovery of Pulsations and a "Burst." *Jeremy J. Drake, R. Mark Wagner, Sumner Starrfield, Yousaf Butt, Joachim Krautter, H. E. Bond, M. Della Valle, R. D. Gehrz, Charles E. Woodward, A. Evans, M. Orio, P. Hauschildt, M. Hernanz, K. Mukai, & J. W. Truran.* 584, 448 (2003)

Revised Analysis of the Supersoft X-Ray Phase, Helium Enrichment, and Turnoff Time in the 2000 Outburst of the Recurrent Nova CI Aquilae. *Izumi Hachisu, Mariko Kato, & Bradley E. Schaefer.* 584, 1008 (2003)

Modeling Accretional Heating in Dwarf Novae. *Patrick Godon & Edward M. Sion.* 586, 427 (2003)

Two Types of X-Ray Spectra in Cataclysmic Variables. *Koji Mukai, A. Kinkhabwala, J. R. Peterson, S. M. Kahn, & F. Paerels.* 586, L77 (2003)

A Local One-Zone Model of Magnetohydrodynamic Turbulence in Dwarf Nova Disks. *Takayoshi Sano & James M. Stone.* 586, 1297 (2003)

Hubble Space Telescope Space Telescope Imaging Spectrograph Spectroscopy of the Intermediate Polar EX Hydrae. *Kunegunda E. Belle, Steve B. Howell, Edward M. Sion, Knox S. Long, & Paula Szkody.* 587, 373 (2003)

High-Velocity Jets in Recurrent Nova Outbursts. *Mariko Kato & Izumi Hachisu.* 587, L39 (2003)

Jet-induced Nucleosynthesis in Misaligned Microquasars. *Yousaf M. Butt, Thomas J. Maccarone, & Nikos Prantzos.* 587, 748 (2003)

A New Clue to the Transition Mechanism between Optical High and Low States of the Supersoft X-Ray Source RX J0513.9−6951, Implied from the Recurrent Nova CI Aquilae 2000 Outburst Model. *Izumi Hachisu & Mariko Kato.* 588, 1003 (2003)

RX J0513.9−6951: The First Example of Accretion Wind Evolution, a Key Evolutionary Process to Type Ia Supernovae. *Izumi Hachisu & Mariko Kato.* 590, 445 (2003)

A *Chandra* X-Ray Study of the Dense Globular Cluster Terzan 5. *C. O. Heinke, P. D. Edmonds, J. E. Grindlay, D. A. Lloyd, H. N. Cohn, & P. M. Lugger.* 590, 809 (2003)

Resolved Jets and Long-Period Black Hole X-Ray Novae. *M. R. Garcia, J. M. Miller, J. E. McClintock, A. R. King, & J. Orosz.* 591, 388 (2003)

WZ Sagittae: *FUSE* Spectroscopy of the 2001 Outburst. *Knox S. Long, Cynthia S. Froning, Boris Gänsicke, Christian Knigge, Edward M. Sion, & Paula Szkody.* 591, 1172 (2003)

On Resonance-Line Profiles Predicted by Radiation-driven Disk-Wind Models. *Daniel Proga.* 592, L9 (2003)

Cataclysmic Variable Evolution with Circumbinary Disks. *Ronald E. Taam, Eric L. Sandquist, & Guillaume Dubus.* 592, 1124 (2003)

Hubble Space Telescope Spectroscopy of the Unexpected 2001 July Outburst of the Dwarf Nova WZ Sagittae. *Edward M. Sion, Boris T. Gaensicke, Knox S. Long, Paula Szkody, Fu-Hua Cheng, Steve B. Howell, Patrick Godon, William F. Welsh, Sumner Starrfield, Christian Knigge, & Warren M. Sparks.* 592, 1137 (2003)

Ultraviolet Spectra of Cataclysmic Variable Accretion Disks with Nonsteady $T(r)$ Laws. *Jerome A. Orosz & Richard A. Wade.* 593, 1032 (2003)

The Scattered X-Ray Halo around Nova Cygni 1992: Testing a Model for Interstellar Dust. *B. T. Draine & Jonathan C. Tan.* 594, 347 (2003)

The Origin of Soft X-Rays in DQ Herculis. *K. Mukai, M. Still, & F. A. Ringwald.* 594, 428 (2003)

An *XMM-Newton* Observation of Nova LMC 1995: A Bright Supersoft X-Ray Source. *Marina Orio, Wouter Hartmann, Martin Still, & Jochen Greiner.* 594, 435 (2003)

Anomalous Ultraviolet Line Flux Ratios in the Cataclysmic variables 1RXS J232953.9+062814, CE 315, BZ Ursae Majoris, and EY Cygni observed with the *Hubble Space Telescope* Space Telescope Imaging Spectrograph. *Boris T. Gänsicke, Paula Szkody, Domitilla de Martino, Klaus Beuermann, Knox S. Long, Edward M. Sion, Christian Knigge, Tom Marsh, & Ivan Hubeny.* 594, 443 (2003)

X-Ray Evidence of the Common Envelope Phase of V471 Tauri. *Jeremy J. Drake & Marek J. Sarna.* 594, L55 (2003)

A *Chandra* Low Energy Transmission Grating Spectrometer Observation of V4743 Sagittarii: A Supersoft X-Ray Source and a Violently Variable Light Curve. *J.-U. Ness, S. Starrfield, V. Burwitz, R. Wichmann, P. Hauschildt, J. J. Drake, R. M. Wagner, H. E. Bond, J. Krautter, M. Orio, M. Hernanz, R. D. Gehrz, C. E. Woodward, Y. Butt, K. Mukai, S. Balman, & J. W. Truran.* 594, L127 (2003)

An Extensive Census of *Hubble Space Telescope* Counterparts to *Chandra* X-Ray Sources in the Globular Cluster 47 Tucanae. I. Astrometry and Photometry. *Peter D. Edmonds, Ronald L. Gilliland, Craig O. Heinke, & Jonathan E. Grindlay.* 596, 1177 (2003)

An Extensive Census of *Hubble Space Telescope* Counterparts to *Chandra* X-Ray Sources in the Globular Cluster 47 Tucanae. II. Time Series and Analysis. *Peter D. Edmonds, Ronald L. Gilliland, Craig O. Heinke, & Jonathan E. Grindlay.* 596, 1197 (2003)

Near-Infrared Spectrophotometry and the CO Emission in V2274 Cygni (Nova Cygni 2001 No. 1). *Richard J. Rudy, William L. Dimpfl, David K. Lynch, S. Mazuk, Catherine C. Venturini, John C. Wilson, R. C. Puetter, & R. Brad Perry.* 596, 1229 (2003)

Measuring White Dwarf Accretion Rates via Their Effective Temperatures. *Dean Townsley & Lars Bildsten.* 596, L227 (2003)

X-Ray Variability of the Magnetic Cataclysmic Variable V1432 Aquilae and the Seyfert Galaxy NGC 6814. *K. Mukai, C. Hellier, G. Madejski, J. Patterson, & D. R. Skillman.* 597, 479 (2003)

The Impact of the Chemical Stratification of White Dwarfs on the Classification of Classical Novae. *Jordi José, Margarita Hernanz, Enrique García-Berro, & Pilar Gil-Pons.* 597, L41 (2003)

A Probable Dwarf Nova Outburst in the Core of the Globular Cluster M22. *Jay Anderson, Adrienne M. Cool, & Ivan R. King.* 597, L137 (2003)

Unveiling the Nature of the 321 Second Modulation in RX J0806.3+1527: Near-Simultaneous *Chandra* and Very Large Telescope Observations. *G. L. Israel, S. Covino, L. Stella, C. W. Mauche, S. Campana, G. Marconi, W. Hummel, S. Mereghetti, U. Munari, & I. Negueruela.* 598, 492 (2003)

Analysis of the Quiescent Low-Mass X-Ray Binary Populaton in Galactic Globular Clusters. *C. O. Heinke, J. E. Grindlay, P. M. Lugger, H. N. Cohn, P. D. Edmonds, D. A. Lloyd, & A. M. Cool.* 598, 501 (2003)

A *Chandra* X-Ray Study of the Globular Cluster M80. *C. O. Heinke, J. E. Grindlay, P. M. Lugger, H. N. Cohn, P. D. Edmonds, D. A. Lloyd, & S. S. Murray.* 598, 516 (2003)

A Limit Cycle Model for Long-Term Optical Variations of V Sagittae: The Second Example of Accretion Wind Evolution. *Izumi Hachisu & Mariko Kato.* 598, 527 (2003)

Chandra Observations of the Dwarf Nova WX Hydri in Quiescence. *Rosalba Perna, Jonathan McDowell, Kristen Menou, John Raymond, & Mikhail V. Medvedev.* 598, 545 (2003)

Remarkable Changes in the Near-Infrared Spectrum of the Nova-like Variable V4332 Sagittarii. *Dipankar P. K. Banerjee, Watson P. Varricatt, Nagarhalli M. Ashok, & Olli Launila.* 598, L31 (2003)

A New ^{17}F(p, γ)^{18}Ne Reaction Rate and Its Implications for Nova Nucleosynthesis. *S. Parete-Koon, W. R. Hix, M. S. Smith, S. Starrfield, D. W. Bardayan, M. W. Guidry, & A. Mezzacappa.* 598, 1239 (2003)

V445 Puppis: Helium Nova on a Massive White Dwarf. *Mariko Kato & Izumi Hachisu.* 598, L107 (2003)

X-Ray Sources with Periodic Variability in a Deep *Chandra* Image of the Galactic Center. *M. P. Muno, F. K. Baganoff, M. W. Bautz, W. N. Brandt, G. P. Garmire, & G. R. Ricker.* 599, 465 (2003)

Hubble Space Telescope Observations of Novae in M49. *Laura Ferrarese, Patrick Côté, & Andrés Jordán.* 599, 1302 (2003)

A Far-Ultraviolet Survey of 47 Tucanae. II. The Long-Period Cataclysmic Variable AKO 9. *Christian Knigge, David R. Zurek, Michael M. Shara, Knox S. Long, & Ronald L. Gilliland.* 599, 1320 (2003)

STARS: OSCILLATIONS

Discovery of a New Class of Pulsating Stars: Gravity-Mode Pulsators among Subdwarf B Stars. *E. M. Green, G. Fontaine, M. D. Reed, K. Callerame, I. R. Seitenzahl, B. A. White, E. A. Hyde, R. Østensen, O. Cordes, P. Brassard, S. Falter, E. J. Jeffery, S. Dreizler, S. L. Schuh, M. Giovanni, H. Edelmann, J. Rigby, & A. Bronowska.* 583, L31 (2003)

High-Resolution Spectroscopy of the Yellow Hypergiant ρ Cassiopeiae from 1993 through the Outburst of 2000–2001. *A. Lobel, A. K. Dupree, R. P. Stefanik, G. Torres, G. Israelian, N. Morrison, C. de Jager, H. Nieuwenhuijzen, I. Ilyin, & F. Musaev.* 583, 923 (2003)

The Extraordinary X-Ray Light Curve of the Classical Nova V1494 Aquilae (1999 No. 2) in Outburst: The Discovery of Pulsations and a "Burst." *Jeremy J. Drake, R. Mark Wagner, Sumner Starrfield, Yousaf Butt, Joachim Krautter, H. E. Bond, M. Della Valle, R. D. Gehrz, Charles E. Woodward, A. Evans, M. Orio, P. Hauschildt, M. Hernanz, K. Mukai, & J. W. Truran.* 584, 448 (2003)

A Pulsation Mechanism for GW Virginis Variables. *Arthur N. Cox.* 585, 975 (2003)

Fuel-Supply–limited Stellar Relaxation Oscillations: Application to Multiple Rings around Asymptotic Giant Branch Stars and Planetary Nebulae. *Hugh M. Van Horn, John H. Thomas, Adam Frank, & Eric G. Blackman.* 585, 983 (2003)

The Critical Rotation of Strange Stars and Rapidly Rotating Pulsars. *Xiaoping Zheng, Shuhua Yang, & Jiarong Li.* 585, L135 (2003)

r-Modes of Neutron Stars with Superfluid Cores. *Umin Lee & Shijun Yoshida.* 586, 403 (2003)

Discovery of X-Ray Quasi-periodic Oscillations from an Ultraluminous X-Ray Source in M82: Evidence against Beaming. *Tod E. Strohmayer & Richard F. Mushotzky.* 586, L61 (2003)

High-Frequency Quasi-Periodic Oscillations in the Black Holes X-Ray Transient XTE J1650−500. *Jeroen Homan, Marc Klein-Wolt, Sabrina Rossi, Jon M. Miller, Rudy Wijnands, Tomaso Belloni, Michiel van der Klis, & Walter H. G. Lewin.* 586, 1262 (2003)

White Dwarf Asteroseismology and the ^{12}C(α, γ)^{16}O Rate. *Travis S. Metcalfe.* 587, L43 (2003)

Hard X-Ray Flares Preceding Soft X-Ray Outbursts in Aquila X-1: A Link between Neutron Star and Black Hole Transitions. *Wenfei Yu, Marc Klein-Wolt, Rob Fender, & Michiel van der Klis.* 589, L33 (2003)

High-Resolution Spectroscopy of the Pulsating White Dwarf G29-38. *Susan E. Thompson, J. C. Clemens, M. H. van Kerkwijk, & D. Koester.* 589, 921 (2003)

Turbulent Pressure in the Envelopes of Yellow Hypergiants and Luminous Blue Variables. *Richard B. Stothers.* 589, 960 (2003)

Theoretical Limb Darkening for Classical Cepheids. II. Corrections for the Geometric Baade-Wesselink Method. *Massimo Marengo, Margarita Karovska, Dimitar D. Sasselov, Costas Papaliolios, John T. Armstrong, & Tyler E. Nordgren.* 589, 968 (2003)

Determining the Inclination of the Rotation Axis of a Sun-like Star. *L. Gizon & S. K. Solanki.* 589, 1009 (2003)

The Three-dimensional Kinematics of Water Masers around the Semiregular Variable RT Virginis. *Hiroshi Imai, Katsunori M. Shibata, Kevin B. Marvel, Philip J. Diamond, Tetsuo Sasao, Makoto Miyoshi, Makoto Inoue, Victor Migenes, & Yasuhiro Murata.* 590, 460 (2003)

Rayleigh-Taylor Gravity Waves and Quasi-periodic Oscillation Phenomena in X-Ray Binaries. *Lev Titarchuk.* 591, 354 (2003)

Saturation of the r-Mode Instability. *Phil Arras, Eanna E. Flanagan, Sharon M. Morsink, A. Katrin Schenk, Saul A. Teukolsky, & Ira Wasserman.* 591, 1129 (2003)

A Confirmation of the Optical Spectroscopy Approach: Discovery of Two More Pulsating DA (ZZ Ceti) White Dwarfs. *G. Fontaine, P. Bergeron, M. Billères, & S. Charpinet.* 591, 1184 (2003)

Oscillations in Arcturus from *WIRE* Photometry. *Alon Retter, Timothy R. Bedding, Derek L. Buzasi, Hans Kjeldsen, & László L. Kiss.* 591, L151 (2003)

Linear Stability Analysis of Differentially Rotating Polytropes: New Results for the $M = 2$ F-Mode Dynamical Instability. *Shigeyuki Karino & Yoshiharu Eriguchi.* 592, 1119 (2003)

A Theoretical γ Doradus Instability Strip. *Phillip B. Warner, Anthony B. Kaye, & Joyce A. Guzik.* 593, 1049 (2003)

Constraining the Evolution of ZZ Ceti. *Anjum S. Mukadem, S. O. Kepler, D. E. Winget, R. E. Nather, M. Kilic, F. Mullally, T. von Hippel, S. J. Kleinman, A. Nitta, J. A. Guzik, P. A. Bradley, J. Matthews, K. Sekiguchi, D. J. Sullivan, T. Sullivan, R. R. Shobbrook, P. Birch, X. J. Jiang, D. W.*

Xu, S. Joshi, B. N. Ashoka, P. Ibbetson, E. Leibowitz, E. O. Ofek, E. G. Meištas, R. Janulis, D. Ališauskas, R. Kalytis, G. Handler, D. Kilkenny, D. O'Donoghue, D. W. Kurtz, M. Müller, P. Moskalik, W. Ogłoza, S. Zola, J. Krzesiński, F. Johannessen, J. M. Gonzalez-Perez, J. -E. Solheim, R. Silvotti, S. Bernabei, G. Vauclair, N. Dolez, J. N. Fu, M. Chevreton, M. Manteiga, O. Suárez, A. Ulla, M. S. Cunha, T. S. Metcalfe, A. Kanaan, L. Fraga, A. F. M. Costa, O. Giovannini, G. Fontaine, P. Bergeron, M. S. O'Brien, D. Sanwal, M. A. Wood, T. J. Ahrens, N. Silvestri, E. W. Klumpe, S. D. Kawaler, R. Riddle, M. D. Reed, & T. K. Watson. 594, 961 (2003)

A *Chandra* Low Energy Transmission Grating Spectrometer Observation of V4743 Sagittarii: A Supersoft X-Ray Source and a Violently Variable Light Curve. *J.-U. Ness, S. Starrfield, V. Burwitz, R. Wichmann, P. Hauschildt, J. J. Drake, R. M. Wagner, H. E. Bond, J. Krautter, M. Orio, M. Hernanz, R. D. Gehrz, C. E. Woodward, Y. Butt, K. Mukai, S. Balman, & J. W. Truran.* 594, L127 (2003)

The Energy Dependence of Millisecond Oscillations in Thermonuclear X-Ray Bursts. *Michael P. Muno, Feryal Oezel, & Deepto Chakrabarty.* 595, 1066 (2003)

Local Radiative Hydrodynamic and Magnetohydrodynamic Instabilities in Optically Thick Media. *Omer Blaes & Aristotle Socrates.* 596, 509 (2003)

Gravitational Radiation from Pulsating White Dwarfs. *M. Benacquista, D. M. Sedrakian, M. V. Hairapetyan, K. M. Shahabasyan, & A. A. Sadoyan.* 596, L223 (2003)

A Driving Mechanism for the Newly Discovered Long-Period Pulsating Subdwarf B Stars. *G. Fontaine, P. Brassard, S. Charpinet, E. M. Green, P. Chayer, M. Billères, & S. K. Randall.* 597, 518 (2003)

The MACHO Project Large Magellanic Cloud Variable Star Inventory. XI. Frequency Analysis of the Fundamental Mode RR Lyrae Stars. *C. Alcock, D. R. Alves, A. Becker, D. Bennet, K. H. Cook, A. Drake, K. Freeman, M. Geha, K. Griest, G. Kovács, M. Lehner, S. Marshall, D. Minniti, C. Nelson, B. Peterson, P. Popowski, M. Pratt, P. Quinn, A. Rodgers, C. Stubbs, W. Sutherland, T. Vandehei, & D. L. Welch.* 598, 597 (2003)

Hubble Space Telescope Observations of Ultraviolet Oscillations in WZ Sagittae during the Decline from Outburst. *William F. Welsh, Edward M. Sion, Patrick Godon, Boris T. Gänsicke, Christian Knigge, Knox S. Long, & Paula Szkody.* 599, 509 (2003)

Classical Cepheid Pulsation Models. IX. New Input Physics. *Silvia Petroni, Giuseppe Bono, Marcella Marconi, & Robert F. Stellingwerf.* 599, 522 (2003)

STARS: PLANETARY SYSTEMS

On the Fate of Close-in Extrasolar Planets. *Ing-Guey Jiang, Wing-Huen Ip, & Li-Chen Yeh.* 582, 449 (2003)

Seven New Keck Planets Orbiting G and K Dwarfs. *R. Paul Butler, Geoffrey W. Marcy, Steven S. Vogt, Debra A. Fischer, Gregory W. Henry, Gregory Laughlin, & Jason T. Wright.* 582, 455 (2003)

The EXPLORE Project. I. A Deep Search for Transiting Extrasolar Planets. *G. Mallén-Ornelas, S. Seager, H. K. C. Yee, D. Minniti, Michael D. Gladders, G. M. Mallén-Fullerton, & T. M. Brown.* 582, 1123 (2003)

Submillimeter Observations of an Asymmetric Dust Disk around Fomalhaut. *W. S. Holland, J. S. Greaves, W. R. F. Dent, M. C. Wyatt, B. Zuckerman, R. A. Webb, C. McCarthy, I. M. Coulson, E. I. Robson, & W. K. Gear.* 582, 1141 (2003)

Extrasolar Planet Finding via Optimal Apodized-Pupil and Shaped-Pupil Coronagraphs. *N. Jeremy Kasdin, Robert J. Vanderbei, David N. Spergel, & Michael G. Littman.* 582, 1147 (2003)

Dynamic Habitability of Known Extrasolar Planetary Systems. *Kristen Menou & Serge Tabachnik.* 583, 473 (2003)

Detection of Gaps in Circumstellar Disks. *J. Steinacker & Th. Henning.* 583, L35 (2003)

Excitation of Orbital Eccentricities by Repeated Resonance Crossings: Requirements. *E. I. Chiang.* 584, 465 (2003)

The Inner Rings of β Pictoris. *Z. Wahhaj, D. W. Koerner, M. E. Ressler, M. W. Werner, D. E. Backman, & A. I. Sargent.* 584, L27 (2003)

Near-Field Microlensing and Its Effects on Stellar Transit Observations by *Kepler*. *Kailash C. Sahu & Ronald L. Gilliland.* 584, 1042 (2003)

Infrared Observations during the Secondary Eclipse of HD 209458b. I. 3.6 Micron Occultation Spectroscopy Using the Very Large Telescope. *L. Jeremy Richardson, Drake Deming, Guenter Wiedemann, Cedric Goukenleuque, David Steyert, Joseph Harrington, & Larry W. Esposito.* 584, 1053 (2003)

A Unique Solution of Planet and Star Parameters from an Extrasolar Planet Transit Light Curve. *S. Seager & G. Mallén-Ornelas.* 585, 1038 (2003)

Could the 55 Cancri Planetary System Really Be in the 3:1 Mean Motion Resonance? *Jianghui Ji, Hiroshi Kinoshita, Lin Liu, & Guangyu Li.* 585, L139 (2003)

Method for Spot Detection on Solar-like Stars. *Adriana V. R. Silva.* 585, L147 (2003)

A Planetary Companion to HD 40979 and Additional Planets Orbiting HD 12661 and HD 38529. *Debra A. Fischer, Geoffrey W. Marcy, R. Paul Butler, Steven S. Vogt, Gregory W. Henry, Dimitri Pourbaix, Bernard Walp, Anthony A. Misch, & Jason T. Wright.* 586, 1394 (2003)

The Janus Head of the HD 12661 Planetary System. *Krzysztof Goździewski & Andrzej J. Maciejewski.* 586, L153 (2003)

Four New Planets Orbiting Metal-Enriched Stars. *C. G. Tinney, R. Paul Butler, Geoffrey W. Marcy, Hugh R. A. Jones, Alan J. Penny, Chris McCarthy, Brad D. Carter, & Jade Bond.* 587, 423 (2003)

"Weather" Variability of Close-in Extrasolar Giant Planets. *Kristen Menou, James Y-K. Cho, Sara Seager, & Bradley M. S. Hansen.* 587, L113 (2003)

The Changing Face of the Extrasolar Giant Planet HD 209458b. *Kristen Menou, James Y-K. Cho, Bradley M. S. Hansen, & Sara Seager.* 587, L117 (2003)

Measuring the Oblateness and Rotation of Transiting Extrasolar Giant Planets. *Jason W. Barnes & Jonathan J. Fortney.* 588, 545 (2003)

The Geometry of Resonant Signatures in Debris Disks with Planets. *Marc J. Kuchner & Matthew J. Holman.* 588, 1110 (2003)

Theoretical Spectra and Atmospheres of Extrasolar Giant Planets. *David Sudarsky, Adam Burrows, & Ivan Hubeny.* 588, 1121 (2003)

Periodic Flux Variability of Stars Due to the Reflex Doppler Effect Induced by Planetary Companions. *Abraham Loeb & B. Scott Gaudi.* 588, L117 (2003)

Detections of OH toward the Extreme Carbon Star IRC +10216. *K. E. Saavik Ford, David A. Neufeld, Paul F. Goldsmith, & Gary J. Melnick.* 589, 430 (2003)

Planet Migration and Binary Companions: The Case of HD 80606b. *Y. Wu & N. Murray.* 589, 605 (2003)

On the Indirect Detection of Sodium in the Atmosphere of the Planetary Companion to HD 209458. *J. J. Fortney, D. Sudarsky, I. Hubeny, C. S. Cooper, W. B. Hubbard, A. Burrows, & J. I. Lunine.* 589, 615 (2003)

Determining the Inclination of the Rotation Axis of a Sun-like Star. *L. Gizon & S. K. Solanki.* 589, 1009 (2003)

On the Selection of Photometric Planetary Transits. *A. J. Drake.* 589, 1020 (2003)

Spiderweb Masks for High-Contrast Imaging. *Robert J. Vanderbei, David N. Spergel, & N. Jeremy Kasdin.* 590, 593 (2003)

A Sub-Saturn Mass Planet Orbiting HD 3651. *Debra A. Fischer, R. Paul Butler, Geoffrey W. Marcy, Steven S. Vogt, & Gregory W. Henry.* 590, 1081 (2003)

A Possible Correlation between Mass Ratio and Period Ration in Multiple Planetary Systems. *Tsevi Mazeh & Shay Zucker.* 590, L115 (2003)

Resolving the Microlens Mass Degeneracy for Earth-Mass Planets. *Andrew Gould, B. Scott Gaudi, & Cheongho Han.* 591, L53 (2003)

The Librating Companions in HD 37124, HD 12661, HD 82943, 47 Ursa Majoris, and GJ 876: Alignment or Antialignment? *Jianghui Ji, Lin Liu, Hiroshi Kinoshita, Jilin Zhou, Hiroshi Nakai, & Guangyu Li.* 591, L57 (2003)

Masses and Orbital Inclinations of Planets in the PSR B1257+12 System. *Maciej Konacki & Alex Wolszczan.* 591, L147 (2003)

Early-Type Stars: Most Favorable Targets for Astrometrically Detectable Planets in the Habitable Zone. *Andrew Gould, Eric B. Ford, & Debra A. Fischer.* 591, L155 (2003)

Evidence for a T Tauri Phase in Young Brown Dwarfs. *Ray Jayawardhana, Subhanjoy Mohanty, & Gibor Basri.* 592, 282 (2003)

On the Radii of Extrsolar Giant Planets. *Peter Bodenheimer, Gregory Laughlin, & Douglas N. C. Lin.* 592, 555 (2003)

Finding White Dwarfs with Transit Searches. *Alison J. Farmer & Eric Agol.* 592, 1151 (2003)

Secular Evolution of Hierarchical Planetary Systems. *Man Hoi Lee & S. J. Peale.* 592, 1201 (2003)

Ellipsoidal Variability in the OGLE Planetary Transit Candidates. *E. Sirko & B. Paczyński.* 592, 1217 (2003)

A Planet in a Circular Orbit with a 6 Year Period. *Brad D. Carter, R. Paul Butler, C. G. Tinney, Hugh R. A. Jones, Geoffrey W. Marcy, Chris McCarthy, Debra A. Fischer, & Alan J. Penny.* 593, L43 (2003)

Extrasolar Planets in Mean-Motion Resonance: Apses Alignment and Asymmetric Stationary Solutions. *C. Beaugé, S. Ferraz-Mello, & T. A. Michtchenko.* 593, 1124 (2003)

KH 15D: A Star Eclipsed by a Large-Scale Dusty Vortex? *P. Barge & M. Viton.* 593, L117 (2003)

Expected Detection and False Alarm Rates for Transiting Jovian Planets. *Timothy M. Brown.* 593, L125 (2003)

Sensitivity of Transit Searches to Habitable-Zone Planets. *Andrew Gould, Joshua Pepper, & D. L. DePoy.* 594, 533 (2003)

Deep Keck Adaptive Optics Searches for Extrasolar Planets in the Dust of ϵ Eridani and Vega. *Bruce A. Macintosh, E. E. Becklin, Denise Kaisler, Quinn Konopacky, & B. Zuckerman.* 594, 538 (2003)

A Theory for the Radius of the Transiting Giant Planet HD 209458b. *Adam Burrows, D. Sudarsky, & W. B. Hubbard.* 594, 545 (2003)

Notch Filter Masks: Practical Image Masks for Planet-finding Coronagraphs. *Marc J. Kuchner & David N. Spergel.* 594, 617 (2003)

A Possible Bifurcation in Atmospheres of Strongly Irradiated Stars and Planets. *Ivan Hubeny, Adam Burrows, & David Sudarsky.* 594, 1011 (2003)

Where Is the Second Planet in the HD 160691 Planetary System? *Krzysztof Gozdziewski, Maciej Konacki, & Andrzej J. Maciejewski.* 594, 1019 (2003)

Detecting Reflected Light from Close-in Extrasolar Giant Planets with the *Kepler* Photometer. *Jon M. Jenkins & Laurance R. Doyle.* 595, 429 (2003)

The Structure of High Strehl Ratio Point-Spread Functions. *Marshall D. Perrin, Anand Sivaramakrishnan, Russell B. Makidon, Ben R. Oppenheimer, & James R. Graham.* 596, 702 (2003)

Electromagnetic Signals from Planetary Collisions. *Bing Zhang & Steinn Sigurdsson.* 596, L95 (2003)

Dispersing the Gaseous Protoplanetary Disk and Halting Type II Migration. *M. Lecar & D. D. Sasselov.* 596, L99 (2003)

Volatile-rich Earth-Mass Planets in the Habitable Zone. *Marc J. Kuchner.* 596, L105 (2003)

Probing the Spatial Distribution of Extrasolar Planets with Gravitational Microlensing. *Cheongho Han & Young Woon Kang.* 596, 1320 (2003)

The New Transiting Planet OGLE-TR-56b: Orbit and Atmosphere. *Dimitar D. Sasselov.* 596, 1327 (2003)

Stable 1:2 Resonant Periodic Orbits in Elliptic Three-Body Systems. *Nader Haghighipour, Jocelyn Couetdic, Ferenc Varadi, & William B. Moore.* 596, 1332 (2003)

Source of Atomic Hydrogen in the Atmosphere of HD 209458b. *Mao-Chang Liang, Christopher D. Parkinson, Anthony Y. T. Lee, Yuk L. Yung, & Sara Seager.* 596, L247 (2003)

Resonant Inclination Excitation of Migrating Giant Planets. *Edward W. Thommes & Jack J. Lissauer.* 597, 566 (2003)

Infrared Observations During the Secondary Eclipse of HD 209458b. II. Strong Limits on the Infrared Spectrum near 2.2 Microns. *L. Jeremy Richardson, Drake Deming, & Sara Seager.* 597, 581 (2003)

Scattered Light from Close-in Extrasolar Planets: Prospects of Detection with the *MOST* Satellite. *Daniel Green, Jaymie Matthews, Sara Seager, & Rainer Kuschnig.* 597, 590 (2003)

Detection of Close-In Extrasolar Giant Planets Using the Fourier-Kelvin Stellar Interferometer. *William C. Danchi, Drake Deming, Marc J. Kuchner, & Sara Seager.* 597, L57 (2003)

High-Resolution Spectroscopic Follow-up of OGLE Planetary Transit Candidates in the Galactic Bulge: Two Possible Jupiter-Mass Planets and Two Blends. *Maciej Konacki, Guillermo Torres, Dimitar D. Sasselov, & Saurabh Jha.* 597, 1076 (2003)

Evidence for Planet-Induced Chromospheric Activity on HD 179949. *E. Shkolnik, G. A. H. Walker, & D. A. Bohlender.* 597, 1092 (2003)

A Planetary Companion to the G-Type Giant Star HD 104985. *Bun'ei Sato, Hiroyasu Ando, Eiji Kambe, Yoichi Takeda, Hideyuki Izumiura, Seiji Masuda, Etsuji Watanabe, Kunio Noguchi, Setsuko Wada, Norio Okada, Hisashi Koyano, Hideo Maehara, Yuji Norimoto, Takafumi Okada, Yasuhiro Shimizu, Fumihiro Uraguchi, Kenshi Yanagisawa, & Michitoshi Yoshida.* 597, L157 (2003)

The Origin of Jovian Planets in Protostellar Disks: The Role of Dead Zones. *Soko Matsumura & Ralph E. Pudritz.* 598, 645 (2003)

Accretion of Dust Grains as a Possible Origin of Metal-poor Stars with Low α/Fe Ratios. *Toshikazu Shigeyama & Takuji Tsujimoto.* 598, L47 (2003)

Occurrence and Stability of Apsidal Resonance in Multiple Planetary Systems. *Ji-Lin Zhou & Yi-Sui Sun.* 598, 1290 (2003)

Conditions of Dynamical Stability for the HD 160691 Planetary System. *Eric Bois, Ludmila Kiseleva-Eggleton, Nicolas Rambaux, & Elke Pilat-Lohinger.* 598, 1312 (2003)

What Fraction of Sun-like Stars Have Planets? *Charles H. Lineweaver & Daniel Grether.* 598, 1350 (2003)

Atmospheric Loss of Exoplanets Resulting from Stellar X-Ray and Extreme-Ultraviolet Heating. *H. Lammer, F. Selsis, I. Ribas, E. F. Guinan, S. J. Bauer, & W. W. Weiss.* 598, L121 (2003)

Rapid Formation of Outer Giant Planets by Disk Instability. *Alan P. Boss.* 599, 577 (2003)

Circularly Symmetric Apodization via Star-Shaped Masks. *Robert J. Vanderbei, David N. Spergel, & N. Jeremy Kasdin.* 599, 686 (2003)

A Planetary Companion to γ Cephei A. *Artie P. Hatzes, William D. Cochran, Michael Endl, Barbara McArthur, Diane B. Paulson, Gordon A. H. Walker, Bruce Campbell, & Stephenson Yang.* 599, 1383 (2003)

STARS: PLANETARY SYSTEMS: FORMATION

The Low-Velocity Wind from the Circumstellar Matter around the B9 V Star σ Herculis. *C. H. Chen & M. Jura.* 582, 443 (2003)

A Reduced Efficiency of Terrestrial Planet Formation Following Giant Planet Migration. *Philip J. Armitage.* 582, L47 (2003)

Detection of Gaps in Circumstellar Disks. *J. Steinacker & Th. Henning.* 583, L35 (2003)

On Pressure Gradients and Rapid Migration of Solids in a Nonuniform Solar Nebula. *Nader Naghighipour & Alan P. Boss.* 583, 996 (2003)

The Inner Rings of β Pictoris. *Z. Wahhaj, D. W. Koerner, M. E. Ressler, M. W. Werner, D. E. Backman, & A. I. Sargent.* 584, L27 (2003)

Eccentricity Evolution for Planets in Gaseous Disks. *Peter Goldreich & Re'em Sari.* 585, 1024 (2003)

Halting Planet Migration by Photoevaporation from the Central Source. *Isamu Matsuyama, Doug Johnstone, & Norman Murray.* 585, L143 (2003)

Orbital Migration and Mass Accretion of Protoplanets in Three-dimensional Global Computations with Nested Grids. *Gennaro D'Angelo, Willy Kley, & Thomas Henning.* 586, 540 (2003)

Eccentricity Evolution of Extrasolar Multiple Planetary Systems Due to the Depletion of Nascent Protostellar Disks. *M. Nagasawa, D. N. C. Lin, & S. Ida.* 586, 1374 (2003)

The Effect of Tidal Inflation Instability on the Mass and Dynamical Evolution of Extrasolar Planets with Ultrashort Periods. *Pin-Gao Gu, Douglas N. C. Lin, & Peter H. Bodenheimer.* 588, 509 (2003)

Gap Formation by Planets in Turbulent Protostellar Disks. *Wayne F. Winters, Steven A. Balbus, & John F. Hawley.* 589, 543 (2003)

On the Early Evolution of Forming Jovian Planets. I. Initial Conditions, Systematics, and Qualitative Comparisons to Theory. *Andrew F. Nelson & Willy Benz.* 589, 556 (2003)

On the Early Evolution of Forming Jovian Planets. II. Analysis of Accretion and Gravitational Torques. *Andrew F. Nelson & Willy Benz.* 589, 578 (2003)

Gas in the Terrestrial Planet Region of Disks: CO Fundamental Emission from T Tauri Stars. *Joan Najita, John S. Carr, & Robert D. Mathieu.* 589, 931 (2003)

The Thermal Regulation of Gravitational Instabilities in Protoplanetary Disks. *Brian K. Pickett, Annie C. Mejía, Richard H. Durisen, Patrick M. Cassen, Donald K. Berry, & Robert P. Link.* 590, 1060 (2003)

The Mid-Infrared–emitting Dust around AB Aurigae. *C. H. Chen & M. Jura.* 591, 267 (2003)

Surface Outflow in Optically Thick Dust Disks by Radiation Pressure. *Taku Takeuchi & D. N. C. Lin.* 593, 524 (2003)

Radiative Transfer on Perturbations in Protoplanetary Disks. *Hannah Jang-Condell & Dimitar D. Sasselov.* 593, 1116 (2003)

Spectroscopic Estimate of Surface Gravity for a Planetary Member in the σ Orionis Cluster. *E. L. Martín & M. R. Zapatero Osorio.* 593, L113 (2003)

On the Formation Timescale and Core Masses of Gas Giant Planets. *W. K. M. Rice & Philip J. Armitage.* 598, L55 (2003)

On Gas Drag–Induced Rapid Migration of Solids in a Nonuniform Solar Nebula. *Nader Haghighipour & Alan P. Boss.* 598, 1301 (2003)

Resonant Trapping of Planetesimals by Planet Migration: Debris Disk Clumps and Vega's Similarity to the Solar System. *M. C. Wyatt.* 598, 1321 (2003)

Thermohydrodynamics of Circumstellar Disks with High-Mass Planets. *Gennaro D'Angelo, Thomas Henning, & Willy Kley.* 599, 548 (2003)

Survival of Terrestrial Planets in the Presence of Giant Planet Migration. *Avi M. Mandell & Steinn Sigurdsson.* 599, L111 (2003)

STARS: PLANETARY SYSTEMS: PROTOPLANETARY DISKS

A Reduced Efficiency of Terrestrial Planet Formation Following Giant Planet Migration. *Philip J. Armitage.* 582, L47 (2003)

Detection of Gaps in Circumstellar Disks. *J. Steinacker & Th. Henning.* 583, L35 (2003)

On Pressure Gradients and Rapid Migration of Solids in a Nonuniform Solar Nebula. *Nader Naghighipour & Alan P. Boss.* 583, 996 (2003)

The Inner Rings of β Pictoris. *Z. Wahhaj, D. W. Koerner, M. E. Ressler, M. W. Werner, D. E. Backman, & A. I. Sargent.* 584, L27 (2003)

Protoplanetary Disk Mass Distribution in Young Binaries. *Eric L. N. Jensen & Rachel L. Akeson.* 584, 875 (2003)

A Survey for Circumstellar Disks around Young Substellar Objects. *Michael C. Liu, Joan Najita, & Alan T. Tokunaga.* 585, 372 (2003)

Eccentricity Evolution for Planets in Gaseous Disks. *Peter Goldreich & Re'em Sari.* 585, 1024 (2003)

Halting Planet Migration by Photoevaporation from the Central Source. *Isamu Matsuyama, Doug Johnstone, & Norman Murray.* 585, L143 (2003)

Expansion of the R4 H_2O Maser Arc near Cepheus A HW2. *J. F. Gallimore, R. J. Cool, M. D. Thornley, & J. McMullin.* 586, 306 (2003)

Eccentricity Evolution of Extrasolar Multiple Planetary Systems Due to the Depletion of Nascent Protostellar Disks. *M. Nagasawa, D. N. C. Lin, & S. Ida.* 586, 1374 (2003)

Numerous Proplyd Candidates in the Harsh Environment of the Carina Nebula. *Nathan Smith, John Bally, & Jon A. Morse.* 587, L105 (2003)

The Effect of Tidal Inflation Instability on the Mass and Dynamical Evolution of Extrasolar Planets with Ultrashort Periods. *Pin-Gao Gu, Douglas N. C. Lin, & Peter H. Bodenheimer.* 588, 509 (2003)

CO Emission from Disks around AB Aurigae and HD 141569: Implications for Disk Structure and Planet Formation Timescales. *Sean D. Brittain, Terrence W. Rettig, Theodore Simon, Craig Kulesa, Michael A. DiSanti, & Neil Dello Russo.* 588, 535 (2003)

The First Detection of Spatially Resolved Mid-Infrared Scattered Light from a Protoplanetary Disk. *C. McCabe, G. Duchêne, & A. M. Ghez.* 588, L113 (2003)

Gap Formation by Planets in Turbulent Protostellar Disks. *Wayne F. Winters, Steven A. Balbus, & John F. Hawley.* 589, 543 (2003)

Gas in the Terrestrial Planet Region of Disks: CO Fundamental Emission from T Tauri Stars. *Joan Najita, John S. Carr, & Robert D. Mathieu.* 589, 931 (2003)

Intrinsic Properties of the Young Stellar Object SU Aurigae. *L. E. DeWarf, J. F. Sepinsky, E. F. Guinan, I. Ribas, & I. Nadalin.* 590, 357 (2003)

Modeling the Infrared Emission from the HR 4796A Disk. *Aigen Li & J. I. Lunine.* 590, 368 (2003)

Near-Infrared Imaging of the Circumstellar Disk around Herbig Ae Star HD 150193A. *Misato Fukagawa, Motohide Tamura, Yoichi Itoh, Saeko S. Hayashi, & Yumiko Oasa.* 590, L49 (2003)

No Fossil Disk in the T Tauri Multiple System V773 Tauri. *G. Duchêne, A. M. Ghez, C. McCabe, & A. J. Weinberger.* 592, 288 (2003)

Evaporation of Interstellar Organic Materials in the Solar Nebula. *Hideyuki Nakano, Akira Kouchi, Shogo Tachibana, & Akira Tsuchiyama.* 592, 1252 (2003)

Radiative Transfer on Perturbations in Protoplanetary Disks. *Hannah Jang-Condell & Dimitar D. Sasselov.* 593, 1116 (2003)

Limits on Eclipses of the Pre–Main-Sequence Star KH 15D in the First Half of the 20th Century. *Joshua N. Winn, Peter M. Garnavich, K. Z. Stanek, & Dimitar D. Sasselov.* 593, L121 (2003)

Explaining UX Orionis Star Variability with Self-shadowed Disks. *C. P. Dullemond, M. E. van den Ancker, B. Acke, & R. van Boekel.* 594, L47 (2003)

Modeling the Infrared Emission from the HD 141569A Disk. *Aigen Li & J. I. Lunine.* 594, 987 (2003)

The Secular Evolution of the Primordial Kuiper Belt. *Joseph M. Hahn.* 595, 531 (2003)

The Impact of Pollution on Stellar Evolution Models. *Aaron Dotter & Brian Chaboyer.* 596, 496 (2003)

Disks around the Young Stars with TW Hydrae and HD 100546 Imaged at 3.4 Millimeters with the Australia Telescope Compact Array. *D. J. Wilner, T. L. Bourke, C. M. Wright, J. K. Jørgensen, E. F. van Dishoeck, & T. Wong.* 596, 597 (2003)

Model Spectral Energy Distributions of Circumstellar Debris Disks. I. Analytic Disk Density Distributions. *Sebastian Wolf & Lynne A. Hillenbrand.* 596, 603 (2003)

Vortices in the Co-orbital Region of an Embedded Protoplanet. *Hui Li, Josef Koller, & Douglas N. C. Lin.* 596, L91 (2003)

Dispersing the Gaseous Protoplanetary Disk and Halting Type II Migration. *M. Lecar & D. D. Sasselov.* 596, L99 (2003)

Stellar Pollution and [Fe/H] in the Hyades. *Aaron Dotter & Brian Chaboyer.* 596, L101 (2003)

Resonant Inclination Excitation of Migrating Giant Planets. *Edward W. Thommes & Jack J. Lissauer.* 597, 566 (2003)

Continuum and CO/HCO^+ Emission from the Disk around the T Tauri Star LkCa 15. *Chunhua Qi, Jacqueline E. Kessler, David W. Koerner, Anneila I. Sargent, & Geoffrey A. Blake.* 597, 986 (2003)

Modeling the Infrared Emission from the ϵ Eridani Disk. *Aigen Li, J. I. Lunine, & G. J. Bendo.* 598, L51 (2003)

On Gas Drag–Induced Rapid Migration of Solids in a Nonuniform Solar Nebula. *Nader Haghighipour & Alan P. Boss.* 598, 1301 (2003)

Resonant Trapping of Planetesimals by Planet Migration: Debris Disk Clumps and Vega's Similarity to the Solar System. *M. C. Wyatt.* 598, 1321 (2003)

Distribution of Circumstellar Disk Masses in the Young Cluster NGC 2024. *J. A. Eisner & John M. Carpenter.* 598, 1341 (2003)

He I λ10830 as a Probe of Winds in Accreting Young Stars. *Suzan Edwards, William Fischer, John Kwan, Lynne Hillenbrand, & A. K. Dupree.* 599, L41 (2003)

STARS: POPULATION II

Selection of Metal-poor Giant Stars Using the Sloan Digital Sky Survey Photometric System. *Amina Helmi, Željko Ivezić, Francisco Prada, Laura Pentericci, Constance M. Rockosi, Donald P. Schneider, Eva K. Grebel, Daniel Harbeck, Robert H. Lupton, James E. Gunn, Gillian R. Knapp, Michael A. Strauss, & Jonathan Brinkmann.* 586, 195 (2003)

Measurement of the Europium Isotope Ratio for the Extremely Metal-poor, r-Process–enhanced Star CS 31082-001. *Wako Aoki, Satoshi Honda, Timothy C. Beers, & Christopher Sneden.* 586, 506 (2003)

Oxygen Abundance in the Template Halo Giant HD 122563. *Beatriz Barbuy, Jorge Meléndez, Monique Spite, Francois Spite, Eric Depagne, Vanessa Hill, Roger Cayrel, Piercarlo Bonifacio, Augusto Damineli, & Carlos A.O. Torres.* 588, 1072 (2003)

Abundance Analysis of HE 2146−1247, a Star with Extremely Enhanced Neutron Capture Elements. *Judith G. Cohen, Norbert Christlieb, Y.-Z. Qian, & G. J. Wasserburg.* 588, 1082 (2003)

Stellar Sources for Heavy r-Process Nuclei. *Y.-Z. Qian & G. J. Wasserburg.* 588, 1099 (2003)

Kinematics of Tidal Debris from ω Centauri's Progenitor Galaxy. *Arihiro Mizutani, Masashi Chiba, & Tsuyoshi Sakamoto.* 589, L89 (2003)

The Extremely Metal-poor, Neutron Capture–rich Star CS 22892−052: A Comprehensive Abundance Analysis. *Christopher Sneden, John J. Cowan, James E. Lawler, Inese I. Ivans, Scott Burles, Timothy C. Beers, Francesca Primas, Vanessa Hill, James W. Truran, George M. Fuller, Bernd Pfeiffer, & Karl-Ludwig Kratz.* 591, 936 (2003)

Binary Blue Metal-Poor Stars: Evidence for Asymptotic Giant Branch Mass Transfer. *Christopher Sneden, George W. Preston, & John J. Cowan.* 592, 504 (2003)

Chemical Substructure in the Milky Way Halo: A New Population of Old Stars. *Inese I. Ivans, Christopher Sneden, C. Renée James, George W. Preston, Jon P. Fulbright, Peter A. Höflich, Bruce W. Carney, & J. Craig Wheeler.* 592, 906 (2003)

Europium Isotope Ratios in s-Process Element-enhanced Metal-poor Stars: A New Probe of the ^{151}Sm Branching. *Wako Aoki, Sean G. Ryan, Nobuyuki Iwamoto, Timothy C. Beers, John E. Norris, Hiroyasu Ando, Toshitaka Kajino, Grant J. Mathews, & Masayuki Y. Fujimoto.* 592, L67 (2003)

Detection of the Evolutionary Stages of Variables in M3. *J. Jurcsik, J. M. Benko, G. A. Bakos, B. Szeidl, & R. Szabó.* 597, L49 (2003)

Bipolar Supernova Explosions: Nucleosynthesis and Implications for Abundances in Extremely Metal-Poor Stars. *Keiichi Maeda & Ken'ichi Nomoto.* 598, 1163 (2003)

STARS: PRE–MAIN-SEQUENCE

Three-Dimensional Simulations of Jets from Keplerian Disks: Self-Regulatory Stability. *Rachid Ouyed, David A. Clarke, & Ralph E. Pudritz.* 582, 292 (2003)

Very Low Mass Stars amd Brown Dwarfs in Taurus-Auriga. *Russel J. White & Gibor Basri.* 582, 1109 (2003)

A Spectrophotometric Method to Determine the Inclination of Class I Objects. *Takeshi Nakazato, Taishi Nakamoto, & Masayuki Umemura.* 583, 322 (2003)

A Spectroscopic Survey of Subarcsecond Binaries in the Taurus-Auriga Dark Cloud with the *Hubble Space Telescope*. *Patrick Hartigan & Scott J. Kenyon.* 583, 334 (2003)

Near-Infrared Adaptive Optics Imaging of the Embedded Cluster NGC 2024. *Tracy L. Beck, M. Simon, & L. M. Close.* 583, 358 (2003)

Water Maser Survey toward Low-Mass Young Stellar Objects in the Northern Sky with the Nobeyama 45 Meter Telescope and the Very Large Array. *Ray S. Furuya, Yoshimi Kitamura, Alwyn Wooten, Mark J. Claussen, & Ryohei Kawabe.* 144, 71 (2003)

Structure of the Mid-Infrared–emitting Disk around WL 16. *Michael E. Ressler & Mary Barsony.* 584, 832 (2003)

Astrophysics of Young Star Binaries. *L. Prato, T. P. Greene, & M. Simon.* 584, 853 (2003)

Protoplanetary Disk Mass Distribution in Young Binaries. *Eric L. N. Jensen & Rachel L. Akeson.* 584, 875 (2003)

X-Rays in the Orion Nebula Cluster: Constraints on the Origins of Magnetic Activity in Pre–Main-Sequence Stars. *Eric D. Feigelson, James A. Gaffney III, Gordon Garmire, Lynne A. Hillenbrand, & Leisa Townsley.* 584, 911 (2003)

A Survey for Circumstellar Disks around Young Substellar Objects. *Michael C. Liu, Joan Najita, & Alan T. Tokunaga.* 585, 372 (2003)

Mid-Infrared Imaging of the Protostellar Binary L1448N IRS 3(A,B). *David R. Ciardi, Charles M. Telesco, Jonathan P. Williams, R. Scott Fisher, Chris Packham, Robert Piña, & James Radomski.* 585, 392 (2003)

Comments on Inferences of Star Formation Histories and Birth Lines. *Lee Hartmann.* 585, 398 (2003)

Detection of Crystalline Silicates around the T Tauri Star Hen 3-600A. *Mitsuhiko Honda, Hirokazu Kataza, Yoshiko K. Okamoto, Takashi Miyata, Takuya Yamashita, Shigeyuki Sako, Shinya Takubo, & Takashi Onaka.* 585, L59 (2003)

Spatial Study with the Very Large Telescope of a New Resolved Edge-on Circumstellar Dust Disk Discovered at the Periphery of the ρ Ophiuchi Dark Cloud. *N. Grosso, J. Alves, K. Wood, R. Neuhäuser, T. Montmerle, & J. E. Bjorkman.* 586, 296 (2003)

Expansion of the R4 H_2O Maser Arc near Cepheus A HW2. *J. F. Gallimore, R. J. Cool, M. D. Thornley, & J. McMullin.* 586, 306 (2003)

Interactions between a Bright Young Stellar Object and the *Micourse Space Experiment* Infrared-Dark Cloud G79.3+0.3: An Early Stage of Triggered Star Formation? *R. O. Redman, P. A. Feldman, F. Wyrowski, S. Côté, S. J. Carey, & M. P. Egan.* 586, 1127 (2003)

Detections of Rovibrational H_2 Emission from the Disks of T Tauri Stars. *Jeffrey S. Bary, David A. Weintraub, & Joel H. Kastner.* 586, 1136 (2003)

A Comprehensive Study of the L1551 IRS 5 Binary System. *Mayra Osorio, Paolo D'Alessio, James Muzerolle, Nuria Calvet, & Lee Hartmann.* 586, 1148 (2003)

Ejection of a Low-Mass Star in a Young Stellar System in Taurus. *Laurent Loinard, Luis F. Rodríguez, & Monica I. Rodríguez.* 587, L47 (2003)

Evidence for Grain Growth in the Protostellar Disks of Orion. *R. Y. Shuping, John Bally, Mark Morris, & Henry Throop.* 587, L109 (2003)

Near-Infrared Interferometric Measurements of Herbig Ae/Be Stars. *J. A. Eisner, B. F. Lane, R. L. Akeson, L. A. Hillenbrand, & A. I. Sargent.* 588, 360 (2003)

The Circumstellar Disk of the Butterfly Star in Taurus. *Sebastian Wolf, Deborah L. Padgett, & Karl R. Stapelfeldt.* 588, 373 (2003)

The First Detection of Spatially Resolved Mid-Infrared Scattered Light from a Protoplanetary Disk. *C. McCabe, G. Duchêne, & A. M. Ghez.* 588, L113 (2003)

Magnetic Star-Disk Coupling in Classical T Tauri Systems. *Manfred Küker, Thomas Henning, & Günther Rüdiger.* 589, 397 (2003)

Hubble Space Telescope WFPC2 Imaging of the Disk and Jet of HV Tauri C. *Karl R. Stapelfeldt, François Ménard, Alan M. Watson, John E. Krist, Catherine Dougados, Deborah L. Padgett, & Wolfgang Brandner.* 589, 410 (2003)

Adaptive Optics Spectroscopy of the [Fe II] Outflow from DG Tauri. *Tae-Soo Pyo, Naoto Kobayashi, Masahiko Hayashi, Hiroshi Terada, Miwa Goto, Hideki Takami, Naruhisa Takato, Wolfgang Gaessler, Tomonori Usuda, Takuya Yamashita, Alan T. Tokunaga, Yutaka Hayano, Yukiko Kamata, Masanori Iye, & Yosuke Minowa.* 590, 340 (2003)

New Low-Mass Members of the Taurus Star-forming Region. *K. L. Luhman, Cesar Briceno, John R. Stauffer, Lee Hartmann, D. Barrado y Navascues, & Nelson Caldwell.* 590, 348 (2003)

Intrinsic Properties of the Young Stellar Object SU Aurigae. *L. E. DeWarf, J. F. Sepinsky, E. F. Guinan, I. Ribas, & I. Nadalin.* 590, 357 (2003)

NGC 7538S—a High-Mass Protostar with a Massive Rotating Disk. *Göran Sandell, Melvyn Wright, & James R. Forster.* 590, L45 (2003)

Near-Infrared Imaging of the Circumstellar Disk around Herbig Ae Star HD 150193A. *Misato Fukagawa, Motohide Tamura, Yoichi Itoh, Saeko S. Hayashi, & Yumiko Oasa.* 590, L49 (2003)

Trapped Protostellar Winds and Their Breakout. *Francis P. Wilkin & Steven W. Stahler.* 590, 917 (2003)

Locating the Launching Region of T Tauri Winds: The Case of DG Tauri. *Jeffrey M. Anderson, Zhi-Yun Li, Ruben Krasnopolsky, & Roger D. Blandford.* 590, L107 (2003)

The Spatial Distribution of Fluorescent H_2 Emission near T Tauri. *José Saucedo, Nuria Calvet, Lee Hartmann, & John Raymond.* 591, 275 (2003)

Two-dimensional Radiative Transfer in Protostellar Envelopes. I. Effects of Geometry on Class I Sources. *Barbara A. Whitney, Kenneth Wood, J. E. Bjorkman, & Michael J. Wolff.* 591, 1049 (2003)

A Search for Close Binaries in the ρ Ophiuchi Star-forming Region. *M. Barsony, C. Koresko, & K. Matthews.* 591, 1064 (2003)

The Effects of UV Continuum and Lyα Radiation on the Chemical Equilibrium of T Tauri Disks. *Edwin Bergin, Nuria Calvet, Paola D'Alessio, & Gregory J. Herczeg.* 591, L159 (2003)

Neutral Hydrogen Associated with NGC 7129. *H. E. Matthews, C. R. Purton, R. S. Roger, P. E. Dewdney, & G. F. Mitchell.* 592, 176 (2003)

Envelope Emission in Young Stellar Systems: A Subarcsecond Survey of Circumstellar Structure. *Leslie W. Looney, Lee G. Mundy, & W. J. Welch.* 592, 255 (2003)

Accretion in Young Stellar/Substellar Objects. *James Muzerolle, Lynne Hillenbrand, Nuria Calvet, César Briceño, & Lee Hartmann.* 592, 266 (2003)

Evidence for a T Tauri Phase in Young Brown Dwarfs. *Ray Jayawardhana, Subhanjoy Mohanty, & Gibor Basri.* 592, 282 (2003)

No Fossil Disk in the T Tauri Multiple System V773 Tauri. *G. Duchêne, A. M. Ghez, C. McCabe, & A. J. Weinberger.* 592, 288 (2003)

The Nature of Overluminous F Stars Observed in a Radial-Velocity Survey. *R. F. Griffin & A. A. Suchkov.* 147, 103 (2003)

Observations of DG Tauri with the Keck Interferometer. *M. Colavita, R. Akeson, P. Wizinowich, M. Shao, S. Acton, J. Beletic, J. Bell, J. Berlin, A. Boden, A. Booth, R. Boutell, F. Chaffee, D. Chan, J. Chock, R. Cohen, S. Crawford, M. Creech-Eakman, G. Eychaner, C. Felizardo, J. Gathright, G. Hardy, H. Henderson, J. Herstein, M. Hess, E. Hovland, M. Hrynevych, R. Johnson, J. Kelley, R. Kendrick, C. Koresko, P. Kurpis, D. Le Mignant, H. Lewis, E. Ligon, W. Lupton, D. McBride, B. Mennesson, R. Millan-Gabet, J. Monnier, J. Moore, C. Nance, C. Neyman, A. Niessner, D. Palmer, L. Reder, A. Rudeen, T. Saloga, A. Sargent, E. Serabyn, R. Smythe, P. Stomski, K. Summers, M. Swain, P. Swanson, R. Thompson, K. Tsubota, A. Tumminello, G. van Belle, G. Vasisht, J. Vause, J. Walker, K. Wallace, & U. Wehmeier.* 592, L83 (2003)

Blowout from IC 1396N: The Emergence of Herbig-Haro Flows from a Cloud Core. *Bo Reipurth, Tina Armond, Alex Raga, & John Bally.* 593, L47 (2003)

10 MK Gas in M17 and the Rosette Nebula: X-Ray Flows in Galactic H II Regions. *Leisa K. Townsley, Eric D. Feigelson, Thierry Montmerle, Patrick S. Broos, You-Hua Chu, & Gordon P. Garmire.* 593, 874 (2003)

A Census of the Young Cluster IC 348. *K. L. Luhman, John R. Stauffer, A. A. Muench, G. H. Rieke, E. A. Lada, J. Bouvier, & C. J. Lada.* 593, 1093 (2003)

Indications for Grain Growth and Mass Decrease in Cold Dust Disks around Classical T Tauri Stars in the MBM 12 Young Association. *Michiel R. Hogerheijde, Doug Johnstone, Isamu Matsuyama, Ray Jayawardhana, & James Muzerolle.* 593, L101 (2003)

Magellan Echelle Spectroscopy of TW Hydrae Brown Dwarfs. *Subhanjoy Mohanty, Ray Jayawardhana, & David Barrado y Navascues.* 593, L109 (2003)

KH 15D: A Star Eclipsed by a Large-Scale Dusty Vortex? *P. Barge & M. Viton.* 593, L117 (2003)

Limits on Eclipses of the Pre–Main-Sequence Star KH 15D in the First Half of the 20th Century. *Joshua N. Winn, Peter M. Garnavich, K. Z. Stanek, & Dimitar D. Sasselov.* 593, L121 (2003)

An *IUE* Atlas of Pre–Main-Sequence Stars. III. Co-Added Final Archive Spectra from the Long-Wavelength Cameras. *Jeff A. Valenti, Adam A. Fallon, & Christopher M. Johns-Krull.* 147, 305 (2003)

Explaining UX Orionis Star Variability with Self-shadowed Disks. *C. P. Dullemond, M. E. van den Ancker, B. Acke, & R. van Boekel.* 594, L47 (2003)

High Angular Resolution, Sensitive CS $J = 2–1$ and $J = 3–2$ Imaging of the Protostar L1551 NE: Evidence for Outflow-Triggered Star Formation? *Sozo Yokogawa, Yoshimi Kitamura, Munetake Momose, & Ryohei Kawabe.* 595, 266 (2003)

High-Resolution Spectroscopy of FU Orionis Stars. *G. H. Herbig, P. P. Petrov, & R. Duemmler.* 595, 384 (2003)

ROSAT View of *Hipparcos* F Stars. *A. A. Suchkov, V. V. Makarov, & W. Voges.* 595, 1206 (2003)

Near-Infrared, Adaptive Optics Observations of the T Tauri Multiple-Star System. *Elise Furlan, William J. Forrest, Dan M. Watson, Keven I. Uchida, Bernhard R. Brandl, Luke D. Keller, & Terry L. Herter.* 596, L87 (2003)

An Unusual Eclipse of a Pre–Main-Sequence Star in IC 348. *William Herbst, Roger E. Cohen, & Eric C. Williams.* 596, L243 (2003)

Hubble Space Telescope STIS Spectrum of RW Aurigae A: Evidence for an Ionized Beltlike Structure and Mass Ejection in Timescales of a Few Hours. *Ana I. Gomez de Castro & Eva Verdugo.* 597, 443 (2003)

Using Narrowband Photometry to Detect Young Brown Dwarfs in IC 348. *A. K. Mainzer & Ian S. McLean.* 597, 555 (2003)

Unveiling the Inner Disk Structure of T Tauri Stars. *James Muzerolle, Nuria Calvet, Lee Hartmann, & Paola D'Alessio.* 597, L149 (2003)

A Deep *Chandra* X-Ray Observation of the Embedded Young Cluster in NGC 2024. *Stephen Skinner, Marc Gagné, & Emily Belzer.* 598, 375 (2003)

The Origin of Jovian Planets in Protostellar Disks: The Role of Dead Zones. *Soko Matsumura & Ralph E. Pudritz.* 598, 645 (2003)

First Evidence of Dusty Disks around Herbig Be Stars. *A. Fuente, A. Rodríguez-Franco, L. Testi, A. Natta, R. Bachiller, & R. Neri.* 598, L39 (2003)

Two-dimensional Radiative Transfer in Protostellar Envelopes. II. An Evolutionary Sequence. *Barbara A. Whitney, Kenneth Wood, J. E. Bjorkman, & Martin Cohen.* 598, 1079 (2003)

A Cluster of Compact Radio Sources in NGC 2024 (Orion B). *Luis F. Rodríguez, Yolanda Gómez, & Bo Reipurth.* 598, 1100 (2003)

Distribution of Circumstellar Disk Masses in the Young Cluster NGC 2024. *J. A. Eisner & John M. Carpenter.* 598, 1341 (2003)

A Resolved Circumstellar Disk around the Herbig Ae Star HD 00546 in the Thermal Infrared. *Wilson M. Liu, Philip M. Hinz, Michael R. Meyer, Eric E. Mamajek, William F. Hoffman, & Joseph L. Hora.* 598, L111 (2003)

New Members of the TW Hydrae Association, β Pictoris Moving Group, and Tucana/Horologium Association. *Inseok Song, B. Zuckerman, & M. S. Bessell.* 599, 342 (2003)

He I λ10830 as a Probe of Winds in Accreting Young Stars. *Suzan Edwards, William Fischer, John Kwan, Lynne Hillenbrand, & A. K. Dupree.* 599, L41 (2003)

The ϵ Chamaeleontis Young Stellar Group and the Characterization of Sparse Stellar Clusters. *Eric D. Feigelson, Warrick A. Lawson, & Gordon P. Garmire.* 599, 1207 (2003)

STARS: PULSARS: GENERAL

Precursor Plerionic Activity and High-Energy Gamma-Ray Emission in the Supranova Model of Gamma-Ray Bursts. *Susumu Inoe, Dafne Guetta, & Franco Pacini.* 583, 379 (2003)

Possible New γ-Ray Pulsar Detections by the *AGILE* and *GLAST* Missions: An Outer Gap Model Look at the Parkes Pulsar Catalog. *Diego F. Torres & Sebastián E. Nuza.* 583, L25 (2003)

Search for TeV Emissions from Pulsars in Binary Systems. *T. A. Hall, I. H. Bond, S. M. Bradbury, J. H. Buckley, M. J. Carson, D. A. Carter-Lewis, M. Catanese, S. Dunlea, M. D'Vali, D. J. Fegan, S. J. Fegan, J. P. Finley, J. A. Gaidos, G. H. Gillanders, A. M. Hillas, D. Horan, M. Kertzman, D. Kieda, J. Kildea, J. Knapp, F. Krennrich, M. J. Lang, S. LeBohec, R. Lessard, J. Lloyd-Evans, B. McKernan, P. Moriarty, D. Muller, R. Ong, J. Quinn, P. T. Reynolds, H. J. Rose, G. H. Sembroski, S. P. Swordy, V. V. Vassiliev, & T. C. Weekes.* 583, 853 (2003)

XMM-Newton Spectroscopy of the Accretion-driven Millisecond X-Ray Pulsar XTE J1751−305 in Outburst. *J. M. Miller, R. Wijnands, M. Méndez, E. Kendziorra, A. Tiengo, M. van der Klis, D. Chakrabarty, B. M. Gaensler, & W. H. G. Lewin.* 583, L99 (2003)

Understanding the Radio Emission Geometry of Multiple-Component Radio Pulsars from Retardation and Aberration Effects. *Y. Gupta & R. T. Gangadhara.* 584, 418 (2003)

General Relativistic Electromagnetism and Particle Acceleration in Pulsar Polar Cap. *Nobuyuki Sakai & Shinpei Shibata.* 584, 427 (2003)

A CLEAN-based Method for Deconvolving Interstellar Pulse Broadening from Radio Pulses. *N. D. R. Bhat, J. M. Cordes, & S. Chatterjee.* 584, 782 (2003)

Evidence of a Cyclotron Feature in the Spectrum of the Anomalous X-Ray Pulsar 1RXS J170849−400910. *Nanda Rea, Gian Luca Israel, Luigi Stella, Tim Oosterbroek, Sandro Mereghetti, Lorella Angelini, Sergio Campana, & Stefano Covino.* 586, L65 (2003)

Detectability of Gravitational Waves from SN 1987A. *Giovanni Santostasi, Warren Johnson, & Juhan Frank.* 586, 1191 (2003)

Extended Acceleration in Slot Gaps and Pulsar High-Energy Emission. *Alex G. Muslimov & Alice K. Harding.* 588, 430 (2003)

The Pulsar Wind Nebula in G11.2−0.3. *Mallory S. E. Roberts, Cindy R. Tam, Victoria M. Kaspi, Maxim Lyutikov, Gautam Vasisht, Michael Pivovaroff, Eric V. Gotthelf, & Nobuyuki Kawai.* 588, 992 (2003)

A Major Soft Gamma Repeater–like Outburst and Rotation Glitch in the No-longer-so-anomalous X-Ray Pulsar 1E 2259+586. *V. M. Kaspi, F. P. Gavriil, P. M. Woods, J. B. Jensen, M. S. E. Roberts, & D. Chakrabarty.* 588, L93 (2003)

Global Asymptotic Solutions for Magnetohydrodynamic Jets and Winds. *I. Okamoto.* 589, 671 (2003)

A Search for Pulsars in Quiescent Soft X-Ray Transients. I. *M. Burgay, L. Burderi, A. Possenti, N. D'Amico, R. N. Manchester, A. G. Lyne, F. Camilo, & S. Campana.* 589, 902 (2003)

A New Search Technique for Short Orbital Period Binary Pulsars. *Scott M. Ransom, James M. Cordes, & Stephen S. Eikenberry.* 589, 911 (2003)

The Infrared Counterpart to the Anomalous X-Ray Pulsar 1RXS J170849−400910. *G. L. Israel, S. Covino, R. Perna, R. Mignani, L. Stella, S. Campana, G. Marconi, G. Bono, S. Mereghetti, C. Motch, I. Negueruela, T. Oosterbroek, & L. Angelini.* 589, L93 (2003)

Radiation of Neutron Stars Produced by Superfluid Core. *Anatoly A. Svidzinsky.* 590, 386 (2003)

Toward an Empirical Theory of Pulsar Emission. VIII. Subbeam Circulation and the Polarization-Modal Structure of Conal Beams. *Joanna M. Rankin & R. Ramachandran.* 590, 411 (2003)

X-Ray Pulses from Accretion Columns: Contributions to the Energy Dependence of the Pulse Shape. *U. Kraus, C. Zahn, C. Weth, & H. Ruder.* 590, 424 (2003)

The Transition between Nonorthogonal Polarization Modes in PSR B2016+28 at 1404 MHz. *Mark M. McKinnon.* 590, 1026 (2003)

X-Ray Spectra of Young Pulsars and Their Wind Nebulae: Dependence on Spin-Down Energy Loss Rate. *E. V. Gotthelf.* 591, 361 (2003)

Dissipation in Poynting-Flux–dominated Flows: The σ-Problem of the Crab Pulsar Wind. *J. G. Kirk & O. Skjaeraasen.* 591, 366 (2003)

PSR J1847−0130: A Radio Pulsar with Magnetar Spin Characteristics. *M. A. McLaughlin, I. H. Stairs, V. M. Kaspi, D. R. Lorimer, M. Kramer, A. G. Lyne, R. N. Manchester, F. Camilo, G. Hobbs, A. Possenti, N. D'Amico, & A. J. Faulkner.* 591, L135 (2003)

Chandra Detection of a Pulsar Wind Nebula Associated with Supernova Remnant 3C 396. *C. M. Olbert, J. W. Keohane, K. A. Arnaud, K. K. Dyer, S. P. Reynolds, & S. Safi-Harb.* 592, L45 (2003)

The Proper Motion, Age, and Initial Spin Period of PSR J0538+2817 in S147. *M. Kramer, A. G. Lyne, G. Hobbs, O. Löhmer, P. Carr, C. Jordan, & A. Wolszczan.* 593, L31 (2003)

Chandra X-Ray Observatory Observations of the Globular Cluster M28 and Its Millisecond Pulsar PSR 1821−24. *Werner Becker, Douglas A. Swartz, George G. Pavlov, Ronald F. Elsner, Jonathan Grindlay, Roberto Mignani, Allyn F. Tennant, Don Backer, Luigi Pulone, Vincenzo Testa, & Martin C. Weisskopf.* 594, 798 (2003)

Gamma-Ray Bursts from Neutron Star Kicks. *Y. F. Huang, Z. G. Dai, T. Lu, K. S. Cheng, & X. F. Wu.* 594, 919 (2003)

The Arecibo 430 MHz Intermediate Galactic Latitude Survey: Discovery of Nine Radio Pulsars. *J. Navarro, S. B. Anderson, & P. C. Freire.* 594, 943 (2003)

Nature of Fault Planes in Solid Neutron Star Matter. *P. B. Jones.* 595, 342 (2003)

High-Energy Neutrinos from Magnetars. *Bing Zhang, Z. G. Dai, P. Mészáros, E. Waxman, & A. K. Harding.* 595, 346 (2003)

Self-Consistency of Relativistic Observables with General Relativity in the White Dwarf–Neutron Star Binary PSR J1141−6545. *M. Bailes, S. M. Ord, H. S. Knight, & A. W. Hotan.* 595, L49 (2003)

The 2001 April Burst Activation of SGR 1900+14: Pulse Properties and Torque. *P. M. Woods, C. Kouveliotou, E. Göğüş, M. H. Finger, M. Feroci, S. Mereghetti, J. H. Swank, K. Hurley, J. Heise, D. Smith, F. Frontera, C. Guidorzi, & C. Thompson.* 596, 464 (2003)

Solid Quark Stars? *Renxin Xu.* 596, L59 (2003)

BeppoSAX Serendipitous Discovery of the X-Ray Pulsar SAX J1802.7−2017. *G. Augello, R. Iaria, N. R. Robba, T. Di Salvo, L. Burderi, G. Lavagetto, & L. Stella.* 596, L63 (2003)

A Second Glitch from the "Anomalous" X-Ray Pulsar 1RXS J170849.0−4000910. *V. M. Kaspi & F. P. Gavriil.* 596, L71 (2003)

Can the Age Discrepancies of Neutron Stars Be Circumvented by an Accretion-assisted Torque? *Y. Shi & R. X. Xu.* 596, L75 (2003)

Searches for Giant Pulses from Extragalactic Pulsars. *M. A. McLaughlin & J. M. Cordes.* 596, 982 (2003)

Searches for Fast Radio Transients. *J. M. Cordes & M. A. McLaughlin.* 596, 1142 (2003)

Using the Intensity Modulation Index to Test Pulsar Radio Emission Models. *Fredrick A. Jenet & Janusz Gil.* 596, L215 (2003)

Three-dimensional Statistics of Radio Polarimetry. *Mark M. McKinnon.* 148, 519 (2003)

The Galactic Population of Low- and Intermediate-Mass X-Ray Binaries. *Eric Pfahl, Saul Rappaport, & Philipp Podsiadlowski.* 597, 1036 (2003)

Theoretical Considerations on the Properties of Accreting Millisecond Pulsars. *Lorne A. Nelson & Saul Rappaport.* 598, 431 (2003)

On the Axisymmetric Force-free Pulsar Magnetosphere. *Dmitri A. Uzdensky.* 598, 446 (2003)

Two-Pole Caustic Model for High-Energy Light Curves of Pulsars. *J. Dyks & B. Rudak.* 598, 1201 (2003)

On the Origin of X-Ray Emission from Millisecond Pulsars in 47 Tucanae. *K. S. Cheng & Ronald E. Taam.* 598, 1207 (2003)

Can Thin Disks Produce Anomalous X-Ray Pulsars? *K. Yavuz Eksi & M. Ali Alpar.* 599, 450 (2003)

Pulsar Scintillation Arcs. I. Frequency Dependence. *Alex S. Hill, Daniel R. Stinebring, Henry A. Barnor, Daniel E. Berwick, & Aaron B. Webber.* 599, 457 (2003)

X-Ray Sources with Periodic Variability in a Deep *Chandra* Image of the Galactic Center. *M. P. Muno, F. K. Baganoff, M. W. Bautz, W. N. Brandt, G. P. Garmire, & G. R. Ricker.* 599, 465 (2003)

The Glitches of the Anomalous X-Ray Pulsar 1RXS J170849.0−400910. *S. Dall'Osso, G. L. Israel, L. Stella, A. Possenti, & E. Perozzi.* 599, 485 (2003)

Probing the Presence of a Single or Binary Black Hole in the Globular Cluster NGC 6752 with Pulsar Dynamics. *Monica Colpi, Michela Mapelli, & Andrea Possenti.* 599, 1260 (2003)

STARS: PULSARS: INDIVIDUAL

Name: Centaurus X-3

Resolving the Effects of Resonant X-Ray Line Scattering in Centaurus X-3 with *Chandra*. *Patrick S. Wojdowski, Duane A. Liedahl, Masao Sako, Steven M. Kahn, & Frederik Paerels.* 582, 959 (2003)

Name: Crab Pulsar

Dissipation in Poynting-Flux–dominated Flows: The σ-Problem of the Crab Pulsar Wind. *J. G. Kirk & O. Skjaeraasen.* 591, 366 (2003)

Name: Geminga

Electrodynamics of an Outer Gap Accelerator: Formation of a Soft Power-Law Spectrum between 100 MeV and 3 GeV. *Kouichi Hirotani, Alice K. Harding, & Shinpei Shibata.* 591, 334 (2003)

Name: Vela pulsar

Electrodynamics of an Outer Gap Accelerator: Formation of a Soft Power-Law Spectrum between 100 MeV and 3 GeV. *Kouichi Hirotani, Alice K. Harding, & Shinpei Shibata.* 591, 334 (2003)

The Variable Jet of the Vela Pulsar. *G. G. Pavlov, M. A. Teter, O. Kargaltsev, & D. Sanwal.* 591, 1157 (2003)

Constraints on Pulsar Magnetospheric and Wind Parameters for the Compact Nebulae of Vela and PSR B1706−44. *Ramotholo R. Sefako & Ocker C. de Jager.* 593, 1013 (2003)

Search for the Optical Counterpart of the Vela Pulsar X-Ray Nebula. *R. P. Mignani, A. De Luca, O. Kargaltsev, G. G. Pavlov, S. Zaggia, P. A. Caraveo, & W. Becker.* 594, 419 (2003)

The Vela Pulsar's Proper Motion and Parallax Derived from VLBI Observations. *R. Dodson, D. Legge, J. E. Reynolds, & P. M. McCulloch.* 596, 1137 (2003)

Alphanumeric: AX J1811.5−1926

The Pulsar Wind Nebula in G11.2−0.3. *Mallory S. E. Roberts, Cindy R. Tam, Victoria M. Kaspi, Maxim Lyutikov, Gautam Vasisht, Michael Pivovaroff, Eric V. Gotthelf, & Nobuyuki Kawai.* 588, 992 (2003)

Alphanumeric: B0943+10

Drifting Subpulses in PSR B0943+10. *Janusz A. Gil & Marek Sendyk.* 585, 453 (2003)

Alphanumeric: B1534+12

Geodetic Precession and Timing of the Relativistic Binary Pulsars PSR B1534+12 and PSR 1913+16. *Maciej Konacki, Alex Wolszczan, & Ingrid H. Stairs.* 589, 495 (2003)

Alphanumeric: B1913+16

Geodetic Precession and Timing of the Relativistic Binary Pulsars PSR B1534+12 and PSR 1913+16. *Maciej Konacki, Alex Wolszczan, & Ingrid H. Stairs.* 589, 495 (2003)

Alphanumeric: 1E 1207−5209

Can the Age Discrepancies of Neutron Stars Be Circumvented by an Accretion-assisted Torque? *Y. Shi & R. X. Xu.* 596, L75 (2003)

Alphanumeric: 1E 2259+586

A Major Soft Gamma Repeater–like Outburst and Rotation Glitch in the No-longer-so-anomalous X-Ray Pulsar 1E 2259+586. *V. M. Kaspi, F. P. Gavriil, P. M. Woods, J. B. Jensen, M. S. E. Roberts, & D. Chakrabarty.* 588, L93 (2003)

Alphanumeric: LMC X-4

The Evolution of LMC X-4 Flares: Evidence for Super Eddington Radiation Oosing through Inhomogeneous Polar Cap Accretion Flows? *Dae-Sik Moon, Stephen S. Eikenberry, & Ira M. Wasserman.* 586, 1280 (2003)

Alphanumeric: PSR 1706−44

Electrodynamics of an Outer Gap Accelerator: Formation of a Soft Power-Law Spectrum between 100 MeV and 3 GeV. *Kouichi Hirotani, Alice K. Harding, & Shinpei Shibata.* 591, 334 (2003)

Alphanumeric: PSR 1828−11

The Crustal Rigidity of a Neutron Star, and Implications for PSR 1828−11 and Other Precession Candidates. *Curt Cutler, Greg Ushomirsky, & Bennett Link.* 588, 975 (2003)

Alphanumeric: PSR 1929+10

The Transition between Nonorthogonal Polarization Modes in PSR B2016+28 at 1404 MHz. *Mark M. McKinnon.* 590, 1026 (2003)

Alphanumeric: PSR B0531+21

A Comparison of Measured Crab and Vela Glitch Healing Parameters with Predictions of Neutron Star Models. *Fronefield Crawford & Marek Demiański.* 595, 1052 (2003)

Alphanumeric: PSR B0540−69

Searches for Giant Pulses from Extragalactic Pulsars. *M. A. McLaughlin & J. M. Cordes.* 596, 982 (2003)

Alphanumeric: PSR B0656+14

Pulsar PSR B0656+14, the Monogem Ring, and the Origin of the "Knee" in the Primary Cosmic-Ray Spectrum. *S. E. Thorsett, R. A. Benjamin, Walter F. Brisken, A. Golden, & W. M. Goss.* 592, L71 (2003)

The Distance and Radius of the Neutron Star PSR B0656+14. *Walter F. Brisken, S. E. Thorsett, A. Golden, & W. M. Goss.* 593, L89 (2003)

Optical Pulse-Phased Photopolarimetry of PSR B0656+14. *B. Kern, C. Martin, B. Mazin, & J. P. Halpern.* 597, 1049 (2003)

Alphanumeric: PSR B0833−45

A Comparison of Measured Crab and Vela Glitch Healing Parameters with Predictions of Neutron Star Models. *Fronefield Crawford & Marek Demiański.* 595, 1052 (2003)

Alphanumeric: PSR B0950+08

The Transition between Nonorthogonal Polarization Modes in PSR B2016+28 at 1404 MHz. *Mark M. McKinnon.* 590, 1026 (2003)

Alphanumeric: PSR B1055−52

Electrodynamics of an Outer Gap Accelerator: Formation of a Soft Power-Law Spectrum between 100 MeV and 3 GeV. *Kouichi Hirotani, Alice K. Harding, & Shinpei Shibata.* 591, 334 (2003)

Alphanumeric: PSR B1257+12

Masses and Orbital Inclinations of Planets in the PSR B1257+12 System. *Maciej Konacki & Alex Wolszczan.* 591, L147 (2003)

Alphanumeric: PSR B1620−26

The Pulsar/White Dwarf/Planet System in M4: Improved Astrometry. *Harvey B. Richer, Rodrigo Ibata, Gregory G. Fahlman, & Mark Huber.* 597, L45 (2003)

Alphanumeric: PSR B1706−44

Constraints on Pulsar Magnetospheric and Wind Parameters for the Compact Nebulae of Vela and PSR B1706−44. *Ramotholo R. Sefako & Ocker C. de Jager.* 593, 1013 (2003)

Alphanumeric: PSR B1823−13

XMM-Newton Observations of PSR B1823−13: An Asymmetric Synchrotron Nebula around a Vela-like Pulsar. *B. M. Gaensler, N. S. Schulz, V. M. Kaspi, M. J. Pivovaroff, & W. E. Becker.* 588, 441 (2003)

Alphanumeric: PSR B2020+28

The Transition between Nonorthogonal Polarization Modes in PSR B2016+28 at 1404 MHz. *Mark M. McKinnon.* 590, 1026 (2003)

Alphanumeric: PSR J0108−1431

Search for the Optical Counterpart of the Nearby Pulsar J0108−1431. *Roberto P. Mignani, Richard N. Manchester, & George G. Pavlov.* 582, 978 (2003)

Alphanumeric: PSR J0538+2817

The Pulsar Wind Nebula Torus of PSR J0538+2817 and the Origin of Pulsar Velocities. *Roger W. Romani & C.-Y. Ng.* 585, L41 (2003)

Detection of Pulsed X-Ray Emission from *XMM-Newton* Observations of PSR J0538+2817. *K. E. McGowan, J. A. Kennea, S. Zane, F. A. Córdova, M. Cropper, C. Ho, T. Sasseen, & W. T. Vestrand.* 591, 380 (2003)

The Proper Motion, Age, and Initial Spin Period of PSR J0538+2817 in S147. *M. Kramer, A. G. Lyne, G. Hobbs, O. Löhmer, P. Carr, C. Jordan, & A. Wolszczan.* 593, L31 (2003)

Alphanumeric: PSR J1119−6127

Radio Polarization of the Young High-Magnetic-Field Pulsar PSR J1119−6127. *Fronefield Crawford & Nathan C. Keim.* 590, 1020 (2003)

Chandra Detection of the High Magnetic Field Radio Pulsar J1119−6127 in the Supernova Remnant G292.2−0.5. *Marjorie Gonzalez & Samar Safi-Harb.* 591, L143 (2003)

Alphanumeric: PSR J1124−5916

An X-Ray Pulsar in the Oxygen-rich Supernova Remnant G292.0+1.8. *John P. Hughes, Patrick O. Slane, Sangwook Park, Peter W. A. Roming, & David N. Burrows.* 591, L139 (2003)

A Multifrequency Radio Study of Supernova Remnant G292.0+1.8 and Its Pulsar Wind Nebula. *B. M. Gaensler & B. J. Wallace.* 594, 326 (2003)

Alphanumeric: PSR J1141−6545

Self-Consistency of Relativistic Observables with General Relativity in the White Dwarf–Neutron Star Binary PSR J1141−6545. *M. Bailes, S. M. Ord, H. S. Knight, & A. W. Hotan.* 595, L49 (2003)

Alphanumeric: PSR J1643−1224

A 3 Year Long Extreme Scattering Event in the Direction of the Millisecond Pulsar J1643−1224. *V. Maitia, J.-F. Lestrade, & I. Cognard.* 582, 972 (2003)

Alphanumeric: PSR J1701−3006A

Three Binary Millisecond Pulsars in NGC 6266. *A. Possenti, N. D'Amico, R. N. Manchester, F. Camilo, A. G. Lyne, J. Sarkissian, & A. Corongiu.* 599, 475 (2003)

Alphanumeric: PSR J1701−3006B

Three Binary Millisecond Pulsars in NGC 6266. *A. Possenti, N. D'Amico, R. N. Manchester, F. Camilo, A. G. Lyne, J. Sarkissian, & A. Corongiu.* 599, 475 (2003)

Alphanumeric: PSR J1701−3006C

Three Binary Millisecond Pulsars in NGC 6266. *A. Possenti, N. D'Amico, R. N. Manchester, F. Camilo, A. G. Lyne, J. Sarkissian, & A. Corongiu.* 599, 475 (2003)

Alphanumeric: PSR J1713−3945

X-Ray Observations of the Compact Central Object in Supernova Remnant G347.3−0.5. *J. S. Lazendic, P. O. Slane, B. M. Gaensler, P. P. Plucinsky, J. P. Hughes, D. K. Galloway, & F. Crawford.* 593, L27 (2003)

Alphanumeric: PSR J1740+5340

Accurate Mass Ratio and Heating Effects in the Dual-Line Millisecond Binary Pulsar in NGC 6397. *F. R. Ferraro, E. Sabbi, R. Gratton, A. Possenti, N. D'Amico, A. Bragaglia, & F. Camilo.* 584, L13 (2003)

The Complex Hα Line Profile of the Bright Companion to PSR J1740−5340 in NGC 6397. *E. Sabbi, R. Gratton, F. R. Ferraro, A. Bragaglia, A. Possenti, N. D'Amico, & F. Camilo.* 589, L41 (2003)

Alphanumeric: PSR J1811−1925

The Expansion of G11.2−0.3, a Radio Composite Supernova Remnant. *Cindy Tam & Mallory S. E. Roberts.* 598, L27 (2003)

Alphanumeric: PSR J1846−0258

Chandra X-Ray Imaging Spectroscopy of the Young Supernova Remnant Kesteven 75. *David J. Helfand, Benjamin F. Collins, & E. V. Gotthelf.* 582, 783 (2003)

Alphanumeric: PSR J1909−3744

PSR J1909−3744: A Binary Millisecond Pulsar with a Very Small Duty Cycle. *B. A. Jacoby, M. Bailes, M. H. van Kerkwijk, S. Ord, A. Hotan, S. R. Kulkarni, & S. B. Anderson.* 599, L99 (2003)

Alphanumeric: PSR J1911−5958A

The Helium White Dwarf Orbiting the Millisecond Pulsar in the Halo of the Globular Cluster NGC 6752. *Francesco R. Ferraro, Andrea Possenti, Elena Sabbi, & Nichi D'Amico.* 596, L211 (2003)

Alphanumeric: PSR J2016+1948

The Arecibo 430 MHz Intermediate Galactic Latitude Survey: Discovery of Nine Radio Pulsars. *J. Navarro, S. B. Anderson, & P. C. Freire.* 594, 943 (2003)

Alphanumeric: RX J0720−3125

The Nearby Neutron Star RX J0720.4−3125 from Radio to X-Rays. *D. L. Kaplan, M. H. van Kerkwijk, H. L. Marshall, B. A. Jacoby, S. R. Kulkarni, & D. A. Frail.* 590, 1008 (2003)

Alphanumeric: RX J1605.3+3249

The Optical Counterpart of the Isolated Neutron Star RX J1605.3+3249. *D. L. Kaplan, S. R. Kulkarni, & M. H. van Kerkwijk.* 588, L33 (2003)

Alphanumeric: 1RXS J1708−4009

A Second Glitch from the "Anomalous" X-Ray Pulsar 1RXS J170849.0−4000910. *V. M. Kaspi & F. P. Gavriil.* 596, L71 (2003)

Alphanumeric: 1RXS J170849−400910

The Infrared Counterpart to the Anomalous X-Ray Pulsar 1RXS J170849−400910. *G. L. Israel, S. Covino, R. Perna, R. Mignani, L. Stella, S. Campana, G. Marconi, G. Bono, S. Mereghetti, C. Motch, I. Negueruela, T. Oosterbroek, & L. Angelini.* 589, L93 (2003)

Alphanumeric: 1RXS J170849.0−400910

The Glitches of the Anomalous X-Ray Pulsar 1RXS J170849.0−400910. *S. Dall'Osso, G. L. Israel, L. Stella, A. Possenti, & E. Perozzi.* 599, 485 (2003)

Alphanumeric: SAX J1802.7−2017

BeppoSAX Serendipitous Discovery of the X-Ray Pulsar SAX J1802.7−2017. *G. Augello, R. Iaria, N. R. Robba, T. Di Salvo, L. Burderi, G. Lavagetto, & L. Stella.* 596, L63 (2003)

Alphanumeric: SAX J1808.4−3658

Coupling between Periodic and Aperiodic Variability in SAX J1808.4−3658. *M. T. Menna, L. Burderi, L. Stella, N. Robba, & M. van der Klis.* 589, 503 (2003)

Alphanumeric: SGR 0526−66

The Quiescent Counterpart of the Soft Gamma-Ray Repeater SGR 0526−66. *S. R. Kulkarni, D. L. Kaplan, H. L. Marshall, D. A. Frail, T. Murakami, & D. Yonetoku.* 585, 948 (2003)

Alphanumeric: SGR 1900+14

On the Enhanced X-Ray Emission from SGR 1900+14 after the August 27 Giant Flare. *Ü. Ertan & M. A. Alpar.* 593, L93 (2003)

Alphanumeric: XTE J0929−314

X-Ray Spectroscopy of the Accreting Millisecond Pulsar XTE J0929−314 in Outburst. *Adrienne M. Juett, Duncan K. Galloway, & Deepto Chakrabarty.* 587, 754 (2003)

White Dwarf Donors in Ultracompact Binaries: The Stellar Structure of Finite-Entropy Objects. *Christopher J. Deloye & Lars Bildsten.* 598, 1217 (2003)

Alphanumeric: XTE J1751−305

XMM-Newton Spectroscopy of the Accretion-driven Millisecond X-Ray Pulsar XTE J1751−305 in Outburst. *J. M. Miller, R. Wijnands, M. Méndez, E. Kendziorra, A. Tiengo, M. van der Klis, D. Chakrabarty, B. M. Gaensler, & W. H. G. Lewin.* 583, L99 (2003)

White Dwarf Donors in Ultracompact Binaries: The Stellar Structure of Finite-Entropy Objects. *Christopher J. Deloye & Lars Bildsten.* 598, 1217 (2003)

Alphanumeric: XTE J1807−294

White Dwarf Donors in Ultracompact Binaries: The Stellar Structure of Finite-Entropy Objects. *Christopher J. Deloye & Lars Bildsten.* 598, 1217 (2003)

STARS: ROTATION

Post–Main-Sequence Changes in Rotational Velocities. *Helmut A. Abt.* 582, 420 (2003)

Relativistic Dyson Rings and Their Black Hole Limit. *M. Ansorg, A. Kleinwächter, & R. Meinel.* 582, L87 (2003)

Effects of Differential Rotation on the Maximum Mass of Neutron Stars. *Nicholas D. Lyford, Thomas W. Baumgarte, & Stuart L. Shapiro.* 583, 410 (2003)

Rotation and Activity in Mid-M to L Field Dwarfs. *Subhanjoy Mohanty & Gibor Basri.* 583, 451 (2003)

Carbon-Oxygen White Dwarfs Accreting CO-rich Matter. I. A Comparison between Rotating and Nonrotating Models. *Luciano Piersanti, Simona Gagliardi, Icko Iben, Jr., & Amedeo Tornambé.* 583, 885 (2003)

Beryllium Abundances in F and G Dwarfs in the Coma Cluster and the Ursa Major Moving Group from Keck HIRES Observations. *Ann Merchant Boesgaard, Eric Armengaud, & Jeremy R. King.* 583, 955 (2003)

X-Rays in the Orion Nebula Cluster: Constraints on the Origins of Magnetic Activity in Pre–Main-Sequence Stars. *Eric D. Feigelson, James A. Gaffney III, Gordon Garmire, Lynne A. Hillenbrand, & Leisa Townsley.* 584, 911 (2003)

The Pulsar Wind Nebula Torus of PSR J0538+2817 and the Origin of Pulsar Velocities. *Roger W. Romani & C.-Y. Ng.* 585, L41 (2003)

The Critical Rotation of Strange Stars and Rapidly Rotating Pulsars. *Xiaoping Zheng, Shuhua Yang, & Jiarong Li.* 585, L135 (2003)

r-Modes of Neutron Stars with Superfluid Cores. *Umin Lee & Shijun Yoshida.* 586, 403 (2003)

On the Rotational Evolution of Solar- and Late-Type Stars, Its Magnetic Origins, and the Possibility of Stellar Gyrochronology. *Sydney A. Barnes.* 586, 464 (2003)

A Connection between the Morphology of the X-Ray Emission and Rotation for Solar-Type Stars in Open Clusters. *Sydney A. Barnes.* 586, L145 (2003)

The Nonlinear Evolution of Massive Stellar Core Collapses that "Fizzle." *James N. Imamura, Brian K. Pickett, & Richard H. Durisen.* 587, 341 (2003)

On the Coupling between Helium Settling and Rotation-induced Mixing in Stellar Radiative Zones. I. Analytical Approach. *Sylvie Vauclair & Sylvie Théado.* 587, 777 (2003)

On the Coupling between Helium Settling and Rotation-induced Mixing in Stellar Radiative Zones. II. Numerical Approach. *Sylvie Théado & Sylvie Vauclair.* 587, 784 (2003)

On the Coupling between Helium Settling and Rotation-induced Mixing in Stellar Radiative Zones. III. Applications to Light Elements in Population I Main-Sequence Stars. *Sylvie Théado & Sylvie Vauclair.* 587, 795 (2003)

The Crustal Rigidity of a Neutron Star, and Implications for PSR 1828−11 and Other Precession Candidates. *Curt Cutler, Greg Ushomirsky, & Bennett Link.* 588, 975 (2003)

High-Resolution Spectroscopy of the Pulsating White Dwarf G29-38. *Susan E. Thompson, J. C. Clemens, M. H. van Kerkwijk, & D. Koester.* 589, 921 (2003)

Determining the Inclination of the Rotation Axis of a Sun-like Star. *L. Gizon & S. K. Solanki.* 589, 1009 (2003)

Linear Stability Analysis of Differentially Rotating Polytropes: New Results for the $M = 2$ F-Mode Dynamical Instability. *Shigeyuki Karino & Yoshiharu Eriguchi.* 592, 1119 (2003)

Magnetic Roster Winds and Keplerian Disks of Hot Stars. *M. Maheswaran.* 592, 1156 (2003)

Canonical Extra Mixing in Low-Mass Red Giants. *Pavel A. Denissenkov & Don A. VandenBerg.* 593, 509 (2003)

The s-Process in Rotating Asymptotic Giant Branch Stars. *Falk Herwig, Norbert Langer, & Maria Lugaro.* 593, 1056 (2003)

Rotational Periods of Very Young Brown Dwarfs and Very Low-Mass Stars in Chamaeleon I. *V. Joergens, M. Fernández, J. M. Carpenter, & R. Neuhäuser.* 594, 971 (2003)

Anisotropic Neutrino Radiation in Rotational Core Collapse. *Kei Kotake, Shoichi Yamada, & Katsuhiko Sato.* 595, 304 (2003)

One-armed Spiral Instability in Differentially Rotating Stars. *Motoyuki Saijo, Thomas W. Baumgarte, & Stuart L. Shapiro.* 595, 352 (2003)

Collapse of Rotating Supermassive Neutron Stars to Black Holes: Fully General Relativistic Simulations. *Masaru Shibata.* 595, 992 (2003)

X-Ray Bursts from the Accreting Millisecond Pulsar XTE J1814−338. *Tod E. Strohmayer, Craig B. Markwardt, Jean H. Swank, & Jean in 't Zand.* 596, L67 (2003)

Onset of Shear Instability in Rotating Red Giants. *J. MacDonald & D. J. Mullan.* 598, 560 (2003)

Chemical Abundances and Rotation Velocities of Blue Horizontal-Branch Stars in Six Globular Clusters. *Bradford B. Behr.* 149, 67 (2003)

Rotation Velocities of Red and Blue Field Horizontal-Branch Stars. *Bradford B. Behr.* 149, 101 (2003)

Carbon-Oxygen White Dwarf Accreting CO-Rich Matter. II. Self-Regulating Accretion Process up to the Explosive Stage. *Luciano Piersanti, Simona Gagliardi, Icko Iben, Jr., & Amedeo Tornambe.* 598, 1229 (2003)

Thermal Stability of Rotating Low-Mass Subgiants and Red Giants. *Pavel A. Denissenkov & Don A. VandenBerg.* 598, 1246 (2003)

X-Ray Sources with Periodic Variability in a Deep *Chandra* Image of the Galactic Center. *M. P. Muno, F. K. Baganoff, M. W. Bautz, W. N. Brandt, G. P. Garmire, & G. R. Ricker.* 599, 465 (2003)

Magnetic Braking Revisited. *N. Ivanova & Ronald E. Taam.* 599, 516 (2003)

Magnetic Braking and Viscous Damping of Differential Rotation in Cylindrical Stars. *James N. Cook, Stuart L. Shapiro, & Branson C. Stephens.* 599, 1272 (2003)

STARS: SPOTS

Method for Spot Detection on Solar-like Stars. *Adriana V. R. Silva.* 585, L147 (2003)

Dynamo Action Driven by Shear and Magnetic Buoyancy. *Kelly S. Cline, Nicholas H. Brummell, & Fausto Cattaneo.* 599, 1449 (2003)

STARS: STATISTICS

Stellar Halo Parameters from 4588 Subdwarfs. *Andrew Gould.* 583, 765 (2003)

A Possible Correlation between Mass Ratio and Period Ration in Multiple Planetary Systems. *Tsevi Mazeh & Shay Zucker.* 590, L115 (2003)

An Upper Limit on the Granularity of the Local Stellar Halo. *Andrew Gould.* 592, L63 (2003)

STARS: STELLAR DYNAMICS

Analysis of the Quiescent Low-Mass X-Ray Binary Populaton in Galactic Globular Clusters. *C. O. Heinke, J. E. Grindlay, P. M. Lugger, H. N. Cohn, P. D. Edmonds, D. A. Lloyd, & A. M. Cool.* 598, 501 (2003)

STARS: SUBDWARFS

Discovery of a New Class of Pulsating Stars: Gravity-Mode Pulsators among Subdwarf B Stars. *E. M. Green, G. Fontaine, M. D. Reed, K. Callerame, I. R. Seitenzahl, B. A. White, E. A. Hyde, R. Østensen, O. Cordes, P. Brassard, S. Falter, E. J. Jeffery, S. Dreizler, S. L. Schuh, M. Giovanni, H. Edelmann, J. Rigby, & A. Bronowska.* 583, L31 (2003)

Stellar Halo Parameters from 4588 Subdwarfs. *Andrew Gould.* 583, 765 (2003)

Discovery of an Ultracool Subdwarf: LSR 1425+7102, the First Star with Spectral Type sdM8.0. *Sébastien Lépine, Michael M. Shara, & R. Michael Rich.* 585, L69 (2003)

LSR 1610−0040: The First Early-Type L Subdwarf. *Sébastien Lépine, R. Michael Rich, & Michael M. Shara.* 591, L49 (2003)

The First Substellar Subdwarf? Discovery of a Metal-poor L Dwarf with Halo Kinematics. *Adam J. Burgasser, J. Davy Kirkpatrick, Adam Burrows, James Liebert, I. Neill Reid, John E. Gizis, Mark R. McGovern, L. Prato, & Ian S. McLean.* 592, 1186 (2003)

An Upper Limit on the Granularity of the Local Stellar Halo. *Andrew Gould.* 592, L63 (2003)

A Driving Mechanism for the Newly Discovered Long-Period Pulsating Subdwarf B Stars. *G. Fontaine, P. Brassard, S. Charpinet, E. M. Green, P. Chayer, M. Billères, & S. K. Randall.* 597, 518 (2003)

The Deuterium-to-Oxygen Ratio in the Interstellar Medium. *Guillaume Hébrard & H. Warren Moos.* 599, 296 (2003)

Magnesium Isotopic Abundance Ratios in Cool Stars. *David Yong, David L. Lambert, & Inese I. Ivans.* 599, 1357 (2003)

STARS: SUPERGIANTS

High-Resolution Spectroscopy of the Yellow Hypergiant ρ Cassiopeiae from 1993 through the Outburst of 2000–2001. *A. Lobel, A. K. Dupree, R. P. Stefanik, G. Torres, G. Israelian, N. Morrison, C. de Jager, H. Nieuwenhuijzen, I. Ilyin, & F. Musaev.* 583, 923 (2003)

Really Cool Stars and the Star Formation History at the Galactic Center. *R. D. Blum, Solange V. Ramírez, K. Sellgren, & K. Olsen.* 597, 323 (2003)

Radiative Instability in Stellar Envelopes. *Richard B. Stothers.* 599, L103 (2003)

STARS: SUPERNOVAE: GENERAL

The Myriad-Source Model of Cosmic Rays. I. Steady State Age and Path Length Distributions. *J. C. Higdon & R. E. Lingenfelter.* 582, 330 (2003)

Observed and Physical Properties of Core-Collapse Supernovae. *Mario Hamuy.* 582, 905 (2003)

Type Ia Supernovae and High-Velocity White Dwarfs. *Brad M. S. Hansen.* 582, 915 (2003)

Discovery of the Low-Redshift Optical Afterglow of GRB 011121 and Its Progenitor Supernova SN 2001ke. *P. M. Garnavich, K. Z. Stanek, L. Wyrzykowski, L. Infante, E. Bendek, D. Bersier, S. T. Holland, S. Jha, T. Matheson, R. P. Kirshner, K. Krisciunas, M. M. Phillips, & R. G. Carlberg.* 582, 924 (2003)

Gravitational Lensing Magnification and Time Delay Statistics for Distant Supernovae. *Masamune Oguri, Yasushi Suto, & Edwin L. Turner.* 583, 584 (2003)

Carbon-Oxygen White Dwarfs Accreting CO-rich Matter. I. A Comparison between Rotating and Nonrotating Models. *Luciano Piersanti, Simona Gagliardi, Icko Iben, Jr., & Amedeo Tornambé.* 583, 885 (2003)

Collapsar Uncorking and Jet Eruption in Gamma-Ray Bursts. *E. Waxman & P. Mészáros.* 584, 390 (2003)

The Magnetorotational Instability in Core-Collapse Supernova Explosions. *Shizuka Akiyama, J. Craig Wheeler, David L. Meier, & Itamar Lichtenstadt.* 584, 954 (2003)

Stability of Standing Accretion Shocks, with an Eye toward Core-Collapse Supernovae. *John M. Blondin, Anthony Mezzacappa, & Christine DeMarino.* 584, 971 (2003)

Constraints on Cardassian Expansion from Distant Type Ia Supernovae. *Zhong-Hong Zhu & Masa-Katsu Fujimoto.* 585, 52 (2003)

p-Process Nucleosynthesis inside Supernova-driven Supercritical Accretion Disks. *Shin-ichirou Fujimoto, Masa-aki Hashimoto, Osamu Koike, Kenzo Arai, & Ryuichi Matsuba.* 585, 418 (2003)

Corrective Lenses for High-Redshift Supernovae. *Neal Dalal, Daniel E. Holz, Xuelei Chen, & Joshua A. Frieman.* 585, L11 (2003)

Magnetic Protoneutron Star Winds and *r*-Process Nucleosynthesis. *Todd A. Thompson.* 585, L33 (2003)

Ozone Depletion from Nearby Supernovae. *Neil Gehrels, Claude M. Laird, Charles H. Jackman, John K. Cannizzo, Barbara J. Mattson, & Wan Chen.* 585, 1169 (2003)

Excavation of the First Stars. *Toshikazu Shigeyama, Takuji Tsujimoto, & Yuzuru Yoshii.* 586, L57 (2003)

Predicted Fe II Emission-Line Strengths from Active Galactic Nuclei. *T. A. A. Sigut & Anil K. Pradhan.* 145, 15 (2003)

Very Long Baseline Array Continuum and H I Absorption Observations of the Ultraluminous Infrared Galaxy IRAS 17208−0014. *Emmanuel Momjian, Jonathan D. Romney, Christopher L. Carilli, Thomas H. Troland, & Gregory B. Taylor.* 587, 160 (2003)

Electron Neutrino Pair Annihilation: A New Source for Muon and Tau Neutrinos in Supernovae. *Robert Buras, Hans-Thomas Janka, Mathias Th. Keil, Georg G. Raffelt, & Markus Rampp.* 587, 320 (2003)

The Nonlinear Evolution of Massive Stellar Core Collapses that "Fizzle." *James N. Imamura, Brian K. Pickett, & Richard H. Durisen.* 587, 341 (2003)

The Rate and the Origin of Type Ia Supernovae in Radio Galaxies. *Massimo Della Valle & Nino Panagia.* 587, L71 (2003)

Detectibility of Mixed Unburnt C+O in Type Ia Supernova Spectra. *E. Baron, Eric J. Lentz, & Peter H. Hauschildt.* 588, L29 (2003)

Cosmological Acceleration through Transition to Constant Scalar Curvature. *Leonard Parker, William Komp, & Daniel A. T. Vanzella.* 588, 663 (2003)

On the Small-Scale Stability of Thermonuclear Flames in Type Ia Supernovae. *F. K. Roepke, J. C. Niemeyer, & W. Hillenbrandt.* 588, 952 (2003)

Discovery of Two Distant Type Ia Supernovae in the Hubble Deep Field–North with the Advanced Camera for Surveys. *John P. Blakeslee, Zlatan I. Tsvetanov, Adam G. Riess, Holland C. Ford, Garth D. Illingworth, Daniel Magee, John L. Tonry, Narciso Benítez, Mark Clampin, George F. Hartig, Gerhardt R. Meurer, Marco Sirianni, David R. Ardila, Frank Bartko, Rychard Bouwens, Tom Broadhurst, Nicholas Cross, P. D. Feldman, Marijn Franx, David A. Golimowski, Caryl Gronwall, Randy Kimble, John Krist, André R. Martel, Felipe Menanteau, George Miley, Marc Postman, Piero Rosati, William Sparks, L.-G. Strolger, Hien D. Tran, Richard L. White, & Wei Zheng.* 589, 693 (2003)

Magnetars in the Metagalaxy: An Origin for Ultra–High-Energy Cosmic Rays in the Nearby Universe. *Jonathan Arons.* 589, 871 (2003)

Wind-Interaction Models for the Early Afterglows of Gamma-Ray Bursts: The Case of GRB 021004. *Zhi-Yun Li & Roger A. Chevalier.* 589, L69 (2003)

Supernova Enrichment of Dwarf Spheroidal Galaxies. *P. Chris Fragile, Stephen D. Murray, Peter Anninos, & Douglas N. C. Lin.* 590, 778 (2003)

Star Formation History of ω Centauri Imprinted in Elemental Abundance Patterns. *Takuji Tsujimoto & Toshikazy Shigeyama.* 590, 803 (2003)

The Superbubble Origin of ^{22}Ne in Cosmic Rays. *J. C. Higdon & R. E. Lingenfelter.* 590, 822 (2003)

Multicolor Light Curves of Type Ia Supernovae on the Color-Magnitude Diagram: A Novel Step toward More Precise Distance and Extinction Estimates. *Lifan Wang, Gerson Goldhaber, Greg Aldering, & Saul Perlmutter.* 590, 944 (2003)

Monte Carlo Study of Supernova Neutrino Spectra Formation. *Mathias Th. Keil, Georg G. Raffelt, & Hans-Thomas Janka.* 590, 971 (2003)

On Variations in the Peak Luminosity of Type Ia Supernovae. *F. X. Timmes, Edward F. Brown, & J. W. Truran.* 590, L83 (2003)

The Universe Was Reionized Twice. *Renyue Cen.* 591, 12 (2003)

Actinides in the Source of Cosmic Rays and the Present Interstellar Medium. *R. E. Lingenfelter, J. C. Higdon, K.-L. Kratz, & B. Pfeiffer.* 591, 228 (2003)

How Massive Single Stars End Their Life. *A. Heger, C. L. Fryer, S. E. Woosley, N. Langer, & D. H. Hartmann.* 591, 288 (2003)

Near-Infrared Spectra of Type Ia Supernovae. *G. H. Marion, P. Höflich, W. D. Vacca, & J. C. Wheeler.* 591, 316 (2003)

Spectroscopic Discovery of the Supernova 2003dh Associated with GRB 030329. *K. Z. Stanek, T. Matheson, P. M. Garnavich, P. Martini, P. Berlind, N. Caldwell, P. Challis, W. R. Brown, R. Schild, K. Krisciunas, M. L. Calkins, J. C. Lee, N. Hathi, R. A. Jansen, R. Windhorst, L. Echevarria, D. J. Eisenstein, B. Pindor, E. W. Olszewski, P. Harding, S. T. Holland, & D. Bersier.* 591, L17 (2003)

Spectropolarimetry of SN 2001el in NGC 1448: Asphericity of a Normal Type Ia Supernova. *Lifan Wang, Dietrich Baade, Peter Höflich, Alexei Khokhlov, J. Craig Wheeler, D. Kasen, Peter E. Nugent, Saul Perlmutter, Claes Fransson, & Peter Lundqvist.* 591, 1110 (2003)

ω Centauri: Not a Recent Merger but Self-enriched? *Imants Platais, Rosemary F. G. Wyse, Leslie Hebb, Young-Wook Lee, & Soo-Chang Rey.* 591, L127 (2003)

Prospects for the Determination of H_0 through Observation of Multiply Imaged Supernovae in Galaxy Cluster Fields. *Adam S. Bolton & Scott Burles.* 592, 17 (2003)

Evolution, Explosion, and Nucleosynthesis of Core-Collapse Supernovae. *Marco Limongi & Alessandro Chieffi.* 592, 404 (2003)

Shock Breakout in Core-Collapse Supernovae and Its Neutrino Signature. *Todd A. Thompson, Adam Burrows, & Philip A. Pinto.* 592, 434 (2003)

Spectropolarimetry of the Type Ic Supernova SN 2002ap in M74: More Evidence for Asymmetric Core Collapse. *Lifan Wang, Dietrich Baade, Peter Höflich, & J. Craig Wheeler.* 592, 457 (2003)

The Optical/Near-Infrared Light Curves of SN 2002ap for the First 140 Days after Discovery. *Yuzuru Yoshii, Hiroyuki Tomita, Yukiyasu Kobayashi, Jinsong Deng, Keiichi Maeda, Ken'ichi Nomoto, Paolo A. Mazzali, Hideyuki Umeda, Tsutomu Aoki, Mamoru Doi, Keigo Enya, Takeo Minezaki, Masahiro Suganuma, & Bruce A. Peterson.* 592, 467 (2003)

Radio Emission from SN 2001gd in NGC 5033. *Christopher J. Stockdale, Kurt W. Weiler, Schuyler D. Van Dyk, Marcos J. Montes, Nino Panagia, Richard A. Sramek, M. A. Perez-Torres, & J. M. Marcaide.* 592, 900 (2003)

Chemical Substructure in the Milky Way Halo: A New Population of Old Stars. *Inese I. Ivans, Christopher Sneden, C. Renée James, George W. Preston, Jon P. Fulbright, Peter A. Höflich, Bruce W. Carney, & J. Craig Wheeler.* 592, 906 (2003)

Global Anisotrophy versus Small-Scale Fluctuations in Neutrino Flux in Core-Collapse Supernova Explosions. *Hideki Madokoro, Tetsuya Shimizu, & Yuko Mochizuki.* 592, 1035 (2003)

Thermal X-Ray Emission from Shocked Ejecta in Type Ia Supernova Remnants. Prospects for Explosion Mechanism Identification. *Carles Badenes, Eduardo Bravo, Kazimierz J. Borkowski, & Inmaculada Domínguez.* 593, 358 (2003)

On the Spectrum and Spectropolarimetry of Type Ic Hypernova SN 2003dh/GRB 030329. *K. S. Kawabata, J. Deng, L. Wang, P. Mazzali, K. Nomoto, K. Maeda, N. Tominaga, H. Umeda, M. Iye, G. Kosugi, Y. Ohyama, T. Sasaki, P. Höflich, J. C. Wheeler, D. J. Jeffery, K. Aoki, N. Kashikawa, T. Takata, N. Kawai, T. Sakamoto, Y. Urata, A. Yoshida, T. Tamagawa, K. Torii, W. Aoki, N. Kobayashi, Y. Komiyama, Y. Mizumoto, J. Noumaru, R. Ogasawara, K. Sekiguchi, Y. Shirasaki, T. Totani, J. Watanabe, & T. Yamada.* 593, L19 (2003)

Cassiopeia A and Its Clumpy Presupernova Wind. *Roger A. Chevalier & Jeffrey Oishi.* 593, L23 (2003)

A Two-Component Model for the Light Curves of Hypernovae. *Keiichi Maeda, Paolo A. Mazzali, Jingsong Deng, Ken'ichi Nomoto, Yuzuru Yoshii, Hiroyuki Tomita, & Yukiyasu Kobayashi.* 593, 931 (2003)

The r-Process in Supernovae Explosions from the Collapse of O-Ne-Mg Cores. *Shinya Wanajo, Masaya Tamamura, Naoki Itoh, Ken'ichi Nomoto, Yuhri Ishimaru, Timothy C. Beers, & Satoshi Nozawa.* 593, 968 (2003)

Radio Imaging of Gamma-Ray Burst Jets in Nearby Supernovae. *Jonathan Granot & Abraham Loeb.* 593, L81 (2003)

Cosmological Results from High-z Supernovae. *John L. Tonry, Brian P. Schmidt, Brian Barris, Pablo Candia, Peter Challis, Alejandro Clocchiatti, Alison L. Coil, Alexei V. Filippenko, Peter Garnavich, Craig Hogan, Stephen T. Holland, Saurabh Jha, Robert P. Kirshner, Kevin Krisciunas, Bruno Leibundgut, Weidong Li, Thomas Matheson, Mark M. Phillips, Adam G. Riess, Robert Schommer, R. Chris Smith, Jesper Sollerman, Jason Spyromilio, Christopher W. Stubbs, & Nicholas B. Suntzeff.* 594, 1 (2003)

Future Type Ia Supernova Data as Tests of Dark Energy from Modified Friedmann Equations. *Yun Wang, Katherine Freese, Paolo Gondolo, & Matthew Lewis.* 594, 25 (2003)

A New Method to Map Flares in Quasars. *Atsunori Yonehara, Shin Mineshige, Yoh Takei, George Chartas, & Edwin L. Turner.* 594, 107 (2003)

Supernova Reverse Shocks: SiC Growth and Isotopic Composition. *Ethan A.-N. Deneault, Donald D. Clayton, & Alexander Heger.* 594, 312 (2003)

Gamma-Ray Lines from Asymmetric Supernovae. *Aimee L. Hungerford, Chris L. Fryer, & Michael S. Warren.* 594, 390 (2003)

Gamma-Ray Bursts from Neutron Star Kicks. *Y. F. Huang, Z. G. Dai, T. Lu, K. S. Cheng, & X. F. Wu.* 594, 919 (2003)

Have the Elusive Progenitors of Type Ia Supernovae Been Discovered? *Mario Livio & Adam G. Riess.* 594, L93 (2003)

On the Origin of HE 0107−5240, the Most Iron-deficient Star Presently Known. *Marco Limongi, Alessandro Chieffi, & Piercarlo Bonifacio.* 594, L123 (2003)

Anisotropic Neutrino Radiation in Rotational Core Collapse. *Kei Kotake, Shoichi Yamada, & Katsuhiko Sato.* 595, 304 (2003)

Delayed Soft X-Ray Emission Lines in the Afterglow of GRB 030227. *D. Watson, J. N. Reeves, J. Hjorth, P. Jakobsson, & K. Pedersen.* 595, L29 (2003)

Optical and Near-Infrared Photometry of the Type Ia Supernova 2000E in NGC 6951. *G. Valentini, E. Di Carlo, F. Massi, M. Dolci, A. A. Arkharov, V. M. Larionov, A. Pastorello, A. Di Paola, S. Benetti, E. Cappellaro, M. Turatto, F. Pedichini, F. D'Alessio, A. Caratti o Garatti, G. Li Causi, R. Speziali, I. J. Danziger, & A. Tornambé.* 595, 779 (2003)

The Response of Model and Astrophysical Thermonuclear Flames to Curvature and Stretch. *L. J. Dursi, M. Zingale, A. C. Calder, B. Fryxell, F. X. Timmes, N. Vladimirova, R. Rosner, A. Caceres, D. Q. Lamb, K. Olson, P. M. Ricker, K. Riley, A. Siegel, & J. W. Truran.* 595, 955 (2003)

Evolution of Rotating Accreting White Dwarfs and the Diversity of Type Ia Supernovae. *Tatsuhiro Uenishi, Ken'ichi Nomoto, & Izumi Hachisu.* 595, 1094 (2003)

X-Ray Emission from a Sample of Young Supernovae. *Joel N. Bregman, John C. Houck, Roger A. Chevalier, & Morton S. Roberts.* 596, 323 (2003)

The First Supernova Explosions in the Universe. *Volker Bromm, Naoki Yoshida, & Lars Hernquist.* 596, L135 (2003)

A Fallback Disk Model for Ultraluminous X-Ray Sources. *Xiang-Dong Li.* 596, L199 (2003)

Where Was the Iron Synthesized in Cassiopeia A? *Una Hwang & J. Martin Laming.* 597, 362 (2003)

The X-Ray Afterglows of GRB 020813 and GRB 021004 with *Chandra* HETGS: Possible Evidence for a Supernova prior to GRB 020813. *Nathanial R. Butler, Herman L. Marshall, George R. Ricker, Roland K. Vanderspek, Peter G. Ford, Geoffrey B. Crew, Donald Q. Lamb, & J. Garrett Jernigan.* 597, 1010 (2003)

New Constraints on Ω_M, Ω_Λ, and w from an Independent Set of 11 High-Redshift Supernovae Observed with the *Hubble Space Telescope*. *R. A. Knop, G. Aldering, R. Amanullah, P. Astier, G. Blanc, M. S. Burns, A. Conley, S. E. Deustua, M. Doi, R. Ellis, S. Fabbro, G. Folatelli, A. S. Fruchter, G. Garavini, S. Garmond, K. Garton, R. Gibbons, G. Goldhaber, A. Goobar, D. E. Groom, D. Hardin, I. Hook, D. A. Howell, A. G. Kim, B. C. Lee, C. Lidman, J. Mendez, S. Nobili, P. E. Nugent, R. Pain, N. Panagia, C. R. Pennypacker, S. Perlmutter, R. Quimby, J. Raux, N. Regnault, P. Ruiz-Lapuente, G. Sainton, B. Schaefer, K. Schahmaneche, E. Smith, A. L. Wood-Vasey, & N. Yasuda.* 598, 102 (2003)

A Presolar Galactic Merger Spawned the SiC-Grain Mainstream. *Donald D. Clayton.* 598, 313 (2003)

Dust in the Early Universe: Dust Formation in the Ejecta of Population III Supernovae. *Takaya Nozawa, Takashi Kozasa, Hideyuki Umeda, Keiichi Maeda, & Ken'ichi Nomoto.* 598, 785 (2003)

Bipolar Supernova Explosions: Nucleosynthesis and Implications for Abundances in Extremely Metal-Poor Stars. *Keiichi Maeda & Ken'ichi Nomoto.* 598, 1163 (2003)

Carbon-Oxygen White Dwarf Accreting CO-Rich Matter. II. Self-Regulating Accretion Process up to the Explosive Stage. *Luciano Piersanti, Simona Gagliardi, Icko Iben, Jr., & Amedeo Tornambe.* 598, 1229 (2003)

Photometry and Spectroscopy of GRB 03029 and Its Associated Supernova 2003dh: The First Two Months. *T. Matheson, P. M. Garnavich, K. Z. Stanek, D. Bersier, S. T. Holland, K. Krisciunas, N. Caldwell, P. Berlind, J. S. Bloom, M. Bolte, A. Z. Bonanos, M. J. I. Brown, W. R. Brown, M. L. Calkins, P. Challis, R. Chornock, L. Echevarria, D. J. Eisenstein, M. E. Everett, A. V. Filippenko, K. Flint, R. J. Foley, D. L. Freedman, Mario Hamuy, P. Harding, N. P. Hathi, M. Hicken, C. Hoopes, C. Impey, B. T. Jannuzi, R. A. Jansen, S. Jha, J. Kaluzny, S. Kannappan, R. P. Kirshner, D. W. Latham, J. C. Lee, D. C. Leonard, W. Li, K. L. Luhman, P. Martini, H. Mathis, J. Maza, S. T. Megeath, L. R. Miller, D. Minniti, E. W. Olszewski, M. Papenkova, M. M. Phillips, B. Pindor, D. D. Sasselov, R. Schild, H. Schweiker, T. Spahr, J. Thomas-Osip, I. Thompson, D. Weisz, R. Windhorst, & D. Zaritsky.* 599, 394 (2003)

A Radio Survey of Type Ib and Ic Supernovae: Searching for Engine-driven Supernovae. *E. Berger, S. R. Kulkarni, D. A. Frail, & A. M. Soderberg.* 599, 408 (2003)

Spectroscopic Detection of Type Ia Supernovae in the Sloan Digital Sky Survey. *Darren S. Madgwick, Paul C. Hewett, Daniel J. Mortlock, & Lifan Wang.* 599, L33 (2003)

GRB 011121: A Collimated Outflow into Wind-blown Surroundings. *J. Greiner, S. Klose, M. Salvato, A. Zeh, R. Schwarz, D. H. Hartmann, N. Masetti, B. Stecklum, G. Lamer, N. Lodieu, R. D. Scholz, C. Sterken, J. Gorosabel, I. Burud, J. Rhoads, I. Mitrofanov, M. Litvak, A. Sanin, V. Grinkov, M. I. Andersen, J. M. Castro Cerón, A. J. Castro-Tirado, A. Fruchter, J. U. Fynbo, J. Hjorth, L. Kaper, C. Kouveliotou, E. Palazzi, E. Pian, E. Rol, N. R. Tanvir, P. M. Vreeswijk, R. A. M. J. Wijers, & E. van den Heuvel.* 599, 1223 (2003)

The Type Ic Hypernova SN 2003dh/GRB 030329. *Paolo A. Mazzali, Jinsong Deng, Nozomu Tominaga, Keiichi Maeda, Ken'ichi Nomoto, Thomas Matheson, Koji S. Kawabata, Krzysztof Z. Stanek, & Peter M. Garnavich.* 599, L95 (2003)

STARS: SUPERNOVAE: INDIVIDUAL

Name: Kepler

Cold Dust in Kepler's Supernova Remnant. *H. L. Morgan, L. Dunne, S. A. Eales, R. J. Ivison, & M. G. Edmunds.* 597, L33 (2003)

Alphanumeric: G11.2−0.3

The Pulsar Wind Nebula in G11.2−0.3. *Mallory S. E. Roberts, Cindy R. Tam, Victoria M. Kaspi, Maxim Lyutikov, Gautam Vasisht, Michael Pivovaroff, Eric V. Gotthelf, & Nobuyuki Kawai.* 588, 992 (2003)

The Expansion of G11.2−0.3, a Radio Composite Supernova Remnant. *Cindy Tam & Mallory S. E. Roberts.* 598, L27 (2003)

Alphanumeric: G29.7−0.3

Chandra X-Ray Imaging Spectroscopy of the Young Supernova Remnant Kesteven 75. *David J. Helfand, Benjamin F. Collins, & E. V. Gotthelf.* 582, 783 (2003)

Alphanumeric: SN 1006

The SN 1006 Remnant: Optical Proper Motions, Deep Imaging, Distance, and Brightness at Maximum. *P. Frank Winkler, Gaurav Gupta, & Knox S. Long.* 585, 324 (2003)

Alphanumeric: SN 1979C

SN 1979C VLBI: 22 Years of Almost Free Expansion. *Norbert Bartel & Michael F. Bietenholz.* 591, 301 (2003)

Alphanumeric: SN 1987A

Ozone Depletion from Nearby Supernovae. *Neil Gehrels, Claude M. Laird, Charles H. Jackman, John K. Cannizzo, Barbara J. Mattson, & Wan Chen.* 585, 1169 (2003)

Detectability of Gravitational Waves from SN 1987A. *Giovanni Santostasi, Warren Johnson, & Juhan Frank.* 586, 1191 (2003)

Search for TeV Gamma Rays from SN 1987A in 2001. *R. Enomoto, L. T. Ksenofontov, H. Katagiri, K. Tsuchiya, A. Asahara, G. V. Bicknell, R. W. Clay, P. G. Edwards, S. Gunji, S. Hara, T. Hara, H. Hattori, Sei. Hayashi, Shin. Hayashi, C. Itoh, S. Kabuki, F. Kajino, A. Kawachi, T. Kifune, H. Kubo, J. Kushida, Y. Matsubara, Y. Mizumoto, M. Mori, H. Moro, H. Muraishi, Y. Muraki, T. Naito, T. Nakase, D. Nishida, K. Nishijima, M. Ohishi, K. Okumura, J. R. Patterson, R. J. Protheroe, K. Sakurazawa, D. L. Swaby, T. Tanimori, F. Tokanai, H. Tsunoo, T. Uchida, A. Watanabe, S. Watanabe, S. Yanagita, T. Yoshida, & T. Yoshikoshi.* 591, L25 (2003)

Hubble Space Telescope Observations of High-Velocity Lyα and Hα Emission from Supernova Remnant 1987A: The Structure and Development of the Reverse Shock. *Eli Michael, Richard McCray, Roger Chevalier, Alexei V. Filippenko, Peter Lundqvist, Peter Challis, Ben Sugerman, Stephen Lawrence, C. S. J. Pun, Peter Garnavich, Robert Kirshner, Arlin Crotts, Claes Fransson, Weidong Li, Nino Panagia, Mark Phillips, Brian Schmidt, George Sonneborn, Nicholas Suntzeff, Lifan Wang, & J. Craig Wheeler.* 593, 809 (2003)

Alphanumeric: SN 1993J

A Scattered Light Echo around SN 1993J in M81. *Ji-Feng Liu, Joel N. Bregman, & Patrick Seitzer.* 582, 919 (2003)

Chandra X-Ray Observations of the Spiral Galaxy M81. *Douglas A. Swartz, Kajal K. Ghosh, Michael L. McCollough, Thomas G. Pannuti, Allyn F. Tennant, & Kinwah Wu.* 144, 213 (2003)

Alphanumeric: SN 1993W

Determination of Primordial Metallicity and Mixing in the Type II-P Supernova 1993W. *E. Baron, Peter E. Nugent, David Branch, Peter H. Hauschildt, M. Turatto, & E. Cappellaro.* 586, 1199 (2003)

Alphanumeric: SN 1994D

SN 1993J VLBI. III. The Evolution of the Radio Shell. *M. F. Bietenholz, N. Bartel, & N. P. Rupen.* 597, 374 (2003)

Alphanumeric: SN 1997ef

A Two-Component Model for the Light Curves of Hypernovae. *Keiichi Maeda, Paolo A. Mazzali, Jingsong Deng, Ken'ichi Nomoto, Yuzuru Yoshii, Hiroyuki Tomita, & Yukiyasu Kobayashi.* 593, 931 (2003)

Alphanumeric: SN 1998bw

A Two-Component Model for the Light Curves of Hypernovae. *Keiichi Maeda, Paolo A. Mazzali, Jingsong Deng, Ken'ichi Nomoto, Yuzuru Yoshii, Hiroyuki Tomita, & Yukiyasu Kobayashi.* 593, 931 (2003)

Gamma-Ray Burst Energetics and the Gamma-Ray Burst Hubble Diagram: Promises and Limitations. *J. S. Bloom, D. A. Frail, & S. R. Kulkarni.* 594, 674 (2003)

Explosive Nucleosynthesis Associated with Formation of Jet-induced Gamma-Ray Bursts in Massive Stars. *S. Nagataki, A. Mizuta, S. Yamada, H. Takabe, & K. Sato.* 596, 401 (2003)

A Failed Gamma-Ray Burst with Dirty Energetic Jets Spirited Away? New Implications for the Gamma-Ray Burst–Supernova Connection from SN 2002ap. *Tomonori Totani.* 598, 1151 (2003)

Alphanumeric: SN 1999em

The Cepheid Distance to NGC 1637: A Direct Test of the Expanding Photosphere Method Distance to SN 1999em. *Douglas C. Leonard, Shashi M. Kanbur, Choong C. Ngeow, & Nial R. Tanvir.* 594, 247 (2003)

Alphanumeric: SN 2000E

Optical and Near-Infrared Photometry of the Type Ia Supernova 2000E in NGC 6951. *G. Valentini, E. Di Carlo, F. Massi, M. Dolci, A. A. Arkharov, V. M. Larionov, A. Pastorello, A. Di Paola, S. Benetti, E. Cappellaro, M. Turatto, F. Pedichini, F. D'Alessio, A. Caratti o Garatti, G. Li Causi, R. Speziali, I. J. Danziger, & A. Tornambé.* 595, 779 (2003)

Alphanumeric: SN 2001el

Spectropolarimetry of SN 2001el in NGC 1448: Asphericity of a Normal Type Ia Supernova. *Lifan Wang, Dietrich Baade, Peter Höflich, Alexei Khokhlov, J. Craig Wheeler, D. Kasen, Peter E. Nugent, Saul Perlmutter, Claes Fransson, & Peter Lundqvist.* 591, 1110 (2003)

Analysis of the Flux and Polarization Spectra of the Type Ia Supernova SN 2001el: Exploring the Geometry of the High-Velocity Ejecta. *Daniel Kasen, Peter Nugent, Lifan Wang, D. A. Howell, J. Craig Wheeler, Peter Höflich, Dietrich Baade, E. Baron, & P. H. Hauschildt.* 593, 788 (2003)

Alphanumeric: SN 2001gd

Radio Emission from SN 2001gd in NGC 5033. *Christopher J. Stockdale, Kurt W. Weiler, Schuyler D. Van Dyk, Marcos J. Montes, Nino Panagia, Richard A. Sramek, M. A. Perez-Torres, & J. M. Marcaide.* 592, 900 (2003)

Alphanumeric: SN 2001ke

Discovery of the Low-Redshift Optical Afterglow of GRB 011121 and Its Progenitor Supernova SN 2001ke. *P. M. Garnavich, K. Z. Stanek, L. Wyrzykowski, L. Infante, E. Bendek, D. Bersier, S. T. Holland, S. Jha, T. Matheson, R. P. Kirshner, K. Krisciunas, M. M. Phillips, & R. G. Carlberg.* 582, 924 (2003)

Alphanumeric: SN 2002ap

Spectropolarimetry of the Type Ic Supernova SN 2002ap in M74: More Evidence for Asymmetric Core Collapse. *Lifan Wang, Dietrich Baade, Peter Höflich, & J. Craig Wheeler.* 592, 457 (2003)

The Optical/Near-Infrared Light Curves of SN 2002ap for the First 140 Days after Discovery. *Yuzuru Yoshii, Hiroyuki Tomita, Yukiyasu Kobayashi, Jinsong Deng, Keiichi Maeda, Ken'ichi Nomoto, Paolo A. Mazzali, Hideyuki Umeda, Tsutomu Aoki, Mamoru Doi, Keigo Enya, Takeo Minezaki, Masahiro Suganuma, & Bruce A. Peterson.* 592, 467 (2003)

A Two-Component Model for the Light Curves of Hypernovae. *Keiichi Maeda, Paolo A. Mazzali, Jingsong Deng, Ken'ichi Nomoto, Yuzuru Yoshii, Hiroyuki Tomita, & Yukiyasu Kobayashi.* 593, 931 (2003)

A Failed Gamma-Ray Burst with Dirty Energetic Jets Spirited Away? New Implications for the Gamma-Ray Burst–Supernova Connection from SN 2002ap. *Tomonori Totani.* 598, 1151 (2003)

Alphanumeric: SN 2002dc

Discovery of Two Distant Type Ia Supernovae in the Hubble Deep Field–North with the Advanced Camera for Surveys. *John P. Blakeslee, Zlatan I. Tsvetanov, Adam G. Riess, Holland C. Ford, Garth D. Illingworth, Daniel Magee, John L. Tonry, Narciso Benítez, Mark Clampin, George F. Hartig, Gerhardt R. Meurer, Marco Sirianni, David R. Ardila, Frank Bartko, Rychard Bouwens, Tom Broadhurst, Nicholas Cross, P. D. Feldman, Marijn Franx, David A. Golimowski, Caryl Gronwall, Randy Kimble, John Krist, André R. Martel, Felipe Menanteau, George Miley, Marc Postman, Piero Rosati, William Sparks, L.-G. Strolger, Hien D. Tran, Richard L. White, & Wei Zheng.* 589, 693 (2003)

Alphanumeric: SN 2002dd

Discovery of Two Distant Type Ia Supernovae in the Hubble Deep Field–North with the Advanced Camera for Surveys. *John P. Blakeslee, Zlatan I. Tsvetanov, Adam G. Riess, Holland C. Ford, Garth D. Illingworth, Daniel Magee, John L. Tonry, Narciso Benítez, Mark Clampin, George F. Hartig, Gerhardt R. Meurer, Marco Sirianni, David R. Ardila, Frank Bartko, Rychard Bouwens, Tom Broadhurst, Nicholas Cross, P. D. Feldman, Marijn Franx, David A. Golimowski, Caryl Gronwall, Randy Kimble, John Krist, André R. Martel, Felipe Menanteau, George Miley, Marc Postman, Piero Rosati, William Sparks, L.-G. Strolger, Hien D. Tran, Richard L. White, & Wei Zheng.* 589, 693 (2003)

Alphanumeric: SN 2003dh

Spectroscopic Discovery of the Supernova 2003dh Associated with GRB 030329. *K. Z. Stanek, T. Matheson, P. M. Garnavich, P. Martini, P. Berlind, N. Caldwell, P. Challis, W. R. Brown, R. Schild, K. Krisciunas, M. L. Calkins, J. C. Lee, N. Hathi, R. A. Jansen, R. Windhorst, L. Echevarria, D. J. Eisenstein, B. Pindor, E. W. Olszewski, P. Harding, S. T. Holland, & D. Bersier.* 591, L17 (2003)

On the Spectrum and Spectropolarimetry of Type Ic Hypernova SN 2003dh/GRB 030329. *K. S. Kawabata, J. Deng, L. Wang, P. Mazzali, K. Nomoto, K. Maeda, N. Tominaga, H. Umeda, M. Iye, G. Kosugi, Y. Ohyama, T. Sasaki, P. Höflich, J. C. Wheeler, D. J. Jeffery, K. Aoki, N. Kashikawa, T. Takata, N. Kawai, T. Sakamoto, Y. Urata, A. Yoshida, T. Tamagawa, K. Torii, W. Aoki, N. Kobayashi, Y. Komiyama, Y. Mizumoto, J. Noumaru, R. Ogasawara, K. Sekiguchi, Y. Shirasaki, T. Totani, J. Watanabe, & T. Yamada.* 593, L19 (2003)

The Earliest Optical Observations of GRB 30329. *K. Torii, T. Kato, H. Yamaoka, T. Kohmura, Y. Okamoto, K. Ohnishi, K. Kadota, S. Yoshida, K. Kinugasa, M. Kohama, T. Oribe, & T. Kawabata.* 597, L101 (2003)

Photometry and Spectroscopy of GRB 03029 and Its Associated Supernova 2003dh: The First Two Months. *T. Matheson, P. M. Garnavich, K. Z. Stanek, D. Bersier, S. T. Holland, K. Krisciunas, N. Caldwell, P. Berlind, J. S. Bloom, M. Bolte, A. Z. Bonanos, M. J. I. Brown, W. R. Brown, M. L. Calkins, P. Challis, R. Chornock, L. Echevarria, D. J. Eisenstein, M. E. Everett, A. V. Filippenko, K. Flint, R. J. Foley, D. L. Freedman, Mario Hamuy, P. Harding, N. P. Hathi, M. Hicken, C. Hoopes, C. Impey, B. T. Jannuzi, R. A. Jansen, S. Jha, J. Kaluzny, S. Kannappan, R. P. Kirshner, D. W. Latham, J. C. Lee, D. C. Leonard, W. Li, K. L. Luhman, P. Martini, H. Mathis, J. Maza, S. T. Megeath, L. R. Miller, D. Minniti, E. W. Olszewski, M. Papenkova, M. M. Phillips, B. Pindor, D. D. Sasselov, R. Schild, H. Schweiker, T. Spahr, J. Thomas-Osip, I. Thompson, D. Weisz, R. Windhorst, & D. Zaritsky.* 599, 394 (2003)

The Type Ic Hypernova SN 2003dh/GRB 030329. *Paolo A. Mazzali, Jinsong Deng, Nozomu Tominaga, Keiichi Maeda, Ken'ichi Nomoto, Thomas Matheson, Koji S. Kawabata, Krzysztof Z. Stanek, & Peter M. Garnavich.* 599, L95 (2003)

STARS: VARIABLES: CEPHEIDS

Reconstructing Cepheid Light Curve with Fourier Techniques. I. The Fourier Expansion and Interrelations. *Chow-Choong Ngeow, Shashi M. Kanbur, Sergei Nikolaev, Nial R. Tanvir, & Martin A. Hendry.* 586, 959 (2003)

Reanalysis of Very Large Telescope Data for M83 with Image Subtraction—Ninefold Increase in Number of Cepheids. *A. Z. Bonanos & K. Z. Stanek.* 591, L111 (2003)

A Bayesian Analysis of the Cepheid Distance Scale. *Thomas G. Barnes III, W. H. Jefferys, J. O. Berger, Peter J. Mueller, K. Orr, & R. Rodriguez.* 592, 539 (2003)

The Cepheid Distance to NGC 1637: A Direct Test of the Expanding Photosphere Method Distance to SN 1999em. *Douglas C. Leonard, Shashi M. Kanbur, Choong C. Ngeow, & Nial R. Tanvir.* 594, 247 (2003)

STARS: VARIABLES: OTHER

Chandra, Extreme Ultraviolet Explorer, and Very Large Array Observations of the Active Binary System σ^2 Coronae Borealis. *Rachel A. Osten, Thomas R. Ayres, Alexander Brown, Jeffrey L. Linsky, & Anita Krishnamurthi.* 582, 1073 (2003)

High-Resolution Spectroscopy of the Yellow Hypergiant ρ Cassiopeiae from 1993 through the Outburst of 2000–2001. *A. Lobel, A. K. Dupree, R. P. Stefanik, G. Torres, G. Israelian, N. Morrison, C. de Jager, H. Nieuwenhuijzen, I. Ilyin, & F. Musaev.* 583, 923 (2003)

On the Origin of Long Secondary Periods in Semiregular Variables. *E. A. Olivier & P. R. Wood.* 584, 1035 (2003)

A Pulsation Mechanism for GW Virginis Variables. *Arthur N. Cox.* 585, 975 (2003)

The Position of Sagittarius A*. II. Accurate Positions and Proper Motions of Stellar SiO Masers near the Galactic Center. *M. J. Reid, K. M. Menten, R. Genzel, T. Ott, R. Schödel, & A. Eckart.* 587, 208 (2003)

Sloan Digital Sky Survey Catalog of Stars in the Draco Dwarf Spheroidal Galaxy. *Heather A. Rave, Chongshan Zhao, Heidi Jo Newberg, Brian Yanny, Donald P. Schneider, J. Brinkman, & Don Q. Lamb.* 145, 245 (2003)

A Polarization Survey of SiO Maser Variability in Evolved Stars. *J. Glenn, P. R. Jewell, R. Fourre, & L. Miaja.* 588, 478 (2003)

Spectroscopic and Spectropolarimetric Observations of V838 Monocerotis. *John P. Wisniewski, Nancy D. Morrison, Karen S. Bjorkman, Anatoly S. Miroshnichenko, Amanda C. Gault, Jennifer L. Hoffman, Marilyn R. Meade, & Jason M. Nett.* 588, 486 (2003)

The Remarkable Alternating Spectra of the Of?p Star HD 191612. *Nolan R. Walborn, Ian D. Howarth, Artemio Herrero, & Daniel J. Lennon.* 588, 1025 (2003)

RR Lyrae and Short-Period Variable Stars in the Dwarf Irregular Galaxy NGC 6822. *Gisella Clementini, Enrico V. Held, Lara Baldacci, & Luca Rizzi.* 588, L85 (2003)

Magnetic Star-Disk Coupling in Classical T Tauri Systems. *Manfred Küker, Thomas Henning, & Günther Rüdiger.* 589, 397 (2003)

High-Resolution Spectroscopy of the Pulsating White Dwarf G29-38. *Susan E. Thompson, J. C. Clemens, M. H. van Kerkwijk, & D. Koester.* 589, 921 (2003)

Gas in the Terrestrial Planet Region of Disks: CO Fundamental Emission from T Tauri Stars. *Joan Najita, John S. Carr, & Robert D. Mathieu.* 589, 931 (2003)

Turbulent Pressure in the Envelopes of Yellow Hypergiants and Luminous Blue Variables. *Richard B. Stothers.* 589, 960 (2003)

The Three-dimensional Kinematics of Water Masers around the Semiregular Variable RT Virginis. *Hiroshi Imai, Katsunori M. Shibata, Kevin B. Marvel, Philip J. Diamond, Tetsuo Sasao, Makoto Miyoshi, Makoto Inoue, Victor Migenes, & Yasuhiro Murata.* 590, 460 (2003)

A Theoretical γ Doradus Instability Strip. *Phillip B. Warner, Anthony B. Kaye, & Joyce A. Guzik.* 593, 1049 (2003)

Explaining UX Orionis Star Variability with Self-shadowed Disks. *C. P. Dullemond, M. E. van den Ancker, B. Acke, & R. van Boekel.* 594, L47 (2003)

Constraining the Evolution of ZZ Ceti. *Anjum S. Mukadem, S. O. Kepler, D. E. Winget, R. E. Nather, M. Kilic, F. Mullally, T. von Hippel, S. J. Kleinman, A. Nitta, J. A. Guzik, P. A. Bradley, J. Matthews, K. Sekiguchi, D. J. Sullivan, T. Sullivan, R. R. Shobbrook, P. Birch, X. J. Jiang, D. W. Xu, S. Joshi, B. N. Ashoka, P. Ibbetson, E. Leibowitz, E. O. Ofek, E. G. Meištas, R. Janulis, D. Ališauskas, R. Kalytis, G. Handler, D. Kilkenny, D. O'Donoghue, D. W. Kurtz, M. Müller, P. Moskalik, W. Ogłoza, S. Zoła, J. Krzesiński, F. Johannessen, J. M. Gonzalez-Perez, J. -E. Solheim, R. Silvotti, S. Bernabei, G. Vauclair, N. Dolez, J. N. Fu, M. Chevreton, M. Manteiga, O. Suárez, A. Ulla, M. S. Cunha, T. S. Metcalfe, A. Kanaan, L. Fraga, A. F. M. Costa, O. Giovannini, G. Fontaine, P. Bergeron, M. S. O'Brien, D. Sanwal, M. A. Wood, T. J. Ahrens, N. Silvestri, E. W. Klumpe, S. D. Kawaler, R. Riddle, M. D. Reed, & T. K. Watson.* 594, 961 (2003)

High-Resolution Spectroscopy of FU Orionis Stars. *G. H. Herbig, P. P. Petrov, & R. Duemmler.* 595, 384 (2003)

Winds in R Coronae Borealis Stars. *Geoffrey C. Clayton, T. R. Geballe, & Luciana Bianchi.* 595, 412 (2003)

Detection of the Evolutionary Stages of Variables in M3. *J. Jurcsik, J. M. Benko, G. A. Bakos, B. Szeidl, & R . Szabó.* 597, L49 (2003)

Raman-scattered He II λ6545 Line in the Symbiotic Star V1016 Cygni. *Hee-Won Lee, Young-Jong Sohn, Young Woon Kang, & Ho-Il Kim.* 598, 553 (2003)

The Dust Ring of Luminous Blue Variable Candidate HD 168625: Infrared Observations and Model Calculations. *Timothy B. O'Hara, Margaret Meixner, Angela K. Speck, Toshiya Ueta, & Matthew Bobrowsky.* 598, 1255 (2003)

GRO J0422+32: The Lowest Mass Black Hole? *Dawn M. Gelino & Thomas E. Harrison.* 599, 1254 (2003)

A Movie of a Star: Multiepoch Very Long Baseline Array Imaging of the SiO Masers toward the Mira Variable TX Cam. *P. J. Diamond & A. J. Kemball.* 599, 1372 (2003)

Radiative Instability in Stellar Envelopes. *Richard B. Stothers.* 599, L103 (2003)

(RR Lyrae)

RR Lyrae Stars in Galactic Globular Clusters. II. A Theoretical Approach to Variables in M3. *M. Marconi, F. Caputo, M. Di Criscienzo, & M. Castellani.* 596, 299 (2003)

The MACHO Project Large Magellanic Cloud Variable Star Inventory. XI. Frequency Analysis of the Fundamental Mode RR Lyrae Stars. *C. Alcock, D. R. Alves, A. Becker, D. Bennet, K. H. Cook, A. Drake, K. Freeman, M. Geha, K. Griest, G. Kovács, M. Lehner, S. Marshall, D. Minniti, C. Nelson, B. Peterson, P. Popowski, M. Pratt, P. Quinn, A. Rodgers, C. Stubbs, W. Sutherland, T. Vandehei, & D. L. Welch.* 598, 597 (2003)

STARS: WHITE DWARFS

Composite Accretion Disk and White Dwarf Model Analyses of the Quiescence of Dwarf Novae: EM Cygni, CZ Orionis, and WW Ceti. *Lisa Winter & Edward M. Sion.* 582, 352 (2003)

Type Ia Supernovae and High-Velocity White Dwarfs. *Brad M. S. Hansen.* 582, 915 (2003)

The Chemical Composition of White Dwarfs as a Test of Convective Efficiency during Core Helium Burning. *Oscar Straniero, Immaculada Domínguez, Gianluca Imbriani, & Luciano Piersanti.* 583, 878 (2003)

Carbon-Oxygen White Dwarfs Accreting CO-rich Matter. I. A Comparison between Rotating and Nonrotating Models. *Luciano Piersanti, Simona Gagliardi, Icko Iben, Jr., & Amedeo Tornambé.* 583, 885 (2003)

Hubble Space Telescope STIS Spectroscopy of the White Dwarfs in the Ultrashort-Period Dwarf Novae VY Aquarii and WX Ceti. *Edward M. Sion, Paula Szkody, Fuhua Cheng, Boris T. Gänsicke, & Steve B. Howell.* 583, 907 (2003)

XMM-Newton Spectroscopy of the Accretion-driven Millisecond X-Ray Pulsar XTE J1751−305 in Outburst. *J. M. Miller, R. Wijnands, M. Méndez, E. Kendziorra, A. Tiengo, M. van der Klis, D. Chakrabarty, B. M. Gaensler, & W. H. G. Lewin.* 583, L99 (2003)

Accretion and Outflow in Interacting Binary Systems: *Far Ultraviolet Spectropscopic Explorer* Observations of the Nova-like Cataclysmic Variable UX Ursae Majoris. *Cynthia S. Froning, Knox S. Long, & Christian Knigge.* 584, 433 (2003)

The Extraordinary X-Ray Light Curve of the Classical Nova V1494 Aquilae (1999 No. 2) in Outburst: The Discovery of Pulsations and a "Burst." *Jeremy J. Drake, R. Mark Wagner, Sumner Starrfield, Yousaf Butt, Joachim Krautter, H. E. Bond, M. Della Valle, R. D. Gehrz, Charles E. Woodward, A. Evans, M. Orio, P. Hauschildt, M. Hernanz, K. Mukai, & J. W. Truran.* 584, 448 (2003)

Near-Field Microlensing and Its Effects on Stellar Transit Observations by *Kepler*. *Kailash C. Sahu & Ronald L. Gilliland.* 584, 1042 (2003)

A Tidally Disrupted Asteroid around the White Dwarf G29-38. *M. Jura.* 584, L91 (2003)

A Critical Examination of Halo White Dwarf Candidates. *P. Bergeron.* 586, 201 (2003)

Modeling Accretional Heating in Dwarf Novae. *Patrick Godon & Edward M. Sion.* 586, 427 (2003)

Cool Companions to White Dwarfs from the Two Micron All-Sky Survey Second Incremental Data Release. *Stefanie Wachter, D. W. Hoard, Kathryn H. Hansen, Rebecca E. Wilcox, Hilda M. Taylor, & Steven L. Finkelstein.* 586, 1356 (2003)

Helium-Core White Dwarfs in Globular Clusters. *Brad M. S. Hansen, Vassiliki Kalogera, & Frederic A. Rasio.* 586, 1364 (2003)

Hubble Space Telescope Space Telescope Imaging Spectrograph Spectroscopy of the Intermediate Polar EX Hydrae. *Kunegunda E. Belle, Steve B. Howell, Edward M. Sion, Knox S. Long, & Paula Szkody.* 587, 373 (2003)

White Dwarf Asteroseismology and the $^{12}C(\alpha, \gamma)^{16}O$ Rate. *Travis S. Metcalfe.* 587, L43 (2003)

White Dwarf Sequences in Dense Star Clusters. *Jarrod R. Hurley & Michael M. Shara.* 589, 179 (2003)

High-Resolution Spectroscopy of the Pulsating White Dwarf G29-38. *Susan E. Thompson, J. C. Clemens, M. H. van Kerkwijk, & D. Koester.* 589, 921 (2003)

A Luminous Recurrent Supersoft X-Ray Source in NGC 300. *A. K. H. Kong & R. Di Stefano.* 590, L13 (2003)

A Confirmation of the Optical Spectroscopy Approach: Discovery of Two More Pulsating DA (ZZ Ceti) White Dwarfs. *G. Fontaine, P. Bergeron, M. Billères, & S. Charpinet.* 591, 1184 (2003)

An Archive of *IUE* Low-Dispersion Spectra of the White Dwarf Stars. *J. B. Holberg, M. A. Barstow, & M. R. Burleigh.* 147, 145 (2003)

Luminous Supersoft X-Ray Sources in External Galaxies. *R. Di Stefano & A. K. H. Kong.* 592, 884 (2003)

Hubble Space Telescope Spectroscopy of the Unexpected 2001 July Outburst of the Dwarf Nova WZ Sagittae. *Edward M. Sion, Boris T. Gaensicke, Knox S. Long, Paula Szkody, Fu-Hua Cheng, Steve B. Howell, Patrick Godon, William F. Welsh, Sumner Starrfield, Christian Knigge, & Warren M. Sparks.* 592, 1137 (2003)

Finding White Dwarfs with Transit Searches. *Alison J. Farmer & Eric Agol.* 592, 1151 (2003)

Chandra Observations of Magnetic White Dwarfs and Their Theoretical Implications. *Z. E. Musielak, M. Noble, J. G. Porter, & D. E. Winget.* 593, 481 (2003)

Phase Coherent Timing of RX J0806.3+1527 with *ROSAT* and *Chandra*. *Tod E. Strohmayer.* 593, L39 (2003)

A Multiwavelength Study of the High-Field Magnetic White Dwarf EUVE J0317−85.5 (=RE J0317−853). *Stéphane Vennes, G. D. Schmidt, L. Ferrario, D. J. Christian, D. T. Wickramasinghe, & A. Kawka.* 593, 1040 (2003)

Symmetrical Chemi-Ionization and Chemi-Recombination Processes in Low-Temperature Layers of Helium-rich DB White Dwarf Atmospheres. *A. A. Mihajlov, Lj. M. Ignjatović, M. S. Dimitrijević, & Z. Djurić.* 147, 369 (2003)

Anomalous Ultraviolet Line Flux Ratios in the Cataclysmic variables 1RXS J232953.9+062814, CE 315, BZ Ursae Majoris, and EY Cygni observed with the *Hubble Space Telescope* Space Telescope Imaging Spectrograph. *Boris T. Gänsicke, Paula Szkody, Domitilla de Martino, Klaus Beuermann, Knox S. Long, Edward M. Sion, Christian Knigge, Tom Marsh, & Ivan Hubeny.* 594, 443 (2003)

Extended Source Diffraction Effects near Gravitational Lens Fold Caustics. *S. A. Zabel & J. B. Peterson.* 594, 456 (2003)

Constraining the Evolution of ZZ Ceti. *Anjum S. Mukadem, S. O. Kepler, D. E. Winget, R. E. Nather, M. Kilic, F. Mullally, T. von Hippel, S. J. Kleinman, A. Nitta, J. A. Guzik, P. A. Bradley, J. Matthews, K. Sekiguchi, D. J. Sullivan, T. Sullivan, R. R. Shobbrook, P. Birch, X. J. Jiang, D. W. Xu, S. Joshi, B. N. Ashoka, P. Ibbetson, E. Leibowitz, E. O. Ofek, E. G. Meištas, R. Janulis, D. Ališauskas, R. Kalytis, G. Handler, D. Kilkenny, D. O'Donoghue, D. W. Kurtz, M. Müller, P. Moskalik, W. Ogłoza, S. Zola, J. Krzesiński, F. Johannessen, J. M. Gonzalez-Perez, J. -E. Solheim, R. Silvotti, S. Bernabei, G. Vauclair, N. Dolez, J. N. Fu, M. Chevreton, M. Manteiga, O. Suárez, A. Ulla, M. S. Cunha, T. S. Metcalfe, A. Kanaan, L. Fraga, A. F. M. Costa, O. Giovannini, G. Fontaine, P. Bergeron, M. S. O'Brien, D. Sanwal, M. A. Wood, T. J. Ahrens, N. Silvestri, E. W. Klumpe, S. D. Kawaler, R. Riddle, M. D. Reed, & T. K. Watson.* 594, 961 (2003)

A *Chandra* Low Energy Transmission Grating Spectrometer Observation of V4743 Sagittarii: A Supersoft X-Ray Source and a Violently Variable Light Curve. *J.-U. Ness, S. Starrfield, V. Burwitz, R. Wichmann, P. Hauschildt, J. J. Drake, R. M. Wagner, H. E. Bond, J. Krautter, M. Orio, M. Hernanz, R. D. Gehrz, C. E. Woodward, Y. Butt, K. Mukai, S. Balman, & J. W. Truran.* 594, L127 (2003)

The White Dwarf Deficit in Open Clusters: Dynamical Processes. *M. Fellhauer, D. N. C. Lin, M. Bolte, S. J. Aarseth, & K. A. Williams.* 595, L53 (2003)

Far Ultraviolet Spectroscopic Explorer Survey of the Local Interstellar Medium within 200 Parsecs. *N. Lehner, E. B. Jenkins, C. Gry, H. W. Moos, P. Chayer, & S. Lacour.* 595, 858 (2003)

The Response of Model and Astrophysical Thermonuclear Flames to Curvature and Stretch. *L. J. Dursi, M. Zingale, A. C. Calder, B. Fryxell, F. X. Timmes, N. Vladimirova, R. Rosner, A. Caceres, D. Q. Lamb, K. Olson, P. M. Ricker, K. Riley, A. Siegel, & J. W. Truran.* 595, 955 (2003)

Evolution of Rotating Accreting White Dwarfs and the Diversity of Type Ia Supernovae. *Tatsuhiro Uenishi, Ken'ichi Nomoto, & Izumi Hachisu.* 595, 1094 (2003)

Magnetic White Dwarfs from the Sloan Digital Sky Survey: The First Data Release. *Gary D. Schmidt, Hugh C. Harris, James Liebert, Daniel J. Eisenstein, Scott F. Anderson, J. Brinkmann, Patrick B. Hall, Michael Harvanek, Suzanne Hawley, S. J. Kleinman, Gillian R. Knapp, Jurek Krzesinski, Don Q. Lamb, Dan Long, Jeffrey A. Munn, Eric H. Neilsen, Peter R. Newman, Atsuko Nitta, David J. Schlegel, Donald P. Schneider, Nicole M. Silvestri, J. Allyn Smith, Stephanie A. Snedden, Paula Szkody, & Dan Vanden Berk.* 595, 1101 (2003)

Metal Lines in DA White Dwarfs. *B. Zuckerman, D. Koester, I. N. Reid, & M. Huensch.* 596, 477 (2003)

Gravitational Radiation from Pulsating White Dwarfs. *M. Benacquista, D. M. Sedrakian, M. V. Hairapetyan, K. M. Shahabasyan, & A. A. Sadoyan.* 596, L223 (2003)

Measuring White Dwarf Accretion Rates via Their Effective Temperatures. *Dean Townsley & Lars Bildsten.* 596, L227 (2003)

The Impact of the Chemical Stratification of White Dwarfs on the Classification of Classical Novae. *Jordi José, Margarita Hernanz, Enrique García-Berro, & Pilar Gil-Pons.* 597, L41 (2003)

The Pulsar/White Dwarf/Planet System in M4: Improved Astrometry. *Harvey B. Richer, Rodrigo Ibata, Gregory G. Fahlman, & Mark Huber.* 597, L45 (2003)

Coronal Element Abundances of the Post–Common-Envelope Binary V471 Tauri with *ASCA*. *Martin Still & Gaitee Hussain.* 597, 1059 (2003)

Far Ultraviolet Spectroscopic Explorer Observation of the Ultramassive White Dwarf PG 1658+441. *Jean Dupuis, Pierre Chayer, Stéphane Vennes, Nicole F. Allard, & Guillaume Hébrard.* 598, 486 (2003)

Unveiling the Nature of the 321 Second Modulation in RX J0806.3+1527: Near-Simultaneous *Chandra* and Very Large Telescope Observations.

G. L. Israel, S. Covino, L. Stella, C. W. Mauche, S. Campana, G. Marconi, W. Hummel, S. Mereghetti, U. Munari, & I. Negueruela. 598, 492 (2003)

White Dwarf Donors in Ultracompact Binaries: The Stellar Structure of Finite-Entropy Objects. *Christopher J. Deloye & Lars Bildsten.* 598, 1217 (2003)

Carbon-Oxygen White Dwarf Accreting CO-Rich Matter. II. Self-Regulating Accretion Process up to the Explosive Stage. *Luciano Piersanti, Simona Gagliardi, Icko Iben, Jr., & Amedeo Tornambe.* 598, 1229 (2003)

V445 Puppis: Helium Nova on a Massive White Dwarf. *Mariko Kato & Izumi Hachisu.* 598, L107 (2003)

The Deuterium-to-Oxygen Ratio in the Interstellar Medium. *Guillaume Hébrard & H. Warren Moos.* 599, 296 (2003)

Hubble Space Telescope Observations of Ultraviolet Oscillations in WZ Sagittae during the Decline from Outburst. *William F. Welsh, Edward M. Sion, Patrick Godon, Boris T. Gänsicke, Christian Knigge, Knox S. Long, & Paula Szkody.* 599, 509 (2003)

Serendipity and the Sloan Digital Sky Survey: Discovery of the Largest Known Planetary Nebula on the Sky. *Paul C. Hewett, Michael J. Irwin, Evan D. Skillman, Craig B. Foltz, Jon P. Willis, Stephen J. Warren, & Nicholas A. Walton.* 599, L37 (2003)

A Far-Ultraviolet Survey of 47 Tucanae. II. The Long-Period Cataclysmic Variable AKO 9. *Christian Knigge, David R. Zurek, Michael M. Shara, Knox S. Long, & Ronald L. Gilliland.* 599, 1320 (2003)

PSR J1909−3744: A Binary Millisecond Pulsar with a Very Small Duty Cycle. *B. A. Jacoby, M. Bailes, M. H. van Kerkwijk, S. Ord, A. Hotan, S. R. Kulkarni, & S. B. Anderson.* 599, L99 (2003)

STARS: WINDS

The Statistical Sobolev-Rosseland Mean and the Effects of Frequency Redistribution on Wolf-Rayet Wind Driving. *A. J. Onifer & K. G. Gayley.* 590, 473 (2003)

A Westerbork Synthesis Radio Telescope 1400 and 350 MHz Continuum Survey of the Cygnus OB2 Association, in Search of Hot Massive Stars. *Diah Y. A. Setia Gunawan, A. Ger de Bruyn, Karel A. van der Hucht, & Peredur M. Williams.* 149, 123 (2003)

Hot Gas in the Circumstellar Bubble S308. *You-Hua Chu, Martín A. Guerrero, Robert A. Gruendl, Guillermo García-Segura, & Heinrich J. Wendker.* 599, 1189 (2003)

STARS: WINDS, OUTFLOWS

Stellar Outflows Driven by Magnetized Wide-Angle Winds. *T. A. Gardiner, A. Frank, & L. Hartmann.* 582, 269 (2003)

X-Ray Jet Emission from the Black Hole X-Ray Binary XTE J1550−564 with *Chandra* in 2000. *John A. Tomsick, Stéphane Corbel, Rob Fender, Jon M. Miller, Jerome A. Orosz, Tasso Tzioumis, Rudy Wijnands, & Philip Kaaret.* 582, 933 (2003)

X-Ray Emission from the Jets of XTE J1550−564. *P. Kaaret, S. Corbel, J. A. Tomsick, R. Fender, J. M. Miller, J. A. Orosz, T. Tzioumis, & R. Wijnands.* 582, 945 (2003)

On the Luminosities and Temperatures of Extended X-Ray Emission from Planetary Nebulae. *Noam Soker & Joel H. Kastner.* 583, 368 (2003)

Wind Accretion and State Transitions in Cygnus X-1. *D. R. Gies, C. T. Bolton, J. R. Thomson, W. Huang, M. V. McSwain, R. L. Riddle, Z. Wang, P. J. Wiita, D. W. Wingert, B. Csak, & L. L. Kiss.* 583, 424 (2003)

A Supernova Remnant Collision with a Stellar Wind. *Pablo F. Velázquez, Gloria Koenigsberger, & Alejandro C. Raga.* 584, 284 (2003)

Molecular Outflow Search in the ρ Ophiuchi A and B2 Regions. *Takeshi Kamazaki, Masao Saito, Naomi Hirano, Tomofuni Umemoto, & Ryohei Kawabe.* 584, 357 (2003)

Revised Analysis of the Supersoft X-Ray Phase, Helium Enrichment, and Turnoff Time in the 2000 Outburst of the Recurrent Nova CI Aquilae. *Izumi Hachisu, Mariko Kato, & Bradley E. Schaefer.* 584, 1008 (2003)

CH Cygni. I. Observational Evidence for a Disk-Jet Connection. *J. L. Sokoloski & S. J. Kenyon.* 584, 1021 (2003)

Quantitative Spectral Analysis of Early B-Type Supergiants in the Sculptor Galaxy NGC 300. *Miguel Alejandro Urbaneja, Aremio Herrero, Fabio Bresolin, Rolf-Peter Kudritzki, Wolfgang Gieren, & Joachim Puls.* 584, L73 (2003)

Magnetic Protoneutron Star Winds and r-Process Nucleosynthesis. *Todd A. Thompson.* 585, L33 (2003)

Ram Pressure Stripping in Planetary Nebulae. *Eva Villaver, Guillermo García-Segura, & Arturo Manchado.* 585, L49 (2003)

Shaping Proto–Planetary and Young Planetary Nebulae with Collimated Fast Winds. *Chin-Fei Lee & Raghvendra Sahai.* 586, 319 (2003)

Latitude-dependent Effects in the Stellar Wind of η Carinae. *Nathan Smith, Kris Davidson, Theodore R. Gull, Kazunori Ishibashi, & D. John Hillier.* 586, 432 (2003)

Multiple Molecular H_2 Outflows in AFGL 618. *P. Cox, P. J. Huggins, J.-P. Maillard, C. Muthu, R. Bachiller, & T. Forveille.* 586, L87 (2003)

Constraints on the Ionization Balance of Hot-Star Winds from *FUSE* Observations of O Stars in the Large Magellanic Cloud. *D. Massa, A. W. Fullerton, G. Sonneborn, & J. B. Hutchings.* 586, 996 (2003)

High-Velocity Jets in Recurrent Nova Outbursts. *Mariko Kato & Izumi Hachisu.* 587, L39 (2003)

A New Clue to the Transition Mechanism between Optical High and Low States of the Supersoft X-Ray Source RX J0513.9−6951, Implied from the Recurrent Nova CI Aquilae 2000 Outburst Model. *Izumi Hachisu & Mariko Kato.* 588, 1003 (2003)

Abundance Anomalies in the X-Ray Spectra of Planetary Nebulae NGC 7027 and BD +30°3639. *Holly L. Maness, Saeqa D. Vrtilek, Joel H. Kastner, & Noam Soker.* 589, 439 (2003)

Far Ultraviolet Spectroscopic Explorer Snapshot Survey of O VI Variability in the Winds of 66 OB-Type Stars. *N. Lehner, A. W. Fullerton, D. Massa, K. R. Sembach, & J. Zsargó.* 589, 526 (2003)

Global Asymptotic Solutions for Magnetohydrodynamic Jets and Winds. *I. Okamoto.* 589, 671 (2003)

The Stellar "Wind" of MWC 349A. *M. A. Gordon.* 589, 953 (2003)

Diffuse X-Ray Emission from the Quiescent Superbubble M17, the Omega Nebula. *Bryan C. Dunne, You-Hua Chu, C.-H. Rosie Chen, Justin D. Lowry, Leisa Townsley, Robert A. Gruendl, Martín A. Guerrero, & Margarita Rosado.* 590, 306 (2003)

RX J0513.9−6951: The First Example of Accretion Wind Evolution, a Key Evolutionary Process to Type Ia Supernovae. *Izumi Hachisu & Mariko Kato.* 590, 445 (2003)

Asterospheric Magnetic Fields and Winds of Cool Stars. *Carolus J. Schrijver, Marc L. DeRosa, & Alan M. Title.* 590, 493 (2003)

The Spatial Distribution of Fluorescent H_2 Emission near T Tauri. *José Saucedo, Nuria Calvet, Lee Hartmann, & John Raymond.* 591, 275 (2003)

A Compact X-Ray Source and Possible X-Ray Jets within the Planetary Nebula Menzel 3. *Joel H. Kastner, Bruce Balick, Eric G. Blackman, Adam Frank, Noam Soker, Saeqa D. Vrtilek, & Jingqiang Li.* 591, L37 (2003)

The Variable Jet of the Vela Pulsar. *G. G. Pavlov, M. A. Teter, O. Kargaltsev, & D. Sanwal.* 591, 1157 (2003)

A Search for Lyα Emission from the Astrosphere of 40 Eridani A. *Brian E. Wood, Jeffrey L. Linsky, Hans-Reinhard Mueller, & Gary P. Zank.* 591, 1210 (2003)

Magnetic Flares on Asymptotic Giant Branch Stars. *Noam Soker & Joel H. Kastner.* 592, 498 (2003)

X-Ray Emission-Line Profile Modeling of O Stars: Fitting a Spherically Symmetric Analytic Wind-Shock Model to the *Chandra* Spectrum of ζ Puppis. *Roban H. Kramer, David H. Cohen, & Stanley P. Owocki.* 592, 532 (2003)

Magnetic Roster Winds and Keplerian Disks of Hot Stars. *M. Maheswaran.* 592, 1156 (2003)

Gamma-Ray Bursts from Neutron Star Kicks. *Y. F. Huang, Z. G. Dai, T. Lu, K. S. Cheng, & X. F. Wu.* 594, 919 (2003)

GRB 021004: A Possible Shell Nebula around a Wolf-Rayet Star Gamma-Ray Burst Progenitor. *N. Mirabal, J. P. Halpern, Ryan Chornock, Alexei V. Filippenko, D. M. Terndrup, E. Armstrong, J. Kemp, J. R. Thorstensen, M. Tavarez, & C. Espaillat.* 595, 935 (2003)

Global Asymptotic Solutions for Relativistic Magnetohydrodynamic Jets and Winds. *Jean Heyvaerts & Colin Norman.* 596, 1240 (2003)

Kinetic Energy Flux versus Poynting Flux in Magnetohydrodynamic Winds and Jets: The Intermediate Regime. *Jean Heyvaerts & Colin Norman.* 596, 1256 (2003)

Global Asymptomatic Solutions for Nonrelativistic Magnetohydrodynamic Jets and Winds. *Jean Heyvaerts & Colin Norman.* 596, 1270 (2003)

A Model for the Formation of High-Density Clumps in Proto–Planetary Nebulae. *Patrick A. Young, J. L. Highberger, David Arnett, & L. M. Ziurys.* 597, L53 (2003)

Chandra Detections of Two Quiescent Black Hole X-Ray Transients. *John A. Tomsick, Stéphane Corbel, Rob Fender, Jon M. Miller, Jerome A. Orosz, Michael P. Rupen, Tasso Tzioumis, Rudy Wijnands, & Philip Kaaret.* 597, L133 (2003)

A Limit Cycle Model for Long-Term Optical Variations of V Sagittae: The Second Example of Accretion Wind Evolution. *Izumi Hachisu & Mariko Kato.* 598, 527 (2003)

Axisymmetric Magnetohydrodynamic Simulations of the Collapsar Model for Gamma-Ray Bursts. *Daniel Proga, Andrew I. MacFadyen, Philip J. Armitage, & Mitchell C. Begelman.* 599, L5 (2003)

He I λ10830 as a Probe of Winds in Accreting Young Stars. *Suzan Edwards, William Fischer, John Kwan, Lynne Hillenbrand, & A. K. Dupree.* 599, L41 (2003)

STARS: WOLF-RAYET

GRB 021004: A Massive Progenitor Star Surrounded by Shells. *Bradley E. Schaefer, C. L. Gerardy, P. Höflich, A. Panaitescu, R. Quimby, J. Mader, G. J. Hill, P. Kumar, J. C. Wheeler, M. Eracleous, S. Sigurdsson, P. Mészáros, B. Zhang, L. Wang, F. V. Hessman, & V. Petrosian.* 588, 387 (2003)

Turbulent Pressure in the Envelopes of Yellow Hypergiants and Luminous Blue Variables. *Richard B. Stothers.* 589, 960 (2003)

The Statistical Sobolev-Rosseland Mean and the Effects of Frequency Redistribution on Wolf-Rayet Wind Driving. *A. J. Onifer & K. G. Gayley.* 590, 473 (2003)

Discovery of Highly Dynamic Matter Enhancements along the Polar Axis and Equatorial Plane in the Luminous Blue Variable Binary HD 5980. *A. Villar-Sbaffi, Anthony F. J. Moffat, & N. St-Louis.* 590, 483 (2003)

The Superbubble Origin of ^{22}Ne in Cosmic Rays. *J. C. Higdon & R. E. Lingenfelter.* 590, 822 (2003)

Constraints from *Infrared Space Observatory* Data on the Velocity Law and Clumpiness of WR 136. *R. Ignace, M. F. Quigley, & J. P. Cassinelli.* 596, 538 (2003)

The Unusual 2001 Periastron Passage in the "Clockwork" Colliding-Wind Binary WR 140. *S. V. Marchenko, A. F. J. Moffat, D. Ballereau, J. Chauville, J. Zorec, G. M. Hill, K. Annuk, L. J. Corral, H. Demers, P. R. J. Eenens, K. P. Panov, W. Seggewiss, J. R. Thomson, & A. Villar-Sbaffi.* 596, 1295 (2003)

Radio Constraints on the Starburst Ages of Two Wolf-Rayet Galaxies. *Q. F. Yin, J. H. Huang, & W. Zheng.* 597, 274 (2003)

Hot Gas in the Circumstellar Bubble S308. *You-Hua Chu, Martín A. Guerrero, Robert A. Gruendl, Guillermo García-Segura, & Heinrich J. Wendker.* 599, 1189 (2003)

Radiative Instability in Stellar Envelopes. *Richard B. Stothers.* 599, L103 (2003)

STARS: X-RAYS

The Quiescent Corona of VB 10. *Thomas A. Fleming, Mark S. Giampapa, & David Garza.* 594, 982 (2003)

STELLAR DYNAMICS

To Circularize or Not to Circularize?—Orbital Evolution of Satellite Galaxies. *Yoshikazu Hashimoto, Yoko Funato, & Junichiro Makino.* 582, 196 (2003)

Nonlinear Effects in Models of the Galaxy. I. Midplane Stellar Orbits in the Presence of Three-Dimensional Spiral Arms. *Bárbara Pichardo, Marco Martos, Edmundo Moreno, & Julia Espresate.* 582, 230 (2003)

On the Fate of Close-in Extrasolar Planets. *Ing-Guey Jiang, Wing-Huen Ip, & Li-Chen Yeh.* 582, 449 (2003)

On the Central Structure of M15. *Holger Baumgardt, Piet Hut, Junichiro Makino, Steve McMillan, & Simon Portegies Zwart.* 582, L21 (2003)

The Formation of Nuclear Rings in Barred Spiral Galaxies. *Michael W. Regan & Peter Teuben.* 582, 723 (2003)

Type Ia Supernovae and High-Velocity White Dwarfs. *Brad M. S. Hansen.* 582, 915 (2003)

Axisymmetric Dynamical Models of the Central Regions of Galaxies. *Karl Gebhardt, Douglas Richstone, Scott Tremaine, Tod R. Lauer, Ralf Bender, Gary Bower, Alan Dressler, S. M. Faber, Alexei V. Filippenko, Richard Green, Carl Grillmair, Luis C. Ho, John Kormendy, John Magorrian, & Jason Pinkney.* 583, 92 (2003)

Dynamic Habitability of Known Extrasolar Planetary Systems. *Kristen Menou & Serge Tabachnik.* 583, 473 (2003)

Gravitational Waves from Stars Orbiting the Sagittarius A* Black Hole. *Marc Freitag.* 583, L21 (2003)

High-Resolution Spectroscopy of the Yellow Hypergiant ρ Cassiopeiae from 1993 through the Outburst of 2000–2001. *A. Lobel, A. K. Dupree, R. P. Stefanik, G. Torres, G. Israelian, N. Morrison, C. de Jager, H. Nieuwenhuijzen, I. Ilyin, & F. Musaev.* 583, 923 (2003)

Thermodynamic Description of a Family of Partially Relaxed Stellar Systems. *G. Bertin & M. Trenti.* 584, 729 (2003)

Orbital Decay and Tidal Disruption of a Star Cluster: Analytical Calculation. *Hideaki Mouri & Yoshiaki Taniguchi.* 585, 250 (2003)

Helium-Core White Dwarfs in Globular Clusters. *Brad M. S. Hansen, Vassiliki Kalogera, & Frederic A. Rasio.* 586, 1364 (2003)

The Janus Head of the HD 12661 Planetary System. *Krzysztof Goździewski & Andrzej J. Maciejewski.* 586, L153 (2003)

Bars and Dark Matter Halo Cores. *J. A. Sellwood.* 587, 638 (2003)

A Dynamical Fossil in the Ursa Minor Dwarf Spheroidal Galaxy. *Jan T. Kleyna, Mark I. Wilkinson, Gerard Gilmore, & N. Wyn Evans.* 588, L21 (2003)

White Dwarf Sequences in Dense Star Clusters. *Jarrod R. Hurley & Michael M. Shara.* 589, 179 (2003)

Corotation, Stellar Wandering, and Fine Structure of the Galactic Abundance Pattern. *J. R. D. Lépine, I. A. Acharova, & Yu. N. Mishurov.* 589, 210 (2003)

A Dynamical Model for the Globular Cluster G1. *Holger Baumgardt, Junichiro Makino, Piet Hut, Steve McMillan, & Simon Portegies Zwart.* 589, L25 (2003)

Dynamical Evolution of Galaxies in Clusters. *Oleg Y. Gnedin.* 589, 752 (2003)

Draco: A Failure of the Tidal Model. *Ralf S. Klessen, Eva K. Grebel, & Daniel Harbeck.* 589, 798 (2003)

Orbital In-Spiral into a Massive Black Hole in a Galactic Center. *Tal Alexander & Clovis Hopman.* 590, L29 (2003)

Effects of Wandering on the Coalescence of Black Hole Binaries in Galactic Centers. *Pinaki Chatterjee, Lars Hernquist, & Abraham Loeb.* 592, 32 (2003)

Parametric Dwarf Spheroidal Tidal Interaction. *Jean-Julien Fleck & J. R. Kuhn.* 592, 147 (2003)

The Origin of IRS 16: Dynamically Driven Inspiral of a Dense Star Cluster to the Galactic Center? *Simon F. Portegies Zwart, Stephen L. W. McMillan, & Ortwin Gerhard.* 593, 352 (2003)

Monte Carlo Simulations of Globular Cluster Evolution. III. Primordial Binary Interactions. *J. M. Fregeau, M. A. Gürkan, K. J. Joshi, & F. A. Rasio.* 593, 772 (2003)

Intracluster Stellar Population Properties from *N*-Body Cosmological Simulations. I. Constraints at $z = 0$. *Nicola R. Napolitano, Maurilio Pannella, Magda Arnaboldi, Ortwin Gerhard, J. Alfonso L. Aguerri, Kenneth C. Freeman, Massimo Capaccioli, Sebastiano Ghigna, Fabio Governato, Tom Quinn, & Joachim Stadel.* 594, 172 (2003)

The Tully-Fisher Relation of Barred Galaxies. *Stéphane Courteau, David R. Andersen, Matthew A. Bershady, Lauren A. MacArthur, & Hans-Walter Rix.* 594, 208 (2003)

Where Is the Second Planet in the HD 160691 Planetary System? *Krzysztof Gozdźiewski, Maciej Konacki, & Andrzej J. Maciejewski.* 594, 1019 (2003)

Relaxation of a Collisionless System and the Transition to a New Equilibrium Velocity Distribution. *Thomas E. C. Merrall & Richard N. Henriksen.* 595, 43 (2003)

Does M15 Possess an Intermediate-Mass Black Hole in Its Core? *B. J. McNamara, T. E. Harrison, & J. Anderson.* 595, 187 (2003)

Long-lived Double-barred Galaxies: Critical Mass and Length Scales. *Amr A. El-Zant & Isaac Shlosman.* 595, L41 (2003)

Branch, Spur, and Feather Formation in Spiral Galaxies. *S. Chakrabarti, G. Laughlin, & F. H. Shu.* 596, 220 (2003)

The Fate of Star Clusters near the Galactic Center. I. Analytic Considerations. *Stephen L. W. McMillan & Simon F. Portegies Zwart.* 596, 314 (2003)

Long-Term Evolution of Massive Black Hole Binaries. *Miloš Milosavljević & David Merritt.* 596, 860 (2003)

The New Transiting Planet OGLE-TR-56b: Orbit and Atmosphere. *Dimitar D. Sasselov.* 596, 1327 (2003)

Supermassive Black Hole Binaries as Galactic Blenders. *Henry E. Kandrup, Ioannis V. Sideris, Balša Terzić, & Courtlandt L. Bohn.* 597, 111 (2003)

Dynamical Friction on Star Clusters near the Galactic Center. *Sungsoo S. Kim & Mark Morris.* 597, 312 (2003)

Can High-Velocity Stars Reveal Black Holes in Globular Clusters? *G. A. Drukier & C. D. Bailyn.* 597, L125 (2003)

On the Eccentricity Distribution of Coalescing Black Hole Binaries Driven by the Kozai Mechanism in Globular Clusters. *Linqing Wen.* 598, 419 (2003)

Conditions of Dynamical Stability for the HD 160691 Planetary System. *Eric Bois, Ludmila Kiseleva-Eggleton, Nicolas Rambaux, & Elke Pilat-Lohinger.* 598, 1312 (2003)

Ejection of Hypervelocity Stars by the (Binary) Black Hole in the Galactic Center. *Qingjuan Yu & Scott Tremaine.* 599, 1129 (2003)

SUBMILLIMETER

The Canada–United Kingdom Deep Submillimeter Survey. V. The Submillimeter Properties of Lyman Break Galaxies. *T. M. Webb, S. Eales, S. Foucaud, S. J. Lilly, H. McCracken, K. Adelberger, C. Steidel, A. Shapley, D. L. Clements, L. Dunne, O. Le Fèvre, M. Brodwin, & W. Gear.* 582, 6 (2003)

From Massive Protostars to a Giant H II Region: Submillimeter Imaging of the Galactic Ministarburst W43. *F. Motte, P. Schilke, & D. C. Lis.* 582, 277 (2003)

A Survey of 557 GHz Water Vapor Emission in the NGC 1333 Molecular Cloud. *Edwin A. Bergin, Michael J. Kaufman, Gary J. Melnick, Ronald L. Snell, & John E. Howe.* 582, 830 (2003)

An Obscured Radio Galaxy at High Redshift. *Michiel Reuland, Wil van Breugel, Huub Röttgering, Wim de Vries, Carlos De Breuk, & Daniel Stern.* 582, L71 (2003)

Sunyaev-Zeldovich Effect Imaging of MACS Galaxy Clusters at $z > 0.5$. *Samuel J. LaRoque, Marshall Joy, John E. Carlstrom, Harald Ebeling, Massimiliano Bonamente, Kyle S. Dawson, Alastair Edge, William L. Holzapfel, Amber D. Miller, Daisuke Nagai, Sandeep K. Patel, & Erik D. Reese.* 583, 559 (2003)

The Properties of Microjansky Radio Sources in the Hubble Deep Field–North, SSA 13, and SSA 22 Fields. *S. C. Chapman, A. J. Barger, L. L. Cowie, D. Scott, C. Borys, P. Capak, E. B. Fomalont, G. F. Lewis, E. A. Richards, A. T. Steffen, G. Wilson, & M. Yun.* 585, 57 (2003)

CO $J = 7 \rightarrow 6$ Observations of NGC 253: Cosmic-Ray–heated Warm Molecular Gas. *C. M. Bradford, T. Nikola, G. J. Stacey, A. D. Bolatto, J. M. Jackson, M. L. Savage, J. A. Davidson, & S. J. Higdon.* 586, 891 (2003)

The Canada-UK Deep Submillimeter Survey. VI. The 3 Hour Field. *T. M. Webb, S. A. Eales, S. J. Lilly, D. L. Clements, L. Dunne, W. K. Gear, R. J. Ivison, H. Flores, & M. Yun.* 587, 41 (2003)

A ^{12}CO Map of M82: The Significance of Warm Molecular Gas. *John S. Ward, Jonas Zmuidzinas, Andrew I. Harris, & Kate G. Isaak.* 587, 171 (2003)

The Bivariate Luminosity-Color Distribution of *IRAS* Galaxies and Implications for the High-Redshift Universe. *S. C. Chapman, G. Helou, G. F. Lewis, & D. A. Dale.* 588, 186 (2003)

Photometric Redshift Using the Far-Infrared Spectral Energy Distribution. *T. Wiklind.* 588, 736 (2003)

Distribution of the C I Emission in the ρ Ophiuchi Dark Cloud. *Kazuhisa Kamegai, Masafumi Ikeda, Hiroyuki Maezawa, Tetsuya Ito, Mitsuhiro Iwata, Takeshi Sakai, Tomoharu Oka, Satoshi Yamamoto, Yutaro Sekimoto, Ken'ichi Tatematsu, Takashi Noguchi, Shuji Saito, Hideo Fujiwara, Hiroyuki Ozeki, Junji Inatani, & Masatoshi Ohishi.* 589, 378 (2003)

NGC 7538S—a High-Mass Protostar with a Massive Rotating Disk. *Göran Sandell, Melvyn Wright, & James R. Forster.* 590, L45 (2003)

Submillimeter Wave Astronomy Satellite Mapping Observations of Water Vapor around Sagittarius B2. *David A. Neufeld, Edwin A. Bergin, Gary J. Melnick, & Paul F. Goldsmith.* 590, 882 (2003)

Magnetic Field Evolution in Bok Globules. *Sebastian Wolf, R. Launhardt, & T. Henning.* 592, 233 (2003)

CO (3–2) Observations of Early-Type Galaxies with the Heinrich Hertz Telescope. *B. Vila-Vilaró, J. Cepa, & H. M. Butner.* 594, 232 (2003)

Submillimeter Observations of a Sample of Broad Absorption Line Quasars. *Geraint F. Lewis, S. C. Chapman, & Zdenka Kuncic.* 596, L35 (2003)

Kinetic Sunyaev-Zel'dovich Effect and Cosmic Microwave Background Polarization from Subsonic Bulk Motions of Dense Gas Clouds in Galaxy Cluster Cores. *J. M. Diego, P. Mazzotta, & J. Silk.* 597, L1 (2003)

Laboratory Submillimeter-Wave Detection of D_2H^+: A New Probe into Multiple Deuteration? *T. Hirano & T. Amano.* 597, L85 (2003)

The Canada-UK Deep Submillimeter Survey. VII. Optical and Near-Infrared Identifications for the 14 Hour Field. *T. M. A. Webb, S. J. Lilly, D. L. Clements, S. Eales, M. Yun, M. Brodwin, L. Dunne, & W. K. Gear.* 597, 680 (2003)

The Submillimeter Properties of Broad Absorption Line Quasars. *Chris J. Willot, Steve Rawlings, & Jennifer A. Grimes.* 598, 909 (2003)

Magnetic Fields in Cool Clouds within the Central 50 Parsecs of the Galaxy. *David T. Chuss, Jacqueline A. Davidson, Jessie L. Dotson, C. Darren Dowell, Roger H. Hildebrand, Giles Novak, & John E. Vaillancourt.* 599, 1116 (2003)

SUN: ABUNDANCES

Acceleration and Enrichment of ^{3}He in Impulsive Solar Flares by Electron Firehose Waves. *G. Paesold, R. Kallenbach, & A. O. Benz.* 582, 495 (2003)

Our Sun. IV. The Standard Model and Helioseismology: Consequences of Uncertainties in Input Physics and in Observed Solar Parameters. *Arnold I. Boothroyd & I.-Juliana Sackmann.* 583, 1004 (2003)

Experimental f-Value and Isotopic Structure for the Ni I Line Blended with [O I] at 6300 Å. *S. Johansson, U. Litzén, H. Lundberg, & Z. Zhang.* 584, L107 (2003)

Elemental Abundances for the 1996 Streamer Belt. *M. Uzzo, Y.-K. Ko, J. C. Raymond, P. Wurz, & F. M. Ipavich.* 585, 1062 (2003)

An Explanation for Large Enhancements of Nitrogen Relative to Carbon and Oxygen in Solar ^{3}He-rich Events. *T. X. Zhang & J. X. Wang.* 588, L57 (2003)

Solar Flare Abundances of Potassium, Argon, and Sulphur. *K. J. H. Phillips, J. Sylwester, B. Sylwester, & E. Landi.* 589, L113 (2003)

Non-LTE Model Atmospheres for Late-Type Stars. II. Restricted Non-LTE Calculations for a Solar-like Atmosphere. *Carlos Allende Prieto, Ivan Hubeny, & David L. Lambert.* 591, 1192 (2003)

Solar System Abundances and Condensation Temperatures of the Elements. *Katharina Lodders.* 591, 1220 (2003)

The Variability of the Solar Coronal Helium Abundance: Polar Coronal Holes Compared to the Quiet Sun. *J. Martin Laming & Uri Feldman.* 591, 1257 (2003)

Temporal Evolution of a Streamer Complex: Coronal and in Situ Plasma Parameters. *A. Bemporad, G. Poletto, S. T. Suess, Y.-K. Ko, S. Parenti, P. Riley, M. Romoli, & T. Z. Zurbuchen.* 593, 1146 (2003)

Free-Free Emission in the Far-Ultraviolet Spectral Range: A Resource for Diagnosing Solar and Stellar Flare Plasmas. *U. Feldman, E. Landi, G. A. Doschek, I. Dammasch, & W. Curdt.* 593, 1226 (2003)

Physical Implications of *RHESSI* Neutron-Capture Line Measurements. *R. J. Murphy, G. H. Share, X.-M. Hua, R. P. Lin, D. M. Smith, & R. A. Schwartz.* 595, L93 (2003)

Helium Abundance in the Corona and Solar Wind: Gyrotropic Modeling from the Chromosphere to 1 AU. *Øystein Lie-Svendsen, Viggo H. Hansteen, & Egil Leer.* 596, 621 (2003)

Improved Laboratory Transition Probabilities for Nd II and Application to the Neodymium Abundances of the Sun and Three Metal-Poor Stars. *E. A. Den Hartog, J. E. Lawler, C. Sneden, & J. J. Cowan.* 148, 543 (2003)

SUN: ACTIVITY

Clamshell and Tipping Instabilities in a Two-dimensional Magnetohydrodynamic Tachocline. *Paul S. Cally, Mausumi Dikpati, & Peter A. Gilman.* 582, 1190 (2003)

Does the Energy Supplied to Low-l Solar p-Modes Vary over the Activity Cycle? *W. J. Chaplin, Y. Elsworth, G. R. Isaak, B. A. Miller, R. New, & T. Toutain.* 582, L115 (2003)

The Properties of Small Magnetic Regions on the Solar Surface and the Implications for the Solar Dynamo(s). *Hermance J. Hagenaar, Carolus J. Schrijver, & Alan M. Title.* 584, 1107 (2003)

Polarization of Photospheric Lines from Turbulent Dynamo Simulations. *J. Sánchez Almeida, T. Emonet, & F. Cattaneo.* 585, 536 (2003)

Nonthermal Mass Motions within the High-Temperature Plasmas above a Complex Solar Active Region. *U. Feldman, E. Landi, & W. Curdt.* 585, 1087 (2003)

Hot Spots for Solar Flares Persisting for Decades: Longitude Distributions of Flares of Cycles 19–23. *T. Bai.* 585, 1114 (2003)

Evolution of Conjugate Footpoints inside Flare Ribbons during a Great Two-Ribbon Flare on 2001 April 10. *Ayumi Asai, Takako T. Ishii, Hiroki Kurokawa, Takaaki Yokoyama, & Masumi Shimojo.* 586, 624 (2003)

Chromospheric Evaporation and Warm Rain during a Solar Flare Observed in High Time Resolution with the Coronal Diagnostic Spectrometer aboard the *Solar and Heliospheric Observatory*. *Jeffrey W. Brosius.* 586, 1417 (2003)

Transition Region and Coronal Explorer and Soft X-Ray Telescope Active Region Loop Observations: Comparisons with Static Solutions of the Hydrodynamic Equations. *Amy R. Winebarger, Harry P. Warren, & John T. Mariska.* 587, 439 (2003)

Solar and Heliospheric Observatory/Coronal Diagnostic Spectrograph and Ground-based Observations of a Two-Ribbon Flare: Spatially Resolved Signatures of Chromospheric Evaporation. *L. Teriaca, A. Falchi, G. Cauzzi, R. Falciani, L. A. Smaldone, & V. Andretta.* 588, 596 (2003)

Evidence for a Suprathermal Seed Population of Heavy Ions Accelerated by Interplanetary Shocks near 1 AU. *M. I. Desai, G. M. Mason, J. R. Dwyer, J. E. Mazur, R. E. Gold, S. M. Krimigis, C. W. Smith, & R. M. Skoug.* 588, 1149 (2003)

Comparison of Total Solar Irradiance with NASA/National Solar Observatory Spectromagnetograph Data in Solar Cycles 22 and 23. *Harrison P. Jones, Detrick D. Branston, Patricia B. Jones, & Miruna D. Popescu.* 589, 658 (2003)

Evidence That a Deep Meridional Flow Sets the Sunspot Cycle Period. *David H. Hathaway, Dibyendu Nandy, Robert M. Wilson, & Edwin J. Reichmann.* 589, 665 (2003)

Variation of X-Ray Bright Point Number over the Solar Activity Cycle. *H. Hara & K. Nakakubo-Marimoto.* 589, 1062 (2003)

Constraints on Coronal Mass Ejection Dynamics from Simultaneous Radio and White-Light Observations. *M. J. Reiner, A. Vourlidas, O. C. St. Cyr, J. T. Burkepile, R. A. Howard, M. L. Kaiser, N. P. Prestage, & J.-L. Bougeret.* 590, 533 (2003)

Does the Sun Shrink with Increasing Magnetic Activity? *H. M. Antia.* 590, 567 (2003)

The Contribution of Faculae and Network to Long-Term Changes in the Total Solar Irradiance. *Stephan R. Walton, Dora G. Preminger, & Gary A. Chapman.* 590, 1088 (2003)

Spatial and Temporal Properties of Hot and Cool Coronal Loops. *Shin'ichi Nagata, Hirohisa Hara, Ryouhei Kano, Ken Kobayashi, Taro Sakao, Toshifumi Shimizy, Saku Tsuneta, Tsuyoshi Yoshida, & Joseph B. Gurman.* 590, 1095 (2003)

On the Fluctuating Component of the Sun's Large-Scale Magnetic Field. *Y.-M. Wang & N. R. Sheeley, Jr.* 590, 1111 (2003)

Periodicities in Solar Flare Occurrence: Analysis of Cycles 19–23. *T. Bai.* 591, 406 (2003)

Modeling the Sun's Large-Scale Magnetic Field during the Maunder Minimum. *Y.-M. Wang & N. R. Sheeley, Jr.* 591, 1248 (2003)

Global Parameter and Helioseismic Tests of Solar Variability Models. *L. H. Li, S. Basu, S. Sofia, F. J. Robinson, P. Demarque, & D. B. Guenther.* 591, 1267 (2003)

Metric Radio Observations of the Evolution of a "Halo" Coronal Mass Ejection Close to the Sun. *R. Ramesh, C. Kathiravan, & Ch. V. Sastry.* 591, L163 (2003)

Study of Ribbon Separation of a Flare Associated with a Quiescent Filament Eruption. *Haimin Wang, Jiong Qui, Ju Jing, & Hongqi Zhang.* 593, 564 (2003)

The Magnetic Helicity Budget of Solar Active Regions and Coronal Mass Ejections. *A. Nindos, J. Zhang, & H. Zhang.* 594, 1033 (2003)

Excitation and Damping of Low-Degree Solar p-Modes during Activity Cycle 23: Analysis of GOLF and VIRGO/Sun Photometer Data. *S. J. Jiménez-Reyes, R. A. García, A. Jiménez, & W. J. Chaplin.* 595, 446 (2003)

Toward a Reconnection Model for Solar Flare Statistics. *M. S. Wheatland & I. J. D. Craig.* 595, 458 (2003)

The Evolution of Vector Magnetic Fields in an Emerging Flux Region. *M. Kubo, T. Shimizu, & B. W. Lites.* 595, 465 (2003)

Photospheric Magnetic Field Properties of Flaring versus Flare-quiet Active Regions. I. Data, General Approach, and Sample Results. *K. D. Leka & G. Barnes.* 595, 1277 (2003)

Photospheric Magnetic Field Properties of Flaring versus Flare-Quiet Active Regions. III. Discriminant Analysis. *K. D. Leka & G. Barnes.* 595, 1296 (2003)

Stability Analysis of Tachocline Latitudinal Differential Rotation and Coexisting Toroidal Band Using a Shallow-Water Model. *Mausumi Dikpati, Peter A. Gilman, & Matthias Rempel.* 596, 680 (2003)

Far-Ultraviolet Spectra of Fast Coronal Mass Ejections Associated with X-Class Flares. *J. C. Raymond, A. Ciaravella, D. Dobrzycka, L. Strachan, Y.-K. Ko, & M. Uzzo.* 597, 1106 (2003)

High Spatial Resolution Observations of Pores and the Formation of a Rudimentary Penumbra. *G. Yang, Y. Xu, H. Wang, & C. Denker.* 597, 1190 (2003)

Hα Dimmings Associated with the X1.6 Flare and Halo Coronal Mass Ejection on 2001 October 19. *Yunchun Jiang, Haisheng Ji, Haimin Wang, & Huadong Chen.* 597, L161 (2003)

The Magnetic Connection between the Solar Photosphere and the Corona. *Carolus J. Schrijver & Alan M. Title.* 597, L165 (2003)

Coronal Mass Ejections and Solar Polarity Reversal. *N. Gopalswamy, A. Lara, S. Yashiro, & R. A. Howard.* 598, L63 (2003)

Flare-Related Magnetic Anomaly with a Sign Reversal. *Jiong Qiu & Dale E. Gary.* 599, 615 (2003)

On the Topological Evolution of the Coronal Magnetic Field During the Solar Cycle. *Y. M. Wang & N. R. Sheeley, Jr.* 599, 1404 (2003)

SUN: ATMOSPHERE

Acoustic Wave Propagation in the Sun: Implications for Wave Field and Time-Distance Helioseismology. *C. H. Tong, M. J. Thompson, M. R. Warner, S. P. Rajaguru, & C. C. Pain.* 582, L121 (2003)

CHIANTI—An Atomic Database for Emission Lines. IV. Proton Rates and Other Improvements. *P. R. Young, G. del Zanna, E. Landi, K. P. Dere, H. E. Mason, & M. Landini.* 144, 135 (2003)

Injection of Magnetic Energy and Magnetic Helicity into the Solar Atmosphere by an Emerging Magnetic Flux Tube. *T. Magara & D. W. Longcope.* 586, 630 (2003)

Time-dependent Ionization in Dynamic Solar and Stellar Atmospheres. I. Methods. *W. Rammacher & P. Ulmschneider.* 589, 988 (2003)

Two-dimensional Magnetohydrodynamic Models of the Solar Corona: Mass Loss from the Streamer Belt. *Eirik Endeve, Egil Leer, & Thomas E. Holzer.* 589, 1040 (2003)

SOHO-Ulysses Spring 2000 Quadrature: Coronal Diagnostic Spectrometer and SUMER Results. *S. Parenti, E. Landi, & B. J. I. Bromage.* 590, 519 (2003)

Magnetic Fields in the Quiet Sun: Observational Discrepancies and Unresolved Structure. *H. Socas-Navarro & J. Sánchez Almeida.* 593, 581 (2003)

Helioseismic Signals and Wave Field Helioseismology. *C. H. Tong, M. J. Thompson, M. R. Warner, & C. C. Pain.* 593, 1242 (2003)

The Significance of Density and Attenuation in the Local Helioseismology. *C. H. Tong, M. J. Thompson, M. R. Warner, & C. C. Pain.* 596, L263 (2003)

The Magnetic Connection between the Solar Photosphere and the Corona. *Carolus J. Schrijver & Alan M. Title.* 597, L165 (2003)

SUN: ATMOSPHERIC MOTIONS

Temporal Behavior of the Evershed Effect. *A. A. Georgakilas & E. B. Christopoulou.* 584, 509 (2003)

Formation of a Sporadic Plasma Jet from a Disrupting Magnetic Flux Tube. *J. I. Sakai, K. Nishi, & I. V. Sokolov.* 584, 1095 (2003)

Motions of Isolated G-Band Bright Points in the Solar Photosphere. *P. Nisenson, A. A. van Ballegooijen, A. G. de Wijn, & P. Suetterlin.* 587, 458 (2003)

Solar and Heliospheric Observatory/Coronal Diagnostic Spectrograph and Ground-based Observations of a Two-Ribbon Flare: Spatially Resolved Signatures of Chromospheric Evaporation. *L. Teriaca, A. Falchi, G. Cauzzi, R. Falciani, L. A. Smaldone, & V. Andretta.* 588, 596 (2003)

The Observation of Sunspot Light-Bridge Structure and Dynamics. *T. E. Berger & S. V. Berdyugina.* 589, L117 (2003)

Weak Infrared Molecular Lines Reveal Rapid Outflow in Cool Magnetic Sunspot Penumbral Fibrils. *M. J. Penn, W. D. Cao, S. R. Walton, G. A. Chapman, & W. Livingston.* 590, L119 (2003)

Magnetohydrodynamic Shock Heating of the Solar Corona. *J. A. Orta, M. A. Huerta, & G. C. Boynton.* 596, 646 (2003)

Properties of Magnetic and Velocity Fields in and around Solar Pores. *K. Sankarasubramanian & Thomas Rimmele.* 598, 689 (2003)

Electron Temperature and Speed Measurements in the Low Solar Corona: Results From the 2001 June Eclipse. *Nelson L. Reginald, O. C. St. Cyr, Joseph M. Davila, & Jeffrey W. Brosius.* 599, 596 (2003)

SUN: CHROMOSPHERE

Temporal Behavior of the Evershed Effect. *A. A. Georgakilas & E. B. Christopoulou.* 584, 509 (2003)

Formation of a Sporadic Plasma Jet from a Disrupting Magnetic Flux Tube. *J. I. Sakai, K. Nishi, & I. V. Sokolov.* 584, 1095 (2003)

The Solar Chromosphere/Corona Interface. I. Far-Ultraviolet to Extreme-Ultraviolet Observations and Modeling of Unresolved Coronal Funnels. *Dennis S. Martínez-Galarce, Arthur B. C. Walker II, Troy W. Barbee II, & Richard B. Hoover.* 585, 1095 (2003)

Evolution of Conjugate Footpoints inside Flare Ribbons during a Great Two-Ribbon Flare on 2001 April 10. *Ayumi Asai, Takako T. Ishii, Hiroki Kurokawa, Takaaki Yokoyama, & Masumi Shimojo.* 586, 624 (2003)

Photospheric Sources and Brightening of the Internetwork Chromosphere. *A. C. Cadavid, J. K. Lawrence, T. E. Berger, & A. Ruzmaikin.* 586, 1409 (2003)

Observational Evidence for Mode Coupling in the Chromospheric Network. *R. T. James McAteer, Peter T. Gallagher, David R. Williams, Mihalis*

Mathioudakis, D. Shaun Bloomfield, Kenneth J. H. Phillips, & Francis P. Keenan. 587, 806 (2003)
Nonequilibrium CO Chemistry in the Solar Atmosphere. *A. Asensio Ramos, J. Trujillo Bueno, M. Carlsson, & J. Cernicharo.* 588, L61 (2003)
Correlations on Arcsecond Scales between Chromospheric and Transition Region Emission in Active Regions. *B. De Pontieu, T. Tarbell, & R. Erdélyi.* 590, 502 (2003)
The Contribution of Faculae and Network to Long-Term Changes in the Total Solar Irradiance. *Stephan R. Walton, Dora G. Preminger, & Gary A. Chapman.* 590, 1088 (2003)
Wavelet Analysis of Umbral Oscillations. *E. B. Christopoulou, A. Skodras, A. A. Georgakilas, & S. Koutchmy.* 591, 416 (2003)
Linear Polarization Measurements of Chromospheric Emission Lines. *N. R. Sheeley, Jr., & C. U. Keller.* 594, 1085 (2003)
TRACE and *Yohkoh* Observations of a White-Light Flare. *Thomas R. Metcalf, David Alexander, Hugh S. Hudson, & Dana W. Longcope.* 595, 483 (2003)
Intensity Oscillations in the Upper Transition Region above Active Region Plage. *B. De Pontieu, R. Erdélyi, & A. G. de Wijn.* 595, L63 (2003)
Observations of the Failed Eruption of a Filament. *Haisheng Ji, Haimin Wang, Edward J. Schmahl, Y.-J. Moon, & Yunchun Jiang.* 595, L135 (2003)
Helium Abundance in the Corona and Solar Wind: Gyrotropic Modeling from the Chromosphere to 1 AU. *Øystein Lie-Svendsen, Viggo H. Hansteen, & Egil Leer.* 596, 621 (2003)
Hα Impact Polarization Observed in a Gradual Flare. *Y. Hanaoka.* 596, 1347 (2003)
On the Origin of the Basal Emission from Stellar Atmospheres: Analysis of Solar C II Lines. *Philip G. Judge, Mats Carlsson, & Robert F. Stein.* 597, 1158 (2003)
Influence of Photospheric Magnetic Fields and Dynamics on Chromospheric K-Line Emission. *J. K. Lawrence, A. C. Cadavid, D. Miccolis, T. E. Berger, & A. Ruzmaikin.* 597, 1178 (2003)
Preflare Phenomena in Eruptive Flares. *Angela C. Des Jardins & Richard C. Canfield.* 598, 678 (2003)
Waves in the Magnetized Solar Atmosphere. II. Waves from Localized Sources in Magnetic Flux Concentrations. *T. J. Bogdan, M. Carlsson, V. Hansteen, A. McMurray, C. S. Rosenthal, M. Johnson, S. Petty-Powell, E. J. Zita, R. F. Stein, S. W. McIntosh, & Å. Nordlund.* 599, 626 (2003)

SUN: CORONA

Formation of Minor-Ion Charge States in the Fast Solar Wind: Roles of Differential Flow Speeds of Ions of the Same Element. *Y. Chen, R. Esser, & Y. Hu.* 582, 467 (2003)
A Coupled Model for the Emergence of Active Region Magnetic Flux into the Solar Corona. *W. P. Abbett & G. H. Fisher.* 582, 475 (2003)
A Transient Heating Model for Coronal Structure and Dynamics. *D. Spadaro, A. F. Lanza, A. C. Lanzafame, J. T. Karpen, S. K. Antiochos, J. A. Klimchuk, & P. J. MacNeice.* 582, 486 (2003)
Mass Motions and Plasma Properties in the 10^7 K Flare Solar Corona. *E. Landi, U. Feldman, D. E. Innes, & W. Curdt.* 582, 506 (2003)
Identification of Solar Sources of Major Geomagnetic Storms between 1996 and 2000. *J. Zhang, K. P. Dere, R. A. Howard, & V. Bothmer.* 582, 520 (2003)
On the Extreme-Ultraviolet/Ultraviolet Plasma Diagnostics for Nitrogen-like Ions from Spectra Obtained by *SOHO*/SUMER. *A. Mohan, E. Landi, & B. N. Dwivedi.* 582, 1162 (2003)
Magnetic Pinching of Hyperbolic Flux Tubes. I. Basic Estimations. *V. S. Titov, K. Galsgaard, & T. Neukirch.* 582, 1172 (2003)
A New Method for Estimating Widths, Velocities, and Source Location of Halo Coronal Mass Ejections. *G. Michałek, N. Gopalswamy, & S. Yashiro.* 584, 472 (2003)
Magnetic Flux Emergence into the Solar Corona. III. The Role of Magnetic Helicity Conservation. *M. Zhang & B. C. Low.* 584, 479 (2003)
Periodic Motion along a Solar Filament Initiated by a Subflare. *Ju Jing, Jeongwoo Lee, Thomas J. Spirock, Yan Xu, Haimin Wang, & G. S. Choe.* 584, L103 (2003)
Spectroscopic Studies of the Solar Corona. IV. Physical Properties of Coronal Structure. *Jagdev Singh, Kiyoshi Ichimoto, Takashi Sakurai, & S. Muneer.* 585, 516 (2003)
Elemental Abundances for the 1996 Streamer Belt. *M. Uzzo, Y.-K. Ko, J. C. Raymond, P. Wurz, & F. M. Ipavich.* 585, 1062 (2003)
Nonthermal Mass Motions within the High-Temperature Plasmas above a Complex Solar Active Region. *U. Feldman, E. Landi, & W. Curdt.* 585, 1087 (2003)
The Solar Chromosphere/Corona Interface. I. Far-Ultraviolet to Extreme-Ultraviolet Observations and Modeling of Unresolved Coronal Funnels. *Dennis S. Martínez-Galarce, Arthur B. C. Walker II, Troy W. Barbee II, & Richard B. Hoover.* 585, 1095 (2003)
Prominence Eruptions and Coronal Mass Ejection: A Statistical Study using Microwave Observations. *N. Gopalswamy, M. Shimojo, W. Lu, S. Yashiro, K. Shibasaki, & R. A. Howard.* 586, 562 (2003)
The Long-Term Evolution of AR 7978: The Scalings of the Coronal Plasma Parameters with the Mean Photospheric Magnetic Field. *L. van Driel-Gesztelyi, P. Démoulin, C. H. Mandrini, L. Harra, & J. A. Klimchuk.* 586, 579 (2003)
The Long-Term Evolution of AR 7978: Testing Coronal Heating Models. *P. Démoulin, L. van Driel-Gesztelyi, C. H. Mandrini, J. A. Klimchuk, & L. Harra.* 586, 592 (2003)
Chromospheric Evaporation and Warm Rain during a Solar Flare Observed in High Time Resolution with the Coronal Diagnostic Spectrometer aboard the *Solar and Heliospheric Observatory*. *Jeffrey W. Brosius.* 586, 1417 (2003)
Imaging and Spectroscopic Investigations of a Solar Coronal Wave: Properties of the Wave Front and Associated Erupting Material. *Louise K. Harra & Alphonse C. Sterling.* 587, 429 (2003)
Transition Region and Coronal Explorer and Soft X-Ray Telescope Active Region Loop Observations: Comparisons with Static Solutions of the Hydrodynamic Equations. *Amy R. Winebarger, Harry P. Warren, & John T. Mariska.* 587, 439 (2003)
The Solar Wind and Its Magnetic Sources at Sunspot Maximum. *Y.-M. Wang & N. R. Sheeley, Jr.* 587, 818 (2003)
Experimental Transition Rate of the Green Coronal Line of Fe XIV. *P. Beiersdorfer, E. Träbert, & E. H. Pinnington.* 587, 836 (2003)
The Nascent Solar Wind: Origin and Acceleration. *Luca Teriaca, Giannina Poletto, Marco Romoli, & Doug A. Biesecker.* 588, 566 (2003)
Models of Three-dimensional Flux Ropes. *Joachim Birn, Terry G. Forbes, & Karl Schindler.* 588, 578 (2003)
A Three-dimensional Flux Rope Model for Coronal Mass Ejections Based on a Loss of Equilibrium. *Ilia I. Roussev, Terry G. Forbes, Tamas I. Gombosi, Igor V. Sokolov, Darren L. DeZeeuw, & Joachim Birn.* 588, L45 (2003)
A New Method to Constrain the Iron Abundance from Cooling Delays in Coronal Loops. *Markus J. Aschwanden, Carolus J. Schrijver, Amy R. Winebarger, & Harry P. Warren.* 588, L49 (2003)
Rapid Acceleration of a Coronal Mass Ejection in the Low Corona and Implications for Propagation. *Peter T. Gallagher, Gareth R. Lawrence, & Brian R. Dennis.* 588, L53 (2003)
Quasi-periodic Pulsations in a Solar Microwave Burst. *V. V. Grechnev, S. M. White, & M. R. Kundu.* 588, 1163 (2003)
Sympathetic Coronal Mass Ejections. *Y.-J. Moon, G. S. Choe, Haimin Wang, & Y. D. Park.* 588, 1176 (2003)
The Contribution of Polar Plumes to the Fast Solar Wind. *A. H. Gabriel, F. Bely-Dubau, & P. Lemaire.* 589, 623 (2003)
A Morphological Study of Helical Coronal Magnetic Structures. *B. C. Low & M. A. Berger.* 589, 644 (2003)
Two-dimensional Magnetohydrodynamic Models of the Solar Corona: Mass Loss from the Streamer Belt. *Eirik Endeve, Egil Leer, & Thomas E. Holzer.* 589, 1040 (2003)
Solving the Descrepancy between the Extreme-Ultraviolet and Microwave Observations of the Quiet Sun. *E. Landi & F. Chiuderi Drago.* 589, 1054 (2003)
Variation of X-Ray Bright Point Number over the Solar Activity Cycle. *H. Hara & K. Nakakubo-Marimoto.* 589, 1062 (2003)
The Emergence of a Twisted Magnetic Flux Tube into a Preexisting Coronal Arcade. *Y. Fan & S. E. Gibson.* 589, L105 (2003)
Solar Flare Abundances of Potassium, Argon, and Sulphur. *K. J. H. Phillips, J. Sylwester, B. Sylwester, & E. Landi.* 589, L113 (2003)
SOHO-Ulysses Spring 2000 Quadrature: Coronal Diagnostic Spectrometer and SUMER Results. *S. Parenti, E. Landi, & B. J. I. Bromage.* 590, 519 (2003)
Constraints on Coronal Mass Ejection Dynamics from Simultaneous Radio and White-Light Observations. *M. J. Reiner, A. Vourlidas, O. C. St. Cyr, J. T. Burkepile, R. A. Howard, M. L. Kaiser, N. P. Prestage, & J.-L. Bougeret.* 590, 533 (2003)
Constraints on Active Region Coronal Heating. *S. K. Antiochos, J. T. Karpen, E. E. DeLuca, L. Golub, & P. Hamilton.* 590, 547 (2003)
Spatial and Temporal Properties of Hot and Cool Coronal Loops. *Shin'ichi Nagata, Hirohisa Hara, Ryouhei Kano, Ken Kobayashi, Taro Sakao,*

Toshifumi Shimizy, Saku Tsuneta, Tsuyoshi Yoshida, & Joseph B. Gurman. 590, 1095 (2003)

On the Fluctuating Component of the Sun's Large-Scale Magnetic Field. *Y.-M. Wang & N. R. Sheeley, Jr.* 590, 1111 (2003)

Modeling the Sun's Large-Scale Magnetic Field during the Maunder Minimum. *Y.-M. Wang & N. R. Sheeley, Jr.* 591, 1248 (2003)

The Variability of the Solar Coronal Helium Abundance: Polar Coronal Holes Compared to the Quiet Sun. *J. Martin Laming & Uri Feldman.* 591, 1257 (2003)

Metric Radio Observations of the Evolution of a "Halo" Coronal Mass Ejection Close to the Sun. *R. Ramesh, C. Kathiravan, & Ch. V. Sastry.* 591, L163 (2003)

Properties of Solar Plasmas near Solar Maximum above Two Quiet Regions at Distances of 1.02–1.34 $R_\odot$. *E. Landi & U. Feldman.* 592, 607 (2003)

On the Detection of the Signature of Silicon Nanoparticle Dust Grains in Coronal Holes. *Shadia Rifai Habbal, Martina Belz Arndt, Munir H. Nayfeh, Jean Arnaud, Judd Johnson, Steve Hegwer, Richard Woo, Alexandru Ene, & Feras Habbal.* 592, L87 (2003)

An Estimate of the Sun's *ROSAT*-PSPC X-Ray Luminosities Using *SNOE*-SXP Measurements. *Philip G. Judge, Stanley C. Solomon, & Thomas R. Ayres.* 593, 534 (2003)

Solar Coronal Heating and the Magnetic Flux Content of the Network. *D. A. Falconer, R. L. Moore, J. G. Porter, & D. H. Hathaway.* 593, 549 (2003)

Generation of Suprathermal Electrons by Resonant Wave-Particle Interaction in the Solar Corona and Wind. *C. Vocks & G. Mann.* 593, 1134 (2003)

Temporal Evolution of a Streamer Complex: Coronal and in Situ Plasma Parameters. *A. Bemporad, G. Poletto, S. T. Suess, Y.-K. Ko, S. Parenti, P. Riley, M. Romoli, & T. Z. Zurbuchen.* 593, 1146 (2003)

Evolving Active Region Loops Observed With the *Transition Region and Coronal Explorer*. I. Observations. *Amy R. Winebarger, Harry P. Warren, & Daniel B. Seaton.* 593, 1164 (2003)

Evolving Active Region Loops Observed with the *Transition Region and Coronal Explorer*. II. Time-Dependent Hydrodynamic Simulations. *Harry P. Warren, Amy R. Winebarger, & John T. Mariska.* 593, 1174 (2003)

Constraints on the Magnetic Field Geometry in Prominences. *J. T. Karpen, S. K. Antiochos, J. A. Klimchuk, & P. J. MacNeice.* 593, 1187 (2003)

Role of Magnetic Flux Distribution in Coronal Energy Storage. *Richard Wolfson.* 593, 1208 (2003)

Helicity Evolution in Emerging Active Regions. *Alexei A. Pevtsov, Vasily M. Maleev, & Dana W. Longcope.* 593, 1217 (2003)

Magnetohydrodynamic Numerical Simulations of Solar X-Ray Jets Based on the Magnetic Reconnection Model That Includes Chromospheric Evaporation. *Takehiro Miyagoshi & Takaaki Yokoyama.* 593, L133 (2003)

From the Heart of the Ghoul: C and N Abundances in the Corona of Algol B. *Jeremy J. Drake.* 594, 496 (2003)

Alfvénic Turbulence in the Extended Solar Corona: Kinetic Effects and Proton Heating. *S. R. Cranmer & A. A. van Ballegooijen.* 594, 573 (2003)

The Magnetic Helicity Budget of Solar Active Regions and Coronal Mass Ejections. *A. Nindos, J. Zhang, & H. Zhang.* 594, 1033 (2003)

Interactions of Dust Grains with Coronal Mass Ejections and Solar Cycle Variations of the F-Coronal Brightness. *B. R. Ragot & S. W. Kahler.* 594, 1049 (2003)

The Mass of a Solar Quiescent Prominence. *B. C. Low, B. Fong, & Y. Fan.* 594, 1060 (2003)

Dynamical and Physical Properties of a Post–Coronal Mass Ejection Current Sheet. *Yuan-Kuen Ko, John C. Raymond, Jun Lin, Gareth Lawrence, Jing Li, & Andrzej Fludra.* 594, 1068 (2003)

Toward a Reconnection Model for Solar Flare Statistics. *M. S. Wheatland & I. J. D. Craig.* 595, 458 (2003)

The Evolution of Vector Magnetic Fields in an Emerging Flux Region. *M. Kubo, T. Shimizu, & B. W. Lites.* 595, 465 (2003)

New Identifications of Mn VII and Fe VIII Lines Belonging to Transitions of the Type $3p^6 4p$–$3p^6 4d$ and $3p^5 3d^2$–$3p^6 4d$. *J. O. Ekberg & U. Feldman.* 595, 517 (2003)

The Dynamical Morphologies of Flares Associated with the Two Types of Solar Coronal Mass Ejections. *Mei Zhang & Leon Golub.* 595, 1251 (2003)

Radio and Hard X-Ray Images of High-Energy Electrons in an X-Class Solar Flare. *S. M. White, S. Krucker, K. Shibasaki, T. Yokoyama, M. Shimojo, & M. R. Kundu.* 595, L111 (2003)

Observations of the Failed Eruption of a Filament. *Haisheng Ji, Haimin Wang, Edward J. Schmahl, Y.-J. Moon, & Yunchun Jiang.* 595, L135 (2003)

Helium Abundance in the Corona and Solar Wind: Gyrotropic Modeling from the Chromosphere to 1 AU. *Øystein Lie-Svendsen, Viggo H. Hansteen, & Egil Leer.* 596, 621 (2003)

Magnetohydrodynamic Shock Heating of the Solar Corona. *J. A. Orta, M. A. Huerta, & G. C. Boynton.* 596, 646 (2003)

Coronal Plume Heating and Kinetic Dissipation of Kinetic Alfvén Waves. *D. J. Wu & C. Fang.* 596, 656 (2003)

Density and Temperature Measurements in a Solar Active Region. *Harry P. Warren & Amy R. Winebarger.* 596, L113 (2003)

What Is the Role of the Kink Instability in Solar Coronal Eruptions? *Robert J. Leamon, Richard C. Canfield, Zachary Blehm, & Alexei A. Pevtsov.* 596, L255 (2003)

Preferential Heating of Particles by H-Cyclotron Waves Generated by a Global Magnetohydrodynamic Mode in Solar Coronal Holes. *T. X. Zhang.* 597, L69 (2003)

Detection of a Taylor-like Plasma Relaxation Process in the Sun. *Dibyendu Nandy, Michael Hahn, Richard C. Canfield, & Dana W. Longcope.* 597, L73 (2003)

Low-Frequency Waves and Turbulence in an Open Magnetic Region: Timescales and Heating Efficiency. *Pablo Dmitruk & William H. Matthaeus.* 597, 1097 (2003)

Far-Ultraviolet Spectra of Fast Coronal Mass Ejections Associated with X-Class Flares. *J. C. Raymond, A. Ciaravella, D. Dobrzycka, L. Strachan, Y.-K. Ko, & M. Uzzo.* 597, 1106 (2003)

Physical Parameters of the 2000 February 11 Coronal Mass Ejection: Ultraviolet Spectra versus White-Light Images. *A. Ciaravella, J. C. Raymond, A. van Ballegooijen, L. Strachan, A. Vourlidas, J. Li, J. Chen, & A. Panasyuk.* 597, 1118 (2003)

Empirically Determined Anisotropic Velocity Distributions and Outflows of O^{5+} Ions in a Coronal Streamer at Solar Minimum. *R. A. Frazin, S. R. Cranmer, & J. L. Kohl.* 597, 1145 (2003)

Test for Alfvén Wave Signatures in a Solar Coronal Hole. *Thomas G. Moran.* 598, 657 (2003)

Binary Reconnection and the Heating of the Solar Corona. *E. R. Priest, D. W. Longcope, & V. S. Titov.* 598, 667 (2003)

Preflare Phenomena in Eruptive Flares. *Angela C. Des Jardins & Richard C. Canfield.* 598, 678 (2003)

Evidence of Flaring in a Transequatorial Loop on the Sun. *Louise K. Harra, Sarah A. Matthews, & Lidia van Driel-Gesztelyi.* 598, L59 (2003)

The Effect of Proton Temperature Anisotropy on the Solar Minimum Corona and Wind. *Alberto M. Vásquez, Adrian A. van Ballegooijen, & John C. Raymond.* 598, 1361 (2003)

Observational Tests of Damping by Resonant Absorption in Coronal Loop Oscillations. *Markus J. Aschwanden, Richard W. Nightingale, Jesse Andries, Marcel Goossens, & Tom Van Doorsselaere.* 598, 1375 (2003)

The Relationship Between X-Ray Radiance and Magnetic Flux. *Alexei A. Pevtsov, George H. Fisher, Loren W. Acton, Dana W. Longcope, Christopher M. Johns-Krull, Charles C. Kankelborg, & Thomas R. Metcalf.* 598, 1387 (2003)

Direct Detection of a Coronal Mass Ejection–Associated Shock in Large Angle and Spectrometric Coronagraph Experiment White-Light Images. *A. Vourlidas, S. T. Wu, A. H. Wang, P. Subramanian, & R. A. Howard.* 598, 1392 (2003)

Coronal Loops Heated by Turbulence-driven Alfvén Waves. *Xing Li & Shadia Rifai Habbal.* 598, L125 (2003)

Electron Temperature and Speed Measurements in the Low Solar Corona: Results From the 2001 June Eclipse. *Nelson L. Reginald, O. C. St. Cyr, Joseph M. Davila, & Jeffrey W. Brosius.* 599, 596 (2003)

The Effect of Background Subtraction on the Temperature of EIT Coronal Loops. *J. T. Schmelz, J. E. Beene, K. Nasraoui, H. T. Blevins, P. C. H. Martens, & J. W. Cirtain.* 599, 604 (2003)

Solar Wind Scaling Law. *N. A. Schwadron & D. J. McComas.* 599, 1395 (2003)

On the Topological Evolution of the Coronal Magnetic Field During the Solar Cycle. *Y. M. Wang & N. R. Sheeley, Jr.* 599, 1404 (2003)

Tether-cutting Energetics of a Solar Quiet-Region Prominence Eruption. *Alphonse C. Sterling & Ronald L. Moore.* 599, 1418 (2003)

SUN: CORONAL MASS EJECTIONS (CMES)

Identification of Solar Sources of Major Geomagnetic Storms between 1996 and 2000. *J. Zhang, K. P. Dere, R. A. Howard, & V. Bothmer.* 582, 520 (2003)

A New Method for Estimating Widths, Velocities, and Source Location of Halo Coronal Mass Ejections. *G. Michałek, N. Gopalswamy, & S. Yashiro.* 584, 472 (2003)

Solar Energetic Particle Production by Coronal Mass Ejection–driven Shocks in Solar Fast-Wind Regions. *S. W. Kahler & D. V. Reames.* 584, 1063 (2003)

Doubly Helical Coronal Ejections from Dynamos and Their Role in Sustaining the Solar Cycle. *Eric G. Blackman & Axel Brandenburg.* 584, L99 (2003)

Coronal Mass Ejection: Initiation, Magnetic Helicity, and Flux Ropes. I. Boundary Motion–driven Evolution. *T. Amari, J. F. Luciani, J. J. Aly, Z. Mikic, & J. Linker.* 585, 1073 (2003)

Prominence Eruptions and Coronal Mass Ejection: A Statistical Study using Microwave Observations. *N. Gopalswamy, M. Shimojo, W. Lu, S. Yashiro, K. Shibasaki, & R. A. Howard.* 586, 562 (2003)

Low Coronal Signatures of Large Solar Energetic Particle Events. *Nariaki V. Nitta, Edward W. Cliver, & Allan J. Tylka.* 586, L103 (2003)

The Origin of High-Energy ^{3}He-rich Solar Particle Events. *L. Kocharov & J. Torsti.* 586, 1430 (2003)

Imaging and Spectroscopic Investigations of a Solar Coronal Wave: Properties of the Wave Front and Associated Erupting Material. *Louise K. Harra & Alphonse C. Sterling.* 587, 429 (2003)

Models of Three-dimensional Flux Ropes. *Joachim Birn, Terry G. Forbes, & Karl Schindler.* 588, 578 (2003)

Ultraviolet Spectroscopy of Narrow Coronal Mass Ejections. *D. Dobrzycka, J. C. Raymond, D. A. Biesecker, J. Li, & A. Ciaravella.* 588, 586 (2003)

A Three-dimensional Flux Rope Model for Coronal Mass Ejections Based on a Loss of Equilibrium. *Ilia I. Roussev, Terry G. Forbes, Tamas I. Gombosi, Igor V. Sokolov, Darren L. DeZeeuw, & Joachim Birn.* 588, L45 (2003)

Rapid Acceleration of a Coronal Mass Ejection in the Low Corona and Implicatuons for Propagation. *Peter T. Gallagher, Gareth R. Lawrence, & Brian R. Dennis.* 588, L53 (2003)

Sympathetic Coronal Mass Ejections. *Y.-J. Moon, G. S. Choe, Haimin Wang, & Y. D. Park.* 588, 1176 (2003)

A Morphological Study of Helical Coronal Magnetic Structures. *B. C. Low & M. A. Berger.* 589, 644 (2003)

Coronal Mass Ejections, the Tail of the Solar Wind Magnetic Field Distribution, and 11 Year Cosmic-Ray Modulation at 1 AU. *E. W. Cliver, A. G. Ling, & I. G. Richardson.* 592, 574 (2003)

Coronal Structure of a Flaring Region and Associated Coronal Mass Ejection. *P. K. Manoharan & M. R. Kundu.* 592, 597 (2003)

Study of Ribbon Separation of a Flare Associated with a Quiescent Filament Eruption. *Haimin Wang, Jiong Qui, Ju Jing, & Hongqi Zhang.* 593, 564 (2003)

Role of Magnetic Flux Distribution in Coronal Energy Storage. *Richard Wolfson.* 593, 1208 (2003)

Observational Evidence of a Magnetic Flux Rope Eruption Associated with the X3 Flare on 2002 July 15. *Yu Liu, Yunchun Jiang, Haishen Ji, Hongqi Zhang, & Haimin Wang.* 593, L137 (2003)

The Magnetic Helicity Budget of Solar Active Regions and Coronal Mass Ejections. *A. Nindos, J. Zhang, & H. Zhang.* 594, 1033 (2003)

Interactions of Dust Grains with Coronal Mass Ejections and Solar Cycle Variations of the F-Coronal Brightness. *B. R. Ragot & S. W. Kahler.* 594, 1049 (2003)

The Mass of a Solar Quiescent Prominence. *B. C. Low, B. Fong, & Y. Fan.* 594, 1060 (2003)

Dynamical and Physical Properties of a Post–Coronal Mass Ejection Current Sheet. *Yuan-Kuen Ko, John C. Raymond, Jun Lin, Gareth Lawrence, Jing Li, & Andrzej Fludra.* 594, 1068 (2003)

Coronal Mass Ejection: Initiation, Magnetic Helicity, and Flux Ropes. II. Turbulent Diffusion–driven Evolution. *T. Amari, J. F. Luciani, J. J. Aly, Z. Mikic, & J. Linker.* 595, 1231 (2003)

The Dynamical Morphologies of Flares Associated with the Two Types of Solar Coronal Mass Ejections. *Mei Zhang & Leon Golub.* 595, 1251 (2003)

Flux Rope Acceleration and Enhanced Magnetic Reconnection Rate. *C. Z. Cheng, Y. Ren, G. S. Choe, & Y.-J. Moon.* 596, 1341 (2003)

What Is the Role of the Kink Instability in Solar Coronal Eruptions? *Robert J. Leamon, Richard C. Canfield, Zachary Blehm, & Alexei A. Pevtsov.* 596, L255 (2003)

Far-Ultraviolet Spectra of Fast Coronal Mass Ejections Associated with X-Class Flares. *J. C. Raymond, A. Ciaravella, D. Dobrzycka, L. Strachan, Y.-K. Ko, & M. Uzzo.* 597, 1106 (2003)

Physical Parameters of the 2000 February 11 Coronal Mass Ejection: Ultraviolet Spectra versus White-Light Images. *A. Ciaravella, J. C. Raymond, A. van Ballegooijen, L. Strachan, A. Vourlidas, J. Li, J. Chen, & A. Panasyuk.* 597, 1118 (2003)

Hα Dimmings Associated with the X1.6 Flare and Halo Coronal Mass Ejection on 2001 October 19. *Yunchun Jiang, Haisheng Ji, Haimin Wang, & Huadong Chen.* 597, L161 (2003)

Evidence of Flaring in a Transequatorial Loop on the Sun. *Louise K. Harra, Sarah A. Matthews, & Lidia van Driel-Gesztelyi.* 598, L59 (2003)

Coronal Mass Ejections and Solar Polarity Reversal. *N. Gopalswamy, A. Lara, S. Yashiro, & R. A. Howard.* 598, L63 (2003)

Direct Detection of a Coronal Mass Ejection–Associated Shock in Large Angle and Spectrometric Coronagraph Experiment White-Light Images. *A. Vourlidas, S. T. Wu, A. H. Wang, P. Subramanian, & R. A. Howard.* 598, 1392 (2003)

On the Topological Evolution of the Coronal Magnetic Field During the Solar Cycle. *Y. M. Wang & N. R. Sheeley, Jr.* 599, 1404 (2003)

SUN: EVOLUTION

Our Sun. V. A Bright Young Sun Consistent with Helioseismology and Warm Temperatures on Ancient Earth and Mars. *I.-Juliana Sackmann & Arnold I. Boothroyd.* 583, 1024 (2003)

A Three-dimensional Model of the Solar Wind Incorporating Solar Magnetogram Observations. *I. I. Roussev, T. I. Gombosi, I. V. Sokolov, M. Velli, W. Manchester IV, D. L. DeZeeuw, P. Liewer, G. Tóth, & J. Luhmann.* 595, L57 (2003)

Helium in Lunar Samples Analyzed by High-Resolution Stepwise Etching: Implications for the Temporal Constancy of Solar Wind Isotopic Composition. *Veronika S. Heber, Heinrich Baur, & Rainer Wieler.* 597, 602 (2003)

SUN: FACULAE, PLAGES

Motions of Isolated *G*-Band Bright Points in the Solar Photosphere. *P. Nisenson, A. A. van Ballegooijen, A. G. de Wijn, & P. Suetterlin.* 587, 458 (2003)

The Contribution of Faculae and Network to Long-Term Changes in the Total Solar Irradiance. *Stephan R. Walton, Dora G. Preminger, & Gary A. Chapman.* 590, 1088 (2003)

SUN: FILAMENTS

The Formation of a Prominence in NOAA Active Region 8668. II. *Trace* Observations of Jets and Eruptions Associated with Canceling Magnetic Features. *Jongchul Chae.* 584, 1084 (2003)

Periodic Motion along a Solar Filament Initiated by a Subflare. *Ju Jing, Jeongwoo Lee, Thomas J. Spirock, Yan Xu, Haimin Wang, & G. S. Choe.* 584, L103 (2003)

Prominence Eruptions and Coronal Mass Ejection: A Statistical Study using Microwave Observations. *N. Gopalswamy, M. Shimojo, W. Lu, S. Yashiro, K. Shibasaki, & R. A. Howard.* 586, 562 (2003)

Study of Ribbon Separation of a Flare Associated with a Quiescent Filament Eruption. *Haimin Wang, Jiong Qui, Ju Jing, & Hongqi Zhang.* 593, 564 (2003)

Chirality of Chromospheric Filaments. *Alexei A. Pevtsov, K. S. Balasubramaniam, & Joey W. Rogers.* 595, 500 (2003)

Hα Dimmings Associated with the X1.6 Flare and Halo Coronal Mass Ejection on 2001 October 19. *Yunchun Jiang, Haisheng Ji, Haimin Wang, & Huadong Chen.* 597, L161 (2003)

Hα and Hard X-Ray Observations of a Two-Ribbon Flare Associated with a Filament Eruption. *M. D. Ding, Q. R. Chen, J. P. Li, & P. F. Chen.* 598, 683 (2003)

SUN: FLARES

Acceleration and Enrichment of ^{3}He in Impulsive Solar Flares by Electron Firehose Waves. *G. Paesold, R. Kallenbach, & A. O. Benz.* 582, 495 (2003)

Mass Motions and Plasma Properties in the 10^7 K Flare Solar Corona. *E. Landi, U. Feldman, D. E. Innes, & W. Curdt.* 582, 506 (2003)

Identification of Solar Sources of Major Geomagnetic Storms between 1996 and 2000. *J. Zhang, K. P. Dere, R. A. Howard, & V. Bothmer.* 582, 520 (2003)

Magnetic Pinching of Hyperbolic Flux Tubes. I. Basic Estimations. *V. S. Titov, K. Galsgaard, & T. Neukirch.* 582, 1172 (2003)

Electron Acceleration by Lower Hybrid Turbulence in Solar Flares. *Q. Y. Luo, F. S. Wei, & X. S. Feng.* 584, 497 (2003)

Optically Thick Gyrosynchrotron Emission from Anisotropic Electron Distributions. *G. D. Fleishman & V. F. Melnikov.* 584, 1071 (2003)

Formation of a Sporadic Plasma Jet from a Disrupting Magnetic Flux Tube. *J. I. Sakai, K. Nishi, & I. V. Sokolov.* 584, 1095 (2003)

Hα, Extreme-Ultraviolet, and Microwave Observations of the 2000 March 22 Solar Flare and Spontaneous Magnetic Reconnection. *Jeongwoo Lee, Peter T. Gallagher, Dale E. Gary, Gelu M. Nita, G. S. Choe, Su-Chan Bong, & Hong Sik Yun.* 585, 524 (2003)

Coronal Mass Ejection: Initiation, Magnetic Helicity, and Flux Ropes. I. Boundary Motion–driven Evolution. *T. Amari, J. F. Luciani, J. J. Aly, Z. Mikic, & J. Linker.* 585, 1073 (2003)

Hot Spots for Solar Flares Persisting for Decades: Longitude Distributions of Flares of Cycles 19–23. *T. Bai.* 585, 1114 (2003)

The Effects of Low- and High-Energy Cutoffs on Solar Flare Microwave and Hard X-Ray Spectra. *Gordon D. Holman.* 586, 606 (2003)

Cause of Proton Depletion in Solar Impulsive Particle Events. *K. Ohki.* 586, 617 (2003)

Evolution of Conjugate Footpoints inside Flare Ribbons during a Great Two-Ribbon Flare on 2001 April 10. *Ayumi Asai, Takako T. Ishii, Hiroki Kurokawa, Takaaki Yokoyama, & Masumi Shimojo.* 586, 624 (2003)

Low Coronal Signatures of Large Solar Energetic Particle Events. *Nariaki V. Nitta, Edward W. Cliver, & Allan J. Tylka.* 586, L103 (2003)

Chromospheric Evaporation and Warm Rain during a Solar Flare Observed in High Time Resolution with the Coronal Diagnostic Spectrometer aboard the *Solar and Heliospheric Observatory*. *Jeffrey W. Brosius.* 586, 1417 (2003)

Petschek-like Reconnection with Current-driven Anomalous Resistivity and Its Application to Solar Flares. *Dmitri A. Uzdensky.* 587, 450 (2003)

Gyrosynchrotron Emission from Anisotropic Electron Distributions. *G. D. Fleishman & V. F. Melnikov.* 587, 823 (2003)

Observation of GeV Solar Energetic Particles from the 1997 November 6 Event Using Milagrito. *A. Falcone, R. Atkins, W. Benbow, D. Berley, M. L. Chen, D. G. Coyne, B. L. Dingus, D. E. Dorfan, R. W. Ellsworth, L. Fleysher, R. Fleysher, G. Gisler, J. A. Goodman, T. J. Haines, C. M. Hoffman, S. Hugenberger, L. A. Kelley, I. Leonor, J. F. McCullough, J. E. McEnery, R. S. Miller, A. I. Mincer, M. F. Morales, P. Nemethy, J. M. Ryan, B. Shen, A. Shoup, G. Sinnis, A. J. Smith, G. W. Sullivan, T. Tumer, K. Wang, M. O. Wascko, S. Westerhoff, D. A. Williams, T. Yang, & G. B. Yodh.* 588, 557 (2003)

Solar and Heliospheric Observatory/Coronal Diagnostic Spectrograph and Ground-based Observations of a Two-Ribbon Flare: Spatially Resolved Signatures of Chromospheric Evaporation. *L. Teriaca, A. Falchi, G. Cauzzi, R. Falciani, L. A. Smaldone, & V. Andretta.* 588, 596 (2003)

A Three-dimensional Flux Rope Model for Coronal Mass Ejections Based on a Loss of Equilibrium. *Ilia I. Roussev, Terry G. Forbes, Tamas I. Gombosi, Igor V. Sokolov, Darren L. DeZeeuw, & Joachim Birn.* 588, L45 (2003)

Rapid Acceleration of a Coronal Mass Ejection in the Low Corona and Implications for Propagation. *Peter T. Gallagher, Gareth R. Lawrence, & Brian R. Dennis.* 588, L53 (2003)

An Explanation for Large Enhancements of Nitrogen Relative to Carbon and Oxygen in Solar ^{3}He-rich Events. *T. X. Zhang & J. X. Wang.* 588, L57 (2003)

Quasi-periodic Pulsations in a Solar Microwave Burst. *V. V. Grechnev, S. M. White, & M. R. Kundu.* 588, 1163 (2003)

A Morphological Study of Helical Coronal Magnetic Structures. *B. C. Low & M. A. Berger.* 589, 644 (2003)

Solar Particle Transport in a Dynamical Quasi-linear Theory. *Wolfgang Dröge.* 589, 1027 (2003)

Detection of Photospheric Impacts from Chromospheric Impulsive Events. *P. F. Moretti, F. Berrilli, A. Sebastianelli, C. Briand, & E. Pietropaolo.* 589, L109 (2003)

Solar Flare Abundances of Potassium, Argon, and Sulphur. *K. J. H. Phillips, J. Sylwester, B. Sylwester, & E. Landi.* 589, L113 (2003)

Constraints on Coronal Mass Ejection Dynamics from Simultaneous Radio and White-Light Observations. *M. J. Reiner, A. Vourlidas, O. C. St. Cyr, J. T. Burkepile, R. A. Howard, M. L. Kaiser, N. P. Prestage, & J.-L. Bougeret.* 590, 533 (2003)

Fast Magnetic Reconnection via Jets and Current Microsheets. *P. G. Watson & I. J. D. Craig.* 590, L57 (2003)

Periodicities in Solar Flare Occurrence: Analysis of Cycles 19–23. *T. Bai.* 591, 406 (2003)

Properties of Fast Submillimeter Time Structures during a Large Solar Flare. *Jean-Pierre Raulin, Pierre Kaufmann, Carlos G. Giménez de Castro, Alessandra A. Pacini, Vladimir S. Makhmutov, Hugo Levato, & Marta Rovira.* 592, 580 (2003)

Solar Neutron Event in Association with a Large Solar Flare on 2000 November 24. *K. Watanabe, Y. Muraki, Y. Matsubara, K. Murakami, T. Sako, H. Tsuchiya, S. Masuda, M. Yoshimori, N. Ohmori, P. Miranda, N. Martinic, R. Ticona, A. Velarde, F. Kakimoto, S. Ogio, Y. Tsunesada, H. Tokuno, & Y. Shirasaki.* 592, 590 (2003)

Coronal Structure of a Flaring Region and Associated Coronal Mass Ejection. *P. K. Manoharan & M. R. Kundu.* 592, 597 (2003)

The Effect of the Compton Backscattering Component on the Photon Spectra of Three *Yohkoh*/Hard X-Ray Telescope Flares. *Jian Zhang & Guang Li Huang.* 592, L49 (2003)

Study of Ribbon Separation of a Flare Associated with a Quiescent Filament Eruption. *Haimin Wang, Jiong Qui, Ju Jing, & Hongqi Zhang.* 593, 564 (2003)

Decimetric Spike Bursts versus Microwave Continuum. *Gregory D. Fleishman, Dale E. Gary, & Gelu M. Nita.* 593, 571 (2003)

Free-Free Emission in the Far-Ultraviolet Spectral Range: A Resource for Diagnosing Solar and Stellar Flare Plasmas. *U. Feldman, E. Landi, G. A. Doschek, I. Dammasch, & W. Curdt.* 593, 1226 (2003)

Magnetohydrodynamic Numerical Simulations of Solar X-Ray Jets Based on the Magnetic Reconnection Model That Includes Chromospheric Evaporation. *Takehiro Miyagoshi & Takaaki Yokoyama.* 593, L133 (2003)

Observational Evidence of a Magnetic Flux Rope Eruption Associated with the X3 Flare on 2002 July 15. *Yu Liu, Yunchun Jiang, Haishen Ji, Hongqi Zhang, & Haimin Wang.* 593, L137 (2003)

Elemental Fractionation in Small Solar Energetic Particle Events. *P. L. Slocum, E. C. Stone, R. A. Leske, E. R. Christian, C. M. S. Cohen, A. C. Cummings, M. I. Desai, J. R. Dwyer, G. M. Mason, J. E. Mazur, R. A. Mewaldt, T. T. von Rosenvinge, & M. E. Wiedenbeck.* 594, 592 (2003)

Toward a Reconnection Model for Solar Flare Statistics. *M. S. Wheatland & I. J. D. Craig.* 595, 458 (2003)

TRACE and *Yohkoh* Observations of a White-Light Flare. *Thomas R. Metcalf, David Alexander, Hugh S. Hudson, & Dana W. Longcope.* 595, 483 (2003)

Magnetic Pinching of Hyperbolic Flux Tubes. II. Dynamic Numerical Model. *K. Galsgaard, V. S. Titov, & T. Neukirch.* 595, 506 (2003)

Coronal Mass Ejection: Initiation, Magnetic Helicity, and Flux Ropes. II. Turbulent Diffusion–driven Evolution. *T. Amari, J. F. Luciani, J. J. Aly, Z. Mikic, & J. Linker.* 595, 1231 (2003)

The Dynamical Morphologies of Flares Associated with the Two Types of Solar Coronal Mass Ejections. *Mei Zhang & Leon Golub.* 595, 1251 (2003)

Three-Dimensional Reconnection of Untwisted Magnetic Flux Tubes. *M. G. Linton & E. R. Priest.* 595, 1259 (2003)

Photospheric Magnetic Field Properties of Flaring versus Flare-quiet Active Regions. I. Data, General Approach, and Sample Results. *K. D. Leka & G. Barnes.* 595, 1277 (2003)

Photospheric Magnetic Field Properties of Flaring versus Flare-Quiet Active Regions. III. Discriminant Analysis. *K. D. Leka & G. Barnes.* 595, 1296 (2003)

RHESSI Observations of Particle Acceleration and Energy Release in an Intense Solar Gamma-Ray Line Flare. *R. P. Lin, S. Krucker, G. J. Hurford, D. M. Smith, H. S. Hudson, G. D. Holman, R. A. Schwartz, B. R. Dennis, G. H. Share, R. J. Murphy, A. G. Emslie, C. Johns-Krull, & N. Vilmer.* 595, L69 (2003)

First Gamma-Ray Images of a Solar Flare. *G. J. Hurford, R. A. Schwartz, S. Krucker, R. P. Lin, D. M. Smith, & N. Vilmer.* 595, L77 (2003)

High-Resolution Spectroscopy of Gamma-Ray Lines from the X-Class Solar Flare of 2002 July 23. *D. M. Smith, G. H. Share, R. J. Murphy, R. A. Schwartz, A. Y. Shih, & R. P. Lin.* 595, L81 (2003)

High-Resolution Observation of the Solar Positron-Electron Annihilation Line. *Gerald H. Share, Ronald J. Murphy, Jeffrey G. Skibo, David M. Smith, Hugh S. Hudson, Robert P. Lin, Albert Y. Shih, Brian R. Dennis, Richard A. Schwartz, & Benzion Kozlovsky.* 595, L85 (2003)

Directionality of Flare-accelerated α-Particles at the Sun. *Gerald H. Share, Ronald J. Murphy, David M. Smith, Robert P. Lin, Brian R. Dennis, & Richard A. Schwartz.* 595, L89 (2003)

Physical Implications of *RHESSI* Neutron-Capture Line Measurements. *R. J. Murphy, G. H. Share, X.-M. Hua, R. P. Lin, D. M. Smith, & R. A. Schwartz.* 595, L93 (2003)

Electron Bremsstrahlung Hard X-Ray Spectra, Electron Distributions, and Energetics in the 2002 July 23 Solar Flare. *Gordon D. Holman, Linhui Sui, Richard A. Schwartz, & A. Gordon Emslie.* 595, L97 (2003)

Hard X-Ray Source Motions in the 2002 July 23 Gamma-Ray Flare. *Säm Krucker, G. J. Hurford, & R. P. Lin.* 595, L103 (2003)

RHESSI Hard X-Ray Imaging Spectroscopy of the Large Gamma-Ray Flare of 2002 July 23. *A. Gordon Emslie, Eduard P. Kontar, Säm Krucker, & Robert P. Lin.* 595, L107 (2003)

Radio and Hard X-Ray Images of High-Energy Electrons in an X-Class Solar Flare. *S. M. White, S. Krucker, K. Shibasaki, T. Yokoyama, M. Shimojo, & M. R. Kundu.* 595, L111 (2003)

The Determination and Use of Mean Electron Flux Spectra in Solar Flares. *John C. Brown, A. Gordon Emslie, & Eduard P. Kontar.* 595, L115 (2003)

The Determination of the Total Injected Power in Solar Flare Electrons. *A. Gordon Emslie.* 595, L119 (2003)

An Explanation for Non–Power-Law Behavior in the Hard X-Ray Spectrum of the 2002 July 23 Solar Flare. *Eduard P. Kontar, John C. Brown, A. Gordon Emslie, Richard A. Schwartz, David M. Smith, & R. Calum Alexander.* 595, L123 (2003)

Regularized Electron Flux Spectra in the 2002 July 23 Solar Flare. *Michele Piana, Anna Maria Massone, Eduard P. Kontar, A. Gordon Emslie, John C. Brown, & Richard A. Schwartz.* 595, L127 (2003)

Hα Line Polarization in the Major Flare of 2002 July 23. I. Observations and Data Analysis. *N. M. Firstova, Z. Xu, & C. Fang.* 595, L131 (2003)

^{138}L Anomaly in the Early Solar System. *Jason Jiun-San Shen & Typhoon Lee.* 596, L109 (2003)

Flux Rope Acceleration and Enhanced Magnetic Reconnection Rate. *C. Z. Cheng, Y. Ren, G. S. Choe, & Y.-J. Moon.* 596, 1341 (2003)

Hα Impact Polarization Observed in a Gradual Flare. *Y. Hanaoka.* 596, 1347 (2003)

Evidence for the Formation of a Large-Scale Current Sheet in a Solar Flare. *Linhui Sui & Gordon D. Holman.* 596, L251 (2003)

Detection of a Taylor-like Plasma Relaxation Process in the Sun. *Dibyendu Nandy, Michael Hahn, Richard C. Canfield, & Dana W. Longcope.* 597, L73 (2003)

Signature of Avalanche in Solar Flares as Measured by Photospheric Magnetic Fields. *V. I. Abramenko, V. B. Yurchyshyn, H. Wang, T. J. Spirock, & P. R. Goode.* 597, 1135 (2003)

Hα Dimmings Associated with the X1.6 Flare and Halo Coronal Mass Ejection on 2001 October 19. *Yunchun Jiang, Haisheng Ji, Haimin Wang, & Huadong Chen.* 597, L161 (2003)

Preflare Phenomena in Eruptive Flares. *Angela C. Des Jardins & Richard C. Canfield.* 598, 678 (2003)

Hα and Hard X-Ray Observations of a Two-Ribbon Flare Associated with a Filament Eruption. *M. D. Ding, Q. R. Chen, J. P. Li, & P. F. Chen.* 598, 683 (2003)

Near-Relativistic Solar Electrons and Type III Radio Bursts. *H. V. Cane.* 598, 1403 (2003)

Flare-Related Magnetic Anomaly with a Sign Reversal. *Jiong Qiu & Dale E. Gary.* 599, 615 (2003)

Tether-cutting Energetics of a Solar Quiet-Region Prominence Eruption. *Alphonse C. Sterling & Ronald L. Moore.* 599, 1418 (2003)

Particle Acceleration by Slow Modes in Strong Compressible Magnetohydrodynamic Turbulence, with Application to Solar Flares. *Benjamin D. G. Chandran.* 599, 1426 (2003)

SUN: FUNDAMENTAL PARAMETERS

The Effect of Background Subtraction on the Temperature of EIT Coronal Loops. *J. T. Schmelz, J. E. Beene, K. Nasraoui, H. T. Blevins, P. C. H. Martens, & J. W. Cirtain.* 599, 604 (2003)

SUN: GRANULATION

The Scales of Granulation, Mesogranulation, and Supergranulation. *Mark Peter Rast.* 597, 1200 (2003)

SUN: HELIOSEISMOLOGY

Acoustic Wave Propagation in the Sun: Implications for Wave Field and Time-Distance Helioseismology. *C. H. Tong, M. J. Thompson, M. R. Warner, S. P. Rajaguru, & C. C. Pain.* 582, L121 (2003)

Our Sun. IV. The Standard Model and Helioseismology: Consequences of Uncertainties in Input Physics and in Observed Solar Parameters. *Arnold I. Boothroyd & I.-Juliana Sackmann.* 583, 1004 (2003)

Our Sun. V. A Bright Young Sun Consistent with Helioseismology and Warm Temperatures on Ancient Earth and Mars. *I.-Juliana Sackmann & Arnold I. Boothroyd.* 583, 1024 (2003)

Changes in Solar Dynamics from 1995 to 2002. *Sarbani Basu & H. M. Antia.* 585, 553 (2003)

Temporal Variation of Angular Momentum in the Solar Convection Zone. *R. Komm, R. Howe, B. R. Durney, & F. Hill.* 586, 650 (2003)

Optimal Masks for Solar *g*-Mode Detection. *R. Wachter, J. Schou, A. G. Kosovichev, & P. H. Scherrer.* 588, 1199 (2003)

A Comparison of Low-Degree Solar *p*-Mode Parameters from BiSON and GONG: Underlying Values and Temporal Variations. *R. Howe, W. J. Chaplin, Y. P. Elsworth, F. Hill, R. Komm, G. R. Isaak, & R. New.* 588, 1204 (2003)

A Comparison of Solar *p*-Mode Parameters from MDI and GONG: Mode Frequencies and Structure Inversion. *S. Basu, J. Christensen-Dalsgaard, R. Howe, J. Schou, M. J. Thompson, F. Hill, & R. Komm.* 591, 432 (2003)

Helioseismic Observation of the Structure and Dynamics of a Rotating Sunspot beneath the Solar Surface. *Junwei Zhao & Alexander G. Kosovichev.* 591, 446 (2003)

Global Parameter and Helioseismic Tests of Solar Variability Models. *L. H. Li, S. Basu, S. Sofia, F. J. Robinson, P. Demarque, & D. B. Guenther.* 591, 1267 (2003)

Helioseismic Signals and Wave Field Helioseismology. *C. H. Tong, M. J. Thompson, M. R. Warner, & C. C. Pain.* 593, 1242 (2003)

Excitation and Damping of Low-Degree Solar *p*-Modes during Activity Cycle 23: Analysis of GOLF and VIRGO/Sun Photometer Data. *S. J. Jiménez-Reyes, R. A. García, A. Jiménez, & W. J. Chaplin.* 595, 446 (2003)

What Causes *p*-Mode Asymmetry Reversal? *Dali Georgobiani, Robert F. Stein, & Åke Nordlund.* 596, 698 (2003)

How Well Can We Infer the Properties of the Solar Acoustic Sources? *Stuart M. Jefferies, Giuseppe Severino, Pier-Francesco Moretti, Maurizio Oliviero, & Cynthia Giebink.* 596, L117 (2003)

The Significance of Density and Attenuation in the Local Helioseismology. *C. H. Tong, M. J. Thompson, M. R. Warner, & C. C. Pain.* 596, L263 (2003)

The Rotation of the Deep Solar Layers. *S. Couvidat, R. A. García, S. Turck-Chièze, T. Corbard, C. J. Henney, & S. Jiménez-Reyes.* 597, L77 (2003)

Solar Seismic Models and the Neutrino Predictions. *S. Couvidat, S. Turck-Chièze, & A. G. Kosovichev.* 599, 1434 (2003)

SUN: INFRARED

Weak Infrared Molecular Lines Reveal Rapid Outflow in Cool Magnetic Sunspot Penumbral Fibrils. *M. J. Penn, W. D. Cao, S. R. Walton, G. A. Chapman, & W. Livingston.* 590, L119 (2003)

On the Detection of the Signature of Silicon Nanoparticle Dust Grains in Coronal Holes. *Shadia Rifai Habbal, Martina Belz Arndt, Munir H. Nayfeh, Jean Arnaud, Judd Johnson, Steve Hegwer, Richard Woo, Alexandru Ene, & Feras Habbal.* 592, L87 (2003)

SUN: INTERIOR

The Dynamic Evolution of Twisted Magnetic Flux Tubes in a Three-dimensional Convecting Flow. I. Uniformly Buoyant Horizontal Tubes. *Y. Fan, W. P. Abbett, & G. H. Fisher.* 582, 1206 (2003)

Our Sun. IV. The Standard Model and Helioseismology: Consequences of Uncertainties in Input Physics and in Observed Solar Parameters. *Arnold I. Boothroyd & I.-Juliana Sackmann.* 583, 1004 (2003)

Storage and Equilibrium of Toroidal Magnetic Fields in the Solar Tacholine: A Comparison between MHD-Shallow-Water and Full MHD Approaches. *Matthias Rempel & Mausumi Dikpati.* 584, 524 (2003)

Changes in Solar Dynamics from 1995 to 2002. *Sarbani Basu & H. M. Antia.* 585, 553 (2003)

Hot Spots for Solar Flares Persisting for Decades: Longitude Distributions of Flares of Cycles 19–23. *T. Bai.* 585, 1114 (2003)

Temporal Variation of Angular Momentum in the Solar Convection Zone. *R. Komm, R. Howe, B. R. Durney, & F. Hill.* 586, 650 (2003)

Numerical Modeling of the Solar Tachocline. II. Forced Turbulence with Imposed Shear. *Mark S. Miesch.* 586, 663 (2003)

On the Formation of Magnetic Structures by the Combined Action of Velocity Shear and Magnetic Boynancy. *Kelly S. Cline, Nicholas H. Brummell, & Fausto Cattaneo.* 588, 630 (2003)

Gravity Wave–driven Flows in the Solar Tachocline. II. Stationary Flows. *Eun-jin Kim & K. B. MacGregor.* 588, 645 (2003)

Large Mixing Angle Oscillations as a Probe of the Deep Solar Interior. *C. Burgess, N. S. Dzhalilov, M. Maltoni, T. I. Rashba, V. B. Semikoz, M. A. Tórtola, & J. W. F. Valle.* 588, L65 (2003)

Evidence That a Deep Meridional Flow Sets the Sunspot Cycle Period. *David H. Hathaway, Dibyendu Nandy, Robert M. Wilson, & Edwin J. Reichmann.* 589, 665 (2003)

A Comparison of Solar *p*-Mode Parameters from MDI and GONG: Mode Frequencies and Structure Inversion. *S. Basu, J. Christensen-Dalsgaard, R. Howe, J. Schou, M. J. Thompson, F. Hill, & R. Komm.* 591, 432 (2003)

Helioseismic Observation of the Structure and Dynamics of a Rotating Sunspot beneath the Solar Surface. *Junwei Zhao & Alexander G. Kosovichev.* 591, 446 (2003)

Global Parameter and Helioseismic Tests of Solar Variability Models. *L. H. Li, S. Basu, S. Sofia, F. J. Robinson, P. Demarque, & D. B. Guenther.* 591, 1267 (2003)

Time-Series Analysis of Super-Kamiokande Measurements of the Solar Neutrino Flux. *P. A. Sturrock.* 594, 1102 (2003)

A Viscoelastic Theory of Turbulent Fluid Permeated with Fibril Magnetic Fields. *D. W. Longcope, T. C. B. McLeish, & G. H. Fisher.* 599, 661 (2003)

Solar Seismic Models and the Neutrino Predictions. *S. Couvidat, S. Turck-Chièze, & A. G. Kosovichev.* 599, 1434 (2003)

Dynamo Action Driven by Shear and Magnetic Buoyancy. *Kelly S. Cline, Nicholas H. Brummell, & Fausto Cattaneo.* 599, 1449 (2003)

SUN: MAGNETIC FIELDS

A Coupled Model for the Emergence of Active Region Magnetic Flux into the Solar Corona. *W. P. Abbett & G. H. Fisher.* 582, 475 (2003)

Improved Estimate of the Magnetic Field in a Prominence. *A. Lopez-Ariste & R. Casini.* 582, L51 (2003)

Quiet-Sun Magnetic Fields at High Spatial Resolution. *I. Dominguez Cardena, F. Kneer, & J. Sanchez Almeida.* 582, L55 (2003)

Magnetic Pinching of Hyperbolic Flux Tubes. I. Basic Estimations. *V. S. Titov, K. Galsgaard, & T. Neukirch.* 582, 1172 (2003)

Clamshell and Tipping Instabilities in a Two-dimensional Magnetohydrodynamic Tachocline. *Paul S. Cally, Mausumi Dikpati, & Peter A. Gilman.* 582, 1190 (2003)

The Dynamic Evolution of Twisted Magnetic Flux Tubes in a Three-dimensional Convecting Flow. I. Uniformly Buoyant Horizontal Tubes. *Y. Fan, W. P. Abbett, & G. H. Fisher.* 582, 1206 (2003)

Magnetic Flux Emergence into the Solar Corona. III. The Role of Magnetic Helicity Conservation. *M. Zhang & B. C. Low.* 584, 479 (2003)

Storage and Equilibrium of Toroidal Magnetic Fields in the Solar Tacholine: A Comparison between MHD-Shallow-Water and Full MHD Approaches. *Matthias Rempel & Mausumi Dikpati.* 584, 524 (2003)

The Formation of a Prominence in NOAA Active Region 8668. II. *Trace* Observations of Jets and Eruptions Associated with Canceling Magnetic Features. *Jongchul Chae.* 584, 1084 (2003)

Formation of a Sporadic Plasma Jet from a Disrupting Magnetic Flux Tube. *J. I. Sakai, K. Nishi, & I. V. Sokolov.* 584, 1095 (2003)

The Properties of Small Magnetic Regions on the Solar Surface and the Implications for the Solar Dynamo(s). *Hermance J. Hagenaar, Carolus J. Schrijver, & Alan M. Title.* 584, 1107 (2003)

Doubly Helical Coronal Ejections from Dynamos and Their Role in Sustaining the Solar Cycle. *Eric G. Blackman & Axel Brandenburg.* 584, L99 (2003)

Hα, Extreme-Ultraviolet, and Microwave Observations of the 2000 March 22 Solar Flare and Spontaneous Magnetic Reconnection. *Jeongwoo Lee, Peter T. Gallagher, Dale E. Gary, Gelu M. Nita, G. S. Choe, Su-Chan Bong, & Hong Sik Yun.* 585, 524 (2003)

Polarization of Photospheric Lines from Turbulent Dynamo Simulations. *J. Sánchez Almeida, T. Emonet, & F. Cattaneo.* 585, 536 (2003)

Nonaxisymmetric Instabilities of a Toroidal Magnetic Field in a Rotating Sphere. *Keke Zhang, Xinhao Liao, & Gerald Schubert.* 585, 1124 (2003)

Kink and Longitudinal Oscillations in the Magnetic Network on the Sun: Nonlinear Effects and Mode Transformation. *S. S. Hasan, W. Kalkofen, A. A. van Ballegooijen, & P. Ulmschneider.* 585, 1138 (2003)

The Long-Term Evolution of AR 7978: The Scalings of the Coronal Plasma Parameters with the Mean Photospheric Magnetic Field. *L. van Driel-Gesztelyi, P. Démoulin, C. H. Mandrini, L. Harra, & J. A. Klimchuk.* 586, 579 (2003)

The Long-Term Evolution of AR 7978: Testing Coronal Heating Models. *P. Démoulin, L. van Driel-Gesztelyi, C. H. Mandrini, J. A. Klimchuk, & L. Harra.* 586, 592 (2003)

Injection of Magnetic Energy and Magnetic Helicity into the Solar Atmosphere by an Emerging Magnetic Flux Tube. *T. Magara & D. W. Longcope.* 586, 630 (2003)

Fast Dynamo Action for a Family of Parametrized Flows. *S. E. M. Tanner & D. W. Hughes.* 586, 685 (2003)

WIND Observations of Anomalous Cosmic Rays from Solar Minimum to Maximum. *D. V. Reames & F. B. McDonald.* 586, L99 (2003)

Photospheric Sources and Brightening of the Internetwork Chromosphere. *A. C. Cadavid, J. K. Lawrence, T. E. Berger, & A. Ruzmaikin.* 586, 1409 (2003)

Transition Region and Coronal Explorer and Soft X-Ray Telescope Active Region Loop Observations: Comparisons with Static Solutions of the Hydrodynamic Equations. *Amy R. Winebarger, Harry P. Warren, & John T. Mariska.* 587, 439 (2003)

Petschek-like Reconnection with Current-driven Anomalous Resistivity and Its Application to Solar Flares. *Dmitri A. Uzdensky.* 587, 450 (2003)

Motions of Isolated *G*-Band Bright Points in the Solar Photosphere. *P. Nisenson, A. A. van Ballegooijen, A. G. de Wijn, & P. Suetterlin.* 587, 458 (2003)

Observational Evidence for Mode Coupling in the Chromospheric Network. *R. T. James McAteer, Peter T. Gallagher, David R. Williams, Mihalis Mathioudakis, D. Shaun Bloomfield, Kenneth J. H. Phillips, & Francis P. Keenan.* 587, 806 (2003)

The Solar Wind and Its Magnetic Sources at Sunspot Maximum. *Y.-M. Wang & N. R. Sheeley, Jr.* 587, 818 (2003)

Models of Three-dimensional Flux Ropes. *Joachim Birn, Terry G. Forbes, & Karl Schindler.* 588, 578 (2003)

Magnetic Helicity Injection by Horizontal Flows in the Quiet Sun. I. Mutual-Helicity Flux. *B. T. Welsch & D. W. Longcope.* 588, 620 (2003)

On the Formation of Magnetic Structures by the Combined Action of Velocity Shear and Magnetic Boynancy. *Kelly S. Cline, Nicholas H. Brummell, & Fausto Cattaneo.* 588, 630 (2003)

Gravity Wave–driven Flows in the Solar Tachocline. II. Stationary Flows. *Eun-jin Kim & K. B. MacGregor.* 588, 645 (2003)

A Three-dimensional Flux Rope Model for Coronal Mass Ejections Based on a Loss of Equilibrium. *Ilia I. Roussev, Terry G. Forbes, Tamas I. Gombosi, Igor V. Sokolov, Darren L. DeZeeuw, & Joachim Birn.* 588, L45 (2003)

Large Mixing Angle Oscillations as a Probe of the Deep Solar Interior. *C. Burgess, N. S. Dzhalilov, M. Maltoni, T. I. Rashba, V. B. Semikoz, M. A. Tórtola, & J. W. F. Valle.* 588, L65 (2003)

On the Interaction between Convection and Magnetic Fields. *Fausto Cattaneo, Thierry Emonet, & Nigel Weiss.* 588, 1183 (2003)

Comparison of Total Solar Irradiance with NASA/National Solar Observatory Spectromagnetograph Data in Solar Cycles 22 and 23. *Harrison P. Jones, Detrick D. Branston, Patricia B. Jones, & Miruna D. Popescu.* 589, 658 (2003)

Evidence That a Deep Meridional Flow Sets the Sunspot Cycle Period. *David H. Hathaway, Dibyendu Nandy, Robert M. Wilson, & Edwin J. Reichmann.* 589, 665 (2003)

Two-dimensional Magnetohydrodynamic Models of the Solar Corona: Mass Loss from the Streamer Belt. *Eirik Endeve, Egil Leer, & Thomas E. Holzer.* 589, 1040 (2003)

Variation of X-Ray Bright Point Number over the Solar Activity Cycle. *H. Hara & K. Nakakubo-Marimoto.* 589, 1062 (2003)

The Emergence of a Twisted Magnetic Flux Tube into a Preexisting Coronal Arcade. *Y. Fan & S. E. Gibson.* 589, L105 (2003)

The Observation of Sunspot Light-Bridge Structure and Dynamics. *T. E. Berger & S. V. Berdyugina.* 589, L117 (2003)

Evolution of Magnetic Fields in Corotating Interaction Regions from 1 to 95 AU: Order to Chaos. *L. F. Burlaga, C. Wang, J. D. Richardson, & N. F. Ness.* 590, 554 (2003)

On the Fluctuating Component of the Sun's Large-Scale Magnetic Field. *Y.-M. Wang & N. R. Sheeley, Jr.* 590, 1111 (2003)

Probing the Edge of the Solar System: Formation of an Unstable Jet-Sheet. *Merav Opher, Paulett C. Liewer, Tamas I. Gombosi, Ward Manchester, Darren L. DeZeeuw, Igor Sokolov, & Gabor Toth.* 591, L61 (2003)

Modeling the Sun's Large-Scale Magnetic Field during the Maunder Minimum. *Y.-M. Wang & N. R. Sheeley, Jr.* 591, 1248 (2003)

Coronal Structure of a Flaring Region and Associated Coronal Mass Ejection. *P. K. Manoharan & M. R. Kundu.* 592, 597 (2003)

The Accuracy of the Center-of-Gravity Method for Measuring Velocity and Magnetic Field Strength in the Solar Photosphere. *H. Uitenbroek.* 592, 1225 (2003)

On the Detection of the Signature of Silicon Nanoparticle Dust Grains in Coronal Holes. *Shadia Rifai Habbal, Martina Belz Arndt, Munir H. Nayfeh, Jean Arnaud, Judd Johnson, Steve Hegwer, Richard Woo, Alexandru Ene, & Feras Habbal.* 592, L87 (2003)

Solar Coronal Heating and the Magnetic Flux Content of the Network. *D. A. Falconer, R. L. Moore, J. G. Porter, & D. H. Hathaway.* 593, 549 (2003)

Study of Ribbon Separation of a Flare Associated with a Quiescent Filament Eruption. *Haimin Wang, Jiong Qui, Ju Jing, & Hongqi Zhang.* 593, 564 (2003)

Magnetic Fields in the Quiet Sun: Observational Discrepancies and Unresolved Structure. *H. Socas-Navarro & J. Sánchez Almeida.* 593, 581 (2003)

Constraints on the Magnetic Field Geometry in Prominences. *J. T. Karpen, S. K. Antiochos, J. A. Klimchuk, & P. J. MacNeice.* 593, 1187 (2003)

Role of Magnetic Flux Distribution in Coronal Energy Storage. *Richard Wolfson.* 593, 1208 (2003)

Helicity Evolution in Emerging Active Regions. *Alexei A. Pevtsov, Vasily M. Maleev, & Dana W. Longcope.* 593, 1217 (2003)

Magnetohydrodynamic Numerical Simulations of Solar X-Ray Jets Based on the Magnetic Reconnection Model That Includes Chromospheric Evaporation. *Takehiro Miyagoshi & Takaaki Yokoyama.* 593, L133 (2003)

Observational Evidence of a Magnetic Flux Rope Eruption Associated with the X3 Flare on 2002 July 15. *Yu Liu, Yunchun Jiang, Haishen Ji, Hongqi Zhang, & Haimin Wang.* 593, L137 (2003)

The Magnetic Helicity Budget of Solar Active Regions and Coronal Mass Ejections. *A. Nindos, J. Zhang, & H. Zhang.* 594, 1033 (2003)

Linear Polarization Measurements of Chromospheric Emission Lines. *N. R. Sheeley, Jr., & C. U. Keller.* 594, 1085 (2003)

Toward a Reconnection Model for Solar Flare Statistics. *M. S. Wheatland & I. J. D. Craig.* 595, 458 (2003)

The Evolution of Vector Magnetic Fields in an Emerging Flux Region. *M. Kubo, T. Shimizu, & B. W. Lites.* 595, 465 (2003)

Perpendicular Transport of Solar Energetic Particles in Heliospheric Magnetic Fields. *Ming Zhang, J. R. Jokipii, & R. B. McKibben.* 595, 493 (2003)

Chirality of Chromospheric Filaments. *Alexei A. Pevtsov, K. S. Balasubramaniam, & Joey W. Rogers.* 595, 500 (2003)

Magnetic Pinching of Hyperbolic Flux Tubes. II. Dynamic Numerical Model. *K. Galsgaard, V. S. Titov, & T. Neukirch.* 595, 506 (2003)

A Three-dimensional Model of the Solar Wind Incorporating Solar Magnetogram Observations. *I. I. Roussev, T. I. Gombosi, I. V. Sokolov, M. Velli, W. Manchester IV, D. L. DeZeeuw, P. Liewer, G. Tóth, & J. Luhmann.* 595, L57 (2003)

Three-Dimensional Reconnection of Untwisted Magnetic Flux Tubes. *M. G. Linton & E. R. Priest.* 595, 1259 (2003)

Observations of the Failed Eruption of a Filament. *Haisheng Ji, Haimin Wang, Edward J. Schmahl, Y.-J. Moon, & Yunchun Jiang.* 595, L135 (2003)

A Three-dimensional Spherical Nonlinear Interface Dynamo. *K. Zhang, K. H. Chan, J. Zou, X. Liao, & G. Schubert.* 596, 663 (2003)

Stability Analysis of Tachocline Latitudinal Differential Rotation and Coexisting Toroidal Band Using a Shallow-Water Model. *Mausumi Dikpati, Peter A. Gilman, & Matthias Rempel.* 596, 680 (2003)

What Is the Role of the Kink Instability in Solar Coronal Eruptions? *Robert J. Leamon, Richard C. Canfield, Zachary Blehm, & Alexei A. Pevtsov.* 596, L255 (2003)

Detection of a Taylor-like Plasma Relaxation Process in the Sun. *Dibyendu Nandy, Michael Hahn, Richard C. Canfield, & Dana W. Longcope.* 597, L73 (2003)

Signature of Avalanche in Solar Flares as Measured by Photospheric Magnetic Fields. *V. I. Abramenko, V. B. Yurchyshyn, H. Wang, T. J. Spirock, & P. R. Goode.* 597, 1135 (2003)

Influence of Photospheric Magnetic Fields and Dynamics on Chromospheric K-Line Emission. *J. K. Lawrence, A. C. Cadavid, D. Miccolis, T. E. Berger, & A. Ruzmaikin.* 597, 1178 (2003)

High Spatial Resolution Observations of Pores and the Formation of a Rudimentary Penumbra. *G. Yang, Y. Xu, H. Wang, & C. Denker.* 597, 1190 (2003)

Hα Dimmings Associated with the X1.6 Flare and Halo Coronal Mass Ejection on 2001 October 19. *Yunchun Jiang, Haisheng Ji, Haimin Wang, & Huadong Chen.* 597, L161 (2003)

The Magnetic Connection between the Solar Photosphere and the Corona. *Carolus J. Schrijver & Alan M. Title.* 597, L165 (2003)

Why Solar Magnetic Flux Concentrations Are Bright in Molecular Bands. *M. Schüssler, S. Shelyag, S. Berdyugina, A. Vögler, & S. K. Solanki.* 597, L173 (2003)

Simultaneous Visible and Infrared Spectropolarimetry of a Solar Internetwork Region. *J. Sánchez Almeida, I. Domínguez Cerdeña, & F. Kneer.* 597, L177 (2003)

Binary Reconnection and the Heating of the Solar Corona. *E. R. Priest, D. W. Longcope, & V. S. Titov.* 598, 667 (2003)

Preflare Phenomena in Eruptive Flares. *Angela C. Des Jardins & Richard C. Canfield.* 598, 678 (2003)

Properties of Magnetic and Velocity Fields in and around Solar Pores. *K. Sankarasubramanian & Thomas Rimmele.* 598, 689 (2003)

Coronal Mass Ejections and Solar Polarity Reversal. *N. Gopalswamy, A. Lara, S. Yashiro, & R. A. Howard.* 598, L63 (2003)

Magnetic Maps of Prominences from Full Stokes Analysis of the He I D3 Line. *R. Casini, A. López Ariste, S. Tomczyk, & B. W. Lites.* 598, L67 (2003)

The Effect of Proton Temperature Anisotropy on the Solar Minimum Corona and Wind. *Alberto M. Vásquez, Adrian A. van Ballegooijen, & John C. Raymond.* 598, 1361 (2003)

Observational Tests of Damping by Resonant Absorption in Coronal Loop Oscillations. *Markus J. Aschwanden, Richard W. Nightingale, Jesse Andries, Marcel Goossens, & Tom Van Doorsselaere.* 598, 1375 (2003)

The Relationship Between X-Ray Radiance and Magnetic Flux. *Alexei A. Pevtsov, George H. Fisher, Loren W. Acton, Dana W. Longcope, Christopher M. Johns-Krull, Charles C. Kankelborg, & Thomas R. Metcalf.* 598, 1387 (2003)

Voyager 2 Measurements in the Outer Heliosphere of the Energy Spectra of Cosmic-Ray Nuclei from Less than 100 MeV Nucleon^{-1} to More than 1.0 GeV Nucleon^{-1}. *W. R. Webber, F. B. McDonald, & A. Lukasiak.* 599, 582 (2003)

Flare-Related Magnetic Anomaly with a Sign Reversal. *Jiong Qiu & Dale E. Gary.* 599, 615 (2003)

Waves in the Magnetized Solar Atmosphere. II. Waves from Localized Sources in Magnetic Flux Concentrations. *T. J. Bogdan, M. Carlsson, V. Hansteen, A. McMurray, C. S. Rosenthal, M. Johnson, S. Petty-Powell, E. J. Zita, R. F. Stein, S. W. McIntosh, & Å. Nordlund.* 599, 626 (2003)

A Viscoelastic Theory of Turbulent Fluid Permeated with Fibril Magnetic Fields. *D. W. Longcope, T. C. B. McLeish, & G. H. Fisher.* 599, 661 (2003)

On the Topological Evolution of the Coronal Magnetic Field During the Solar Cycle. *Y. M. Wang & N. R. Sheeley, Jr.* 599, 1404 (2003)

Dynamo Action Driven by Shear and Magnetic Buoyancy. *Kelly S. Cline, Nicholas H. Brummell, & Fausto Cattaneo.* 599, 1449 (2003)

SUN: OSCILLATIONS

Does the Energy Supplied to Low-l Solar p-Modes Vary over the Activity Cycle? *W. J. Chaplin, Y. Elsworth, G. R. Isaak, B. A. Miller, R. New, & T. Toutain.* 582, L115 (2003)

Temporal Behavior of the Evershed Effect. *A. A. Georgakilas & E. B. Christopoulou.* 584, 509 (2003)

Periodic Motion along a Solar Filament Initiated by a Subflare. *Ju Jing, Jeongwoo Lee, Thomas J. Spirock, Yan Xu, Haimin Wang, & G. S. Choe.* 584, L103 (2003)

Changes in Solar Dynamics from 1995 to 2002. *Sarbani Basu & H. M. Antia.* 585, 553 (2003)

Kink and Longitudinal Oscillations in the Magnetic Network on the Sun: Nonlinear Effects and Mode Transformation. *S. S. Hasan, W. Kalkofen, A. A. van Ballegooijen, & P. Ulmschneider.* 585, 1138 (2003)

Temporal Variation of Angular Momentum in the Solar Convection Zone. *R. Komm, R. Howe, B. R. Durney, & F. Hill.* 586, 650 (2003)

Numerical Modeling of the Solar Tachocline. II. Forced Turbulence with Imposed Shear. *Mark S. Miesch.* 586, 663 (2003)

Photospheric Sources and Brightening of the Internetwork Chromosphere. *A. C. Cadavid, J. K. Lawrence, T. E. Berger, & A. Ruzmaikin.* 586, 1409 (2003)

Observational Evidence for Mode Coupling in the Chromospheric Network. *R. T. James McAteer, Peter T. Gallagher, David R. Williams, Mihalis Mathioudakis, D. Shaun Bloomfield, Kenneth J. H. Phillips, & Francis P. Keenan.* 587, 806 (2003)

Magnetoacoustic Waves in Sunspots. *E. V. Khomenko, M. Collados, & L. R. Bellot Rubio.* 588, 606 (2003)

Large Mixing Angle Oscillations as a Probe of the Deep Solar Interior. *C. Burgess, N. S. Dzhalilov, M. Maltoni, T. I. Rashba, V. B. Semikoz, M. A. Tórtola, & J. W. F. Valle.* 588, L65 (2003)

Optimal Masks for Solar *g*-Mode Detection. *R. Wachter, J. Schou, A. G. Kosovichev, & P. H. Scherrer.* 588, 1199 (2003)

A Comparison of Low-Degree Solar *p*-Mode Parameters from BiSON and GONG: Underlying Values and Temporal Variations. *R. Howe, W. J. Chaplin, Y. P. Elsworth, F. Hill, R. Komm, G. R. Isaak, & R. New.* 588, 1204 (2003)

Detection of Photospheric Impacts from Chromospheric Impulsive Events. *P. F. Moretti, F. Berrilli, A. Sebastianelli, C. Briand, & E. Pietropaolo.* 589, L109 (2003)

Does the Sun Shrink with Increasing Magnetic Activity? *H. M. Antia.* 590, 567 (2003)

Wavelet Analysis of Umbral Oscillations. *E. B. Christopoulou, A. Skodras, A. A. Georgakilas, & S. Koutchmy.* 591, 416 (2003)

A Comparison of Solar *p*-Mode Parameters from MDI and GONG: Mode Frequencies and Structure Inversion. *S. Basu, J. Christensen-Dalsgaard, R. Howe, J. Schou, M. J. Thompson, F. Hill, & R. Komm.* 591, 432 (2003)

Helioseismic Observation of the Structure and Dynamics of a Rotating Sunspot beneath the Solar Surface. *Junwei Zhao & Alexander G. Kosovichev.* 591, 446 (2003)

Global Parameter and Helioseismic Tests of Solar Variability Models. *L. H. Li, S. Basu, S. Sofia, F. J. Robinson, P. Demarque, & D. B. Guenther.* 591, 1267 (2003)

Excitation and Damping of Low-Degree Solar *p*-Modes during Activity Cycle 23: Analysis of GOLF and VIRGO/Sun Photometer Data. *S. J. Jiménez-Reyes, R. A. García, A. Jiménez, & W. J. Chaplin.* 595, 446 (2003)

What Causes *p*-Mode Asymmetry Reversal? *Dali Georgobiani, Robert F. Stein, & Åke Nordlund.* 596, 698 (2003)

How Well Can We Infer the Properties of the Solar Acoustic Sources? *Stuart M. Jefferies, Giuseppe Severino, Pier-Francesco Moretti, Maurizio Oliviero, & Cynthia Giebink.* 596, L117 (2003)

Waves in the Magnetized Solar Atmosphere. II. Waves from Localized Sources in Magnetic Flux Concentrations. *T. J. Bogdan, M. Carlsson, V. Hansteen, A. McMurray, C. S. Rosenthal, M. Johnson, S. Petty-Powell, E. J. Zita, R. F. Stein, S. W. McIntosh, & Å. Nordlund.* 599, 626 (2003)

Solar Seismic Models and the Neutrino Predictions. *S. Couvidat, S. Turck-Chièze, & A. G. Kosovichev.* 599, 1434 (2003)

SUN: PARTICLE EMISSION

Acceleration and Enrichment of ^{3}He in Impulsive Solar Flares by Electron Firehose Waves. *G. Paesold, R. Kallenbach, & A. O. Benz.* 582, 495 (2003)

Solar Energetic Particle Production by Coronal Mass Ejection–driven Shocks in Solar Fast-Wind Regions. *S. W. Kahler & D. V. Reames.* 584, 1063 (2003)

Optically Thick Gyrosynchrotron Emission from Anisotropic Electron Distributions. *G. D. Fleishman & V. F. Melnikov.* 584, 1071 (2003)

Toward an ab Initio Theory of the Solar Modulation of Cosmic Rays. *S. Parhi, J. W. Bieber, W. H. Matthaeus, & R. A. Burger.* 585, 502 (2003)

Cause of Proton Depletion in Solar Impulsive Particle Events. *K. Ohki.* 586, 617 (2003)

Low Coronal Signatures of Large Solar Energetic Particle Events. *Nariaki V. Nitta, Edward W. Cliver, & Allan J. Tylka.* 586, L103 (2003)

The Origin of High-Energy ^{3}He-rich Solar Particle Events. *L. Kocharov & J. Torsti.* 586, 1430 (2003)

Observation of GeV Solar Energetic Particles from the 1997 November 6 Event Using Milagrito. *A. Falcone, R. Atkins, W. Benbow, D. Berley, M. L. Chen, D. G. Coyne, B. L. Dingus, D. E. Dorfan, R. W. Ellsworth, L. Fleysher, R. Fleysher, G. Gisler, J. A. Goodman, T. J. Haines, C. M. Hoffman, S. Hugenberger, L. A. Kelley, I. Leonor, J. F. McCullough, J. E. McEnery, R. S. Miller, A. I. Mincer, M. F. Morales, P. Nemethy, J. M. Ryan, B. Shen, A. Shoup, G. Sinnis, A. J. Smith, G. W. Sullivan, T. Tumer, K. Wang, M. O. Wascko, S. Westerhoff, D. A. Williams, T. Yang, & G. B. Yodh.* 588, 557 (2003)

An Explanation for Large Enhancements of Nitrogen Relative to Carbon and Oxygen in Solar ^{3}He-rich Events. *T. X. Zhang & J. X. Wang.* 588, L57 (2003)

Evidence for a Suprathermal Seed Population of Heavy Ions Accelerated by Interplanetary Shocks near 1 AU. *M. I. Desai, G. M. Mason, J. R. Dwyer, J. E. Mazur, R. E. Gold, S. M. Krimigis, C. W. Smith, & R. M. Skoug.* 588, 1149 (2003)

Solar Particle Transport in a Dynamical Quasi-linear Theory. *Wolfgang Dröge.* 589, 1027 (2003)

Modeling Shock-accelerated Solar Energetic Particles Coupled to Interplanetary Alfvén Waves. *C. K. Ng, D. V. Reames, & A. J. Tylka.* 591, 461 (2003)

Decimetric Spike Bursts versus Microwave Continuum. *Gregory D. Fleishman, Dale E. Gary, & Gelu M. Nita.* 593, 571 (2003)

Generation of Suprathermal Electrons by Resonant Wave-Particle Interaction in the Solar Corona and Wind. *C. Vocks & G. Mann.* 593, 1134 (2003)

Elemental Fractionation in Small Solar Energetic Particle Events. *P. L. Slocum, E. C. Stone, R. A. Leske, E. R. Christian, C. M. S. Cohen, A. C. Cummings, M. I. Desai, J. R. Dwyer, G. M. Mason, J. E. Mazur, R. A. Mewaldt, T. T. von Rosenvinge, & M. E. Wiedenbeck.* 594, 592 (2003)

Time-Series Analysis of Super-Kamiokande Measurements of the Solar Neutrino Flux. *P. A. Sturrock.* 594, 1102 (2003)

Perpendicular Transport of Solar Energetic Particles in Heliospheric Magnetic Fields. *Ming Zhang, J. R. Jokipii, & R. B. McKibben.* 595, 493 (2003)

High-Resolution Observation of the Solar Positron-Electron Annihilation Line. *Gerald H. Share, Ronald J. Murphy, Jeffrey G. Skibo, David M. Smith, Hugh S. Hudson, Robert P. Lin, Albert Y. Shih, Brian R. Dennis, Richard A. Schwartz, & Benzion Kozlovsky.* 595, L85 (2003)

Directionality of Flare-accelerated α-Particles at the Sun. *Gerald H. Share, Ronald J. Murphy, David M. Smith, Robert P. Lin, Brian R. Dennis, & Richard A. Schwartz.* 595, L89 (2003)

Helium in Lunar Samples Analyzed by High-Resolution Stepwise Etching: Implications for the Temporal Constancy of Solar Wind Isotopic Composition. *Veronika S. Heber, Heinrich Baur, & Rainer Wieler.* 597, 602 (2003)

Trapping of Solar Energetic Particles by the Small-Scale Topology of Solar Wind Turbulence. *D. Ruffolo, W. H. Matthaeus, & P. Chuychai.* 597, L169 (2003)

Near-Relativistic Solar Electrons and Type III Radio Bursts. *H. V. Cane.* 598, 1403 (2003)

SUN: PHOTOSPHERE

Quiet-Sun Magnetic Fields at High Spatial Resolution. *I. Dominguez Cardena, F. Kneer, & J. Sanchez Almeida.* 582, L55 (2003)

Temporal Behavior of the Evershed Effect. *A. A. Georgakilas & E. B. Christopoulou.* 584, 509 (2003)

The Formation of a Prominence in NOAA Active Region 8668. II. *Trace* Observations of Jets and Eruptions Associated with Canceling Magnetic Features. *Jongchul Chae.* 584, 1084 (2003)

Polarization of Photospheric Lines from Turbulent Dynamo Simulations. *J. Sánchez Almeida, T. Emonet, & F. Cattaneo.* 585, 536 (2003)

Photospheric Sources and Brightening of the Internetwork Chromosphere. *A. C. Cadavid, J. K. Lawrence, T. E. Berger, & A. Ruzmaikin.* 586, 1409 (2003)

Observational Evidence for Mode Coupling in the Chromospheric Network. *R. T. James McAteer, Peter T. Gallagher, David R. Williams, Mihalis Mathioudakis, D. Shaun Bloomfield, Kenneth J. H. Phillips, & Francis P. Keenan.* 587, 806 (2003)

On the Interaction between Convection and Magnetic Fields. *Fausto Cattaneo, Thierry Emonet, & Nigel Weiss.* 588, 1183 (2003)

The Observation of Sunspot Light-Bridge Structure and Dynamics. *T. E. Berger & S. V. Berdyugina.* 589, L117 (2003)

On the Fluctuating Component of the Sun's Large-Scale Magnetic Field. *Y.-M. Wang & N. R. Sheeley, Jr.* 590, 1111 (2003)

Solar System Abundances and Condensation Temperatures of the Elements. *Katharina Lodders.* 591, 1220 (2003)

Modeling the Sun's Large-Scale Magnetic Field during the Maunder Minimum. *Y.-M. Wang & N. R. Sheeley, Jr.* 591, 1248 (2003)

The Accuracy of the Center-of-Gravity Method for Measuring Velocity and Magnetic Field Strength in the Solar Photosphere. *H. Uitenbroek.* 592, 1225 (2003)

Magnetic Fields in the Quiet Sun: Observational Discrepancies and Unresolved Structure. *H. Socas-Navarro & J. Sánchez Almeida.* 593, 581 (2003)

The Magnetic Helicity Budget of Solar Active Regions and Coronal Mass Ejections. *A. Nindos, J. Zhang, & H. Zhang.* 594, 1033 (2003)

The Evolution of Vector Magnetic Fields in an Emerging Flux Region. *M. Kubo, T. Shimizu, & B. W. Lites.* 595, 465 (2003)

Intensity Oscillations in the Upper Transition Region above Active Region Plage. *B. De Pontieu, R. Erdélyi, & A. G. de Wijn.* 595, L63 (2003)

Photospheric Magnetic Field Properties of Flaring versus Flare-quiet Active Regions. I. Data, General Approach, and Sample Results. *K. D. Leka & G. Barnes.* 595, 1277 (2003)

Photospheric Magnetic Field Properties of Flaring versus Flare-Quiet Active Regions. III. Discriminant Analysis. *K. D. Leka & G. Barnes.* 595, 1296 (2003)

Wavelike Properties of Solar Supergranulation Detected in Doppler Shift Data. *J. Schou.* 596, L259 (2003)

Signature of Avalanche in Solar Flares as Measured by Photospheric Magnetic Fields. *V. I. Abramenko, V. B. Yurchyshyn, H. Wang, T. J. Spirock, & P. R. Goode.* 597, 1135 (2003)

The Scales of Granulation, Mesogranulation, and Supergranulation. *Mark Peter Rast.* 597, 1200 (2003)

Why Solar Magnetic Flux Concentrations Are Bright in Molecular Bands. *M. Schüssler, S. Shelyag, S. Berdyugina, A. Vögler, & S. K. Solanki.* 597, L173 (2003)

Simultaneous Visible and Infrared Spectropolarimetry of a Solar Internetwork Region. *J. Sánchez Almeida, I. Domínguez Cerdeña, & F. Kneer.* 597, L177 (2003)

Properties of Magnetic and Velocity Fields in and around Solar Pores. *K. Sankarasubramanian & Thomas Rimmele.* 598, 689 (2003)

On the Topological Evolution of the Coronal Magnetic Field During the Solar Cycle. *Y. M. Wang & N. R. Sheeley, Jr.* 599, 1404 (2003)

SUN: PROMINENCES

Improved Estimate of the Magnetic Field in a Prominence. *A. Lopez-Ariste & R. Casini.* 582, L51 (2003)

The Formation of a Prominence in NOAA Active Region 8668. II. *Trace* Observations of Jets and Eruptions Associated with Canceling Magnetic Features. *Jongchul Chae.* 584, 1084 (2003)

Periodic Motion along a Solar Filament Initiated by a Subflare. *Ju Jing, Jeongwoo Lee, Thomas J. Spirock, Yan Xu, Haimin Wang, & G. S. Choe.* 584, L103 (2003)

Prominence Eruptions and Coronal Mass Ejection: A Statistical Study using Microwave Observations. *N. Gopalswamy, M. Shimojo, W. Lu, S. Yashiro, K. Shibasaki, & R. A. Howard.* 586, 562 (2003)

Constraints on the Magnetic Field Geometry in Prominences. *J. T. Karpen, S. K. Antiochos, J. A. Klimchuk, & P. J. MacNeice.* 593, 1187 (2003)

The Mass of a Solar Quiescent Prominence. *B. C. Low, B. Fong, & Y. Fan.* 594, 1060 (2003)

Coronal Mass Ejections and Solar Polarity Reversal. *N. Gopalswamy, A. Lara, S. Yashiro, & R. A. Howard.* 598, L63 (2003)

Magnetic Maps of Prominences from Full Stokes Analysis of the He I D3 Line. *R. Casini, A. López Ariste, S. Tomczyk, & B. W. Lites.* 598, L67 (2003)

SUN: RADIO RADIATION

Optically Thick Gyrosynchrotron Emission from Anisotropic Electron Distributions. *G. D. Fleishman & V. F. Melnikov.* 584, 1071 (2003)

Hα, Extreme-Ultraviolet, and Microwave Observations of the 2000 March 22 Solar Flare and Spontaneous Magnetic Reconnection. *Jeongwoo Lee, Peter T. Gallagher, Dale E. Gary, Gelu M. Nita, G. S. Choe, Su-Chan Bong, & Hong Sik Yun.* 585, 524 (2003)

Prominence Eruptions and Coronal Mass Ejection: A Statistical Study using Microwave Observations. *N. Gopalswamy, M. Shimojo, W. Lu, S. Yashiro, K. Shibasaki, & R. A. Howard.* 586, 562 (2003)

The Effects of Low- and High-Energy Cutoffs on Solar Flare Microwave and Hard X-Ray Spectra. *Gordon D. Holman.* 586, 606 (2003)

Quasi-periodic Pulsations in a Solar Microwave Burst. *V. V. Grechnev, S. M. White, & M. R. Kundu.* 588, 1163 (2003)

Solving the Descrepancy between the Extreme-Ultraviolet and Microwave Observations of the Quiet Sun. *E. Landi & F. Chiuderi Drago.* 589, 1054 (2003)

Constraints on Coronal Mass Ejection Dynamics from Simultaneous Radio and White-Light Observations. *M. J. Reiner, A. Vourlidas, O. C. St. Cyr, J. T. Burkepile, R. A. Howard, M. L. Kaiser, N. P. Prestage, & J.-L. Bougeret.* 590, 533 (2003)

Metric Radio Observations of the Evolution of a "Halo" Coronal Mass Ejection Close to the Sun. *R. Ramesh, C. Kathiravan, & Ch. V. Sastry.* 591, L163 (2003)

Properties of Fast Submillimeter Time Structures during a Large Solar Flare. *Jean-Pierre Raulin, Pierre Kaufmann, Carlos G. Giménez de Castro, Alessandra A. Pacini, Vladimir S. Makhmutov, Hugo Levato, & Marta Rovira.* 592, 580 (2003)

Coronal Structure of a Flaring Region and Associated Coronal Mass Ejection. *P. K. Manoharan & M. R. Kundu.* 592, 597 (2003)

Polarization and Fragmentation of Solar Type II Radio Bursts. *G. Thejappa, P. Zlobec, & R. J. MacDowall.* 592, 1234 (2003)

Decimetric Spike Bursts versus Microwave Continuum. *Gregory D. Fleishman, Dale E. Gary, & Gelu M. Nita.* 593, 571 (2003)

A Model of Zebra Emission in Solar Type IV Radio Bursts. *J. LaBelle, R. A. Treumann, P. H. Yoon, & M. Karlicky.* 593, 1195 (2003)

Radio and Hard X-Ray Images of High-Energy Electrons in an X-Class Solar Flare. *S. M. White, S. Krucker, K. Shibasaki, T. Yokoyama, M. Shimojo, & M. R. Kundu.* 595, L111 (2003)

SUN: ROTATION

Changes in Solar Dynamics from 1995 to 2002. *Sarbani Basu & H. M. Antia.* 585, 553 (2003)

Hot Spots for Solar Flares Persisting for Decades: Longitude Distributions of Flares of Cycles 19–23. *T. Bai.* 585, 1114 (2003)

Temporal Variation of Angular Momentum in the Solar Convection Zone. *R. Komm, R. Howe, B. R. Durney, & F. Hill.* 586, 650 (2003)

Numerical Modeling of the Solar Tachocline. II. Forced Turbulence with Imposed Shear. *Mark S. Miesch.* 586, 663 (2003)

Gravity Wave–driven Flows in the Solar Tachocline. II. Stationary Flows. *Eun-jin Kim & K. B. MacGregor.* 588, 645 (2003)

Time-Series Analysis of Super-Kamiokande Measurements of the Solar Neutrino Flux. *P. A. Sturrock.* 594, 1102 (2003)

Wavelike Properties of Solar Supergranulation Detected in Doppler Shift Data. *J. Schou.* 596, L259 (2003)

The Rotation of the Deep Solar Layers. *S. Couvidat, R. A. García, S. Turck-Chièze, T. Corbard, C. J. Henney, & S. Jiménez-Reyes.* 597, L77 (2003)

SUN: SOLAR-TERRESTRIAL RELATIONS

Our Sun. V. A Bright Young Sun Consistent with Helioseismology and Warm Temperatures on Ancient Earth and Mars. *I.-Juliana Sackmann & Arnold I. Boothroyd.* 583, 1024 (2003)

A New Method for Estimating Widths, Velocities, and Source Location of Halo Coronal Mass Ejections. *G. Michalek, N. Gopalswamy, & S. Yashiro.* 584, 472 (2003)

Toward an ab Initio Theory of the Solar Modulation of Cosmic Rays. *S. Parhi, J. W. Bieber, W. H. Matthaeus, & R. A. Burger.* 585, 502 (2003)

Constraints on Coronal Mass Ejection Dynamics from Simultaneous Radio and White-Light Observations. *M. J. Reiner, A. Vourlidas, O. C. St. Cyr, J. T. Burkepile, R. A. Howard, M. L. Kaiser, N. P. Prestage, & J.-L. Bougeret.* 590, 533 (2003)

On the Fluctuating Component of the Sun's Large-Scale Magnetic Field. *Y.-M. Wang & N. R. Sheeley, Jr.* 590, 1111 (2003)

Modeling the Sun's Large-Scale Magnetic Field during the Maunder Minimum. *Y.-M. Wang & N. R. Sheeley, Jr.* 591, 1248 (2003)

Metric Radio Observations of the Evolution of a "Halo" Coronal Mass Ejection Close to the Sun. *R. Ramesh, C. Kathiravan, & Ch. V. Sastry.* 591, L163 (2003)

Loss Cone Precursors to Forbush Decreases and Advance Warning of Space Weather Effects. *K. Leerungnavarat, D. Ruffolo, & J. W. Bieber.* 593, 587 (2003)

Solar Wind Effects on the Transport of 3–10 MeV Cosmic-Ray Electrons from Solar Minimum to Solar Maximum. *S. E. S. Ferreira, M. S. Potgieter, D. M. Moeketsi, B. Heber, & H. Fichtner.* 594, 552 (2003)

The Magnetic Helicity Budget of Solar Active Regions and Coronal Mass Ejections. *A. Nindos, J. Zhang, & H. Zhang.* 594, 1033 (2003)

Perpendicular Transport of Solar Energetic Particles in Heliospheric Magnetic Fields. *Ming Zhang, J. R. Jokipii, & R. B. McKibben.* 595, 493 (2003)

SUN: SOLAR WIND

Formation of Minor-Ion Charge States in the Fast Solar Wind: Roles of Differential Flow Speeds of Ions of the Same Element. *Y. Chen, R. Esser, & Y. Hu.* 582, 467 (2003)

Identification of Solar Sources of Major Geomagnetic Storms between 1996 and 2000. *J. Zhang, K. P. Dere, R. A. Howard, & V. Bothmer.* 582, 520 (2003)

Voyager 1 and *2* Observations of Magnetic Fields and Associated Cosmic-Ray Variations from 2000 through 2001: 60–87 AU. *L. F. Burlaga, N. F. Ness, F. B. McDonald, J. D. Richardson, & C. Wang.* 582, 540 (2003)

Calcium Abundance in the Solar Wind. *P. Wurz, P. Bochsler, J. A. Paquette, & F. M. Ipavich.* 583, 489 (2003)

Short-Period Magnetic Fluctuations in *Advanced Composition Explorer* Solar Wind Data: Evidence for Anticorrelation with Alfvén Speed. *D. J. Mullan, C. W. Smith, N. F. Ness, & R. M. Skoug.* 583, 496 (2003)

Our Sun. V. A Bright Young Sun Consistent with Helioseismology and Warm Temperatures on Ancient Earth and Mars. *I.-Juliana Sackmann & Arnold I. Boothroyd.* 583, 1024 (2003)

Solar Energetic Particle Production by Coronal Mass Ejection–driven Shocks in Solar Fast-Wind Regions. *S. W. Kahler & D. V. Reames.* 584, 1063 (2003)

Elemental Abundances for the 1996 Streamer Belt. *M. Uzzo, Y.-K. Ko, J. C. Raymond, P. Wurz, & F. M. Ipavich.* 585, 1062 (2003)

Electron Properties and Coulomb Collisions in the Solar Wind at 1 AU: *WIND* Observations. *C. Salem, D. Hubert, C. Lacombe, S. D. Bale, A. Mangeney, D. E. Larson, & R. P. Lin.* 585, 1147 (2003)

Large-Scale Magnetic Field Fluctuations and Development of the 1999–2000 Global Merged Interaction Region: 1–60 AU. *L. F. Burlaga, C. Wang, J. D. Richardson, & N. F. Ness.* 585, 1158 (2003)

WIND Observations of Anomalous Cosmic Rays from Solar Minimum to Maximum. *D. V. Reames & F. B. McDonald.* 586, L99 (2003)

The Solar Wind and Its Magnetic Sources at Sunspot Maximum. *Y.-M. Wang & N. R. Sheeley, Jr.* 587, 818 (2003)

The Nascent Solar Wind: Origin and Acceleration. *Luca Teriaca, Giannina Poletto, Marco Romoli, & Doug A. Biesecker.* 588, 566 (2003)

An Explanation for Large Enhancements of Nitrogen Relative to Carbon and Oxygen in Solar ^{3}He-rich Events. *T. X. Zhang & J. X. Wang.* 588, L57 (2003)

Evidence for a Suprathermal Seed Population of Heavy Ions Accelerated by Interplanetary Shocks near 1 AU. *M. I. Desai, G. M. Mason, J. R. Dwyer, J. E. Mazur, R. E. Gold, S. M. Krimigis, C. W. Smith, & R. M. Skoug.* 588, 1149 (2003)

The Contribution of Polar Plumes to the Fast Solar Wind. *A. H. Gabriel, F. Bely-Dubau, & P. Lemaire.* 589, 623 (2003)

Solar Wind Speed and Temperature outside 10 AU and the Termination Shock. *Y. C. Whang, L. F. Burlaga, Y.-M. Wang, & N. R. Sheeley, Jr.* 589, 635 (2003)

Two-dimensional Magnetohydrodynamic Models of the Solar Corona: Mass Loss from the Streamer Belt. *Eirik Endeve, Egil Leer, & Thomas E. Holzer.* 589, 1040 (2003)

Asterospheric Magnetic Fields and Winds of Cool Stars. *Carolus J. Schrijver, Marc L. DeRosa, & Alan M. Title.* 590, 493 (2003)

SOHO-Ulysses Spring 2000 Quadrature: Coronal Diagnostic Spectrometer and SUMER Results. *S. Parenti, E. Landi, & B. J. I. Bromage.* 590, 519 (2003)

Evolution of Magnetic Fields in Corotating Interaction Regions from 1 to 95 AU: Order to Chaos. *L. F. Burlaga, C. Wang, J. D. Richardson, & N. F. Ness.* 590, 554 (2003)

Cosmic-Ray Spectra at Spherical Termination Shocks. *V. Florinski & J. R. Jokipii.* 591, 454 (2003)

Modeling Shock-accelerated Solar Energetic Particles Coupled to Interplanetary Alfvén Waves. *C. K. Ng, D. V. Reames, & A. J. Tylka.* 591, 461 (2003)

Probing the Edge of the Solar System: Formation of an Unstable Jet-Sheet. *Merav Opher, Paulett C. Liewer, Tamas I. Gombosi, Ward Manchester, Darren L. DeZeeuw, Igor Sokolov, & Gabor Toth.* 591, L61 (2003)

Turbulent Heating of the Distant Solar Wind by Interstellar Pickup Protons. *Philip A. Isenberg, Charles W. Smith, & William H. Matthaeus.* 592, 564 (2003)

Coronal Mass Ejections, the Tail of the Solar Wind Magnetic Field Distribution, and 11 Year Cosmic-Ray Modulation at 1 AU. *E. W. Cliver, A. G. Ling, & I. G. Richardson.* 592, 574 (2003)

Generation of Suprathermal Electrons by Resonant Wave-Particle Interaction in the Solar Corona and Wind. *C. Vocks & G. Mann.* 593, 1134 (2003)

Temporal Evolution of a Streamer Complex: Coronal and in Situ Plasma Parameters. *A. Bemporad, G. Poletto, S. T. Suess, Y.-K. Ko, S. Parenti, P. Riley, M. Romoli, & T. Z. Zurbuchen.* 593, 1146 (2003)

Solar Wind Effects on the Transport of 3–10 MeV Cosmic-Ray Electrons from Solar Minimum to Solar Maximum. *S. E. S. Ferreira, M. S. Potgieter, D. M. Moeketsi, B. Heber, & H. Fichtner.* 594, 552 (2003)

Alfvénic Turbulence in the Extended Solar Corona: Kinetic Effects and Proton Heating. *S. R. Cranmer & A. A. van Ballegooijen.* 594, 573 (2003)

Effects of Interstellar and Solar Wind Ionized Helium on the Interaction of the Solar Wind with the Local Interstellar Medium. *Vlad Izmodenov, Yury G. Malama, George Gloeckler, & Johannes Geiss.* 594, L59 (2003)

A Three-dimensional Model of the Solar Wind Incorporating Solar Magnetogram Observations. *I. I. Roussev, T. I. Gombosi, I. V. Sokolov, M. Velli, W. Manchester IV, D. L. DeZeeuw, P. Liewer, G. Tóth, & J. Luhmann.* 595, L57 (2003)

Helium Abundance in the Corona and Solar Wind: Gyrotropic Modeling from the Chromosphere to 1 AU. *Øystein Lie-Svendsen, Viggo H. Hansteen, & Egil Leer.* 596, 621 (2003)

Magnetohydrodynamic Shock Heating of the Solar Corona. *J. A. Orta, M. A. Huerta, & G. C. Boynton.* 596, 646 (2003)

Helium in Lunar Samples Analyzed by High-Resolution Stepwise Etching: Implications for the Temporal Constancy of Solar Wind Isotopic Composition. *Veronika S. Heber, Heinrich Baur, & Rainer Wieler.* 597, 602 (2003)

Preferential Heating of Particles by H-Cyclotron Waves Generated by a Global Magnetohydrodynamic Mode in Solar Coronal Holes. *T. X. Zhang.* 597, L69 (2003)

Low-Frequency Waves and Turbulence in an Open Magnetic Region: Timescales and Heating Efficiency. *Pablo Dmitruk & William H. Matthaeus.* 597, 1097 (2003)

Far-Ultraviolet Spectra of Fast Coronal Mass Ejections Associated with X-Class Flares. *J. C. Raymond, A. Ciaravella, D. Dobrzycka, L. Strachan, Y.-K. Ko, & M. Uzzo.* 597, 1106 (2003)

Test for Alfvén Wave Signatures in a Solar Coronal Hole. *Thomas G. Moran.* 598, 657 (2003)

The Effect of Proton Temperature Anisotropy on the Solar Minimum Corona and Wind. *Alberto M. Vásquez, Adrian A. van Ballegooijen, & John C. Raymond.* 598, 1361 (2003)

Voyager 2 Measurements in the Outer Heliosphere of the Energy Spectra of Cosmic-Ray Nuclei from Less than 100 MeV Nucleon^{-1} to More than 1.0 GeV Nucleon^{-1}. *W. R. Webber, F. B. McDonald, & A. Lukasiak.* 599, 582 (2003)

Solar Wind Scaling Law. *N. A. Schwadron & D. J. McComas.* 599, 1395 (2003)

SUN: SUNSPOTS

Temporal Behavior of the Evershed Effect. *A. A. Georgakilas & E. B. Christopoulou.* 584, 509 (2003)

Method for Spot Detection on Solar-like Stars. *Adriana V. R. Silva.* 585, L147 (2003)

Magnetoacoustic Waves in Sunspots. *E. V. Khomenko, M. Collados, & L. R. Bellot Rubio.* 588, 606 (2003)

On the Formation of Magnetic Structures by the Combined Action of Velocity Shear and Magnetic Boynancy. *Kelly S. Cline, Nicholas H. Brummell, & Fausto Cattaneo.* 588, 630 (2003)

The Observation of Sunspot Light-Bridge Structure and Dynamics. *T. E. Berger & S. V. Berdyugina.* 589, L117 (2003)

Weak Infrared Molecular Lines Reveal Rapid Outflow in Cool Magnetic Sunspot Penumbral Fibrils. *M. J. Penn, W. D. Cao, S. R. Walton, G. A. Chapman, & W. Livingston.* 590, L119 (2003)

Wavelet Analysis of Umbral Oscillations. *E. B. Christopoulou, A. Skodras, A. A. Georgakilas, & S. Koutchmy.* 591, 416 (2003)

Helioseismic Observation of the Structure and Dynamics of a Rotating Sunspot beneath the Solar Surface. *Junwei Zhao & Alexander G. Kosovichev.* 591, 446 (2003)

Helicity Evolution in Emerging Active Regions. *Alexei A. Pevtsov, Vasily M. Maleev, & Dana W. Longcope.* 593, 1217 (2003)

Detection of a Taylor-like Plasma Relaxation Process in the Sun. *Dibyendu Nandy, Michael Hahn, Richard C. Canfield, & Dana W. Longcope.* 597, L73 (2003)

High Spatial Resolution Observations of Pores and the Formation of a Rudimentary Penumbra. *G. Yang, Y. Xu, H. Wang, & C. Denker.* 597, 1190 (2003)

Waves in the Magnetized Solar Atmosphere. II. Waves from Localized Sources in Magnetic Flux Concentrations. *T. J. Bogdan, M. Carlsson, V. Hansteen, A. McMurray, C. S. Rosenthal, M. Johnson, S. Petty-Powell, E. J. Zita, R. F. Stein, S. W. McIntosh, & Å. Nordlund.* 599, 626 (2003)

SUN: TRANSITION REGION

A Transient Heating Model for Coronal Structure and Dynamics. *D. Spadaro, A. F. Lanza, A. C. Lanzafame, J. T. Karpen, S. K. Antiochos, J. A. Klimchuk, & P. J. MacNeice.* 582, 486 (2003)

Formation of a Sporadic Plasma Jet from a Disrupting Magnetic Flux Tube. *J. I. Sakai, K. Nishi, & I. V. Sokolov.* 584, 1095 (2003)

The Solar Chromosphere/Corona Interface. I. Far-Ultraviolet to Extreme-Ultraviolet Observations and Modeling of Unresolved Coronal Funnels.

Dennis S. Martínez-Galarce, Arthur B. C. Walker II, Troy W. Barbee II, & Richard B. Hoover. 585, 1095 (2003)

Imaging and Spectroscopic Investigations of a Solar Coronal Wave: Properties of the Wave Front and Associated Erupting Material. *Louise K. Harra & Alphonse C. Sterling.* 587, 429 (2003)

Solving the Descrepancy between the Extreme-Ultraviolet and Microwave Observations of the Quiet Sun. *E. Landi & F. Chiuderi Drago.* 589, 1054 (2003)

Atomic Data and Emission-Line Intensities for Ca VII. *E. Landi & A. K. Bhatia.* 589, 1075 (2003)

Correlations on Arcsecond Scales between Chromospheric and Transition Region Emission in Active Regions. *B. De Pontieu, T. Tarbell, & R. Erdélyi.* 590, 502 (2003)

Constraints on Active Region Coronal Heating. *S. K. Antiochos, J. T. Karpen, E. E. DeLuca, L. Golub, & P. Hamilton.* 590, 547 (2003)

Temperature Measurements in the Solar Transition Region Using N III Line Intensity Ratios. *R. Doron, G. A. Doschek, J. M. Laming, U. Feldman, & A. K. Bhatia.* 590, 1121 (2003)

Intensity Oscillations in the Upper Transition Region above Active Region Plage. *B. De Pontieu, R. Erdélyi, & A. G. de Wijn.* 595, L63 (2003)

An Explanation for Non–Power-Law Behavior in the Hard X-Ray Spectrum of the 2002 July 23 Solar Flare. *Eduard P. Kontar, John C. Brown, A. Gordon Emslie, Richard A. Schwartz, David M. Smith, & R. Calum Alexander.* 595, L123 (2003)

Evidence of Flaring in a Transequatorial Loop on the Sun. *Louise K. Harra, Sarah A. Matthews, & Lidia van Driel-Gesztelyi.* 598, L59 (2003)

Coronal Loops Heated by Turbulence-driven Alfvén Waves. *Xing Li & Shadia Rifai Habbal.* 598, L125 (2003)

SUN: UV RADIATION

A Transient Heating Model for Coronal Structure and Dynamics. *D. Spadaro, A. F. Lanza, A. C. Lanzafame, J. T. Karpen, S. K. Antiochos, J. A. Klimchuk, & P. J. MacNeice.* 582, 486 (2003)

Mass Motions and Plasma Properties in the 10^7 K Flare Solar Corona. *E. Landi, U. Feldman, D. E. Innes, & W. Curdt.* 582, 506 (2003)

On the Extreme-Ultraviolet/Ultraviolet Plasma Diagnostics for Nitrogen-like Ions from Spectra Obtained by *SOHO*/SUMER. *A. Mohan, E. Landi, & B. N. Dwivedi.* 582, 1162 (2003)

Hα, Extreme-Ultraviolet, and Microwave Observations of the 2000 March 22 Solar Flare and Spontaneous Magnetic Reconnection. *Jeongwoo Lee, Peter T. Gallagher, Dale E. Gary, Gelu M. Nita, G. S. Choe, Su-Chan Bong, & Hong Sik Yun.* 585, 524 (2003)

The Solar Chromosphere/Corona Interface. I. Far-Ultraviolet to Extreme-Ultraviolet Observations and Modeling of Unresolved Coronal Funnels. *Dennis S. Martínez-Galarce, Arthur B. C. Walker II, Troy W. Barbee II, & Richard B. Hoover.* 585, 1095 (2003)

Chromospheric Evaporation and Warm Rain during a Solar Flare Observed in High Time Resolution with the Coronal Diagnostic Spectrometer aboard the *Solar and Heliospheric Observatory*. *Jeffrey W. Brosius.* 586, 1417 (2003)

Imaging and Spectroscopic Investigations of a Solar Coronal Wave: Properties of the Wave Front and Associated Erupting Material. *Louise K. Harra & Alphonse C. Sterling.* 587, 429 (2003)

The Nascent Solar Wind: Origin and Acceleration. *Luca Teriaca, Giannina Poletto, Marco Romoli, & Doug A. Biesecker.* 588, 566 (2003)

Ultraviolet Spectroscopy of Narrow Coronal Mass Ejections. *D. Dobrzycka, J. C. Raymond, D. A. Biesecker, J. Li, & A. Ciaravella.* 588, 586 (2003)

A New Method to Constrain the Iron Abundance from Cooling Delays in Coronal Loops. *Markus J. Aschwanden, Carolus J. Schrijver, Amy R. Winebarger, & Harry P. Warren.* 588, L49 (2003)

The Contribution of Polar Plumes to the Fast Solar Wind. *A. H. Gabriel, F. Bely-Dubau, & P. Lemaire.* 589, 623 (2003)

Solving the Descrepancy between the Extreme-Ultraviolet and Microwave Observations of the Quiet Sun. *E. Landi & F. Chiuderi Drago.* 589, 1054 (2003)

Correlations on Arcsecond Scales between Chromospheric and Transition Region Emission in Active Regions. *B. De Pontieu, T. Tarbell, & R. Erdélyi.* 590, 502 (2003)

SOHO-Ulysses Spring 2000 Quadrature: Coronal Diagnostic Spectrometer and SUMER Results. *S. Parenti, E. Landi, & B. J. I. Bromage.* 590, 519 (2003)

Constraints on Active Region Coronal Heating. *S. K. Antiochos, J. T. Karpen, E. E. DeLuca, L. Golub, & P. Hamilton.* 590, 547 (2003)

Temperature Measurements in the Solar Transition Region Using N III Line Intensity Ratios. *R. Doron, G. A. Doschek, J. M. Laming, U. Feldman, & A. K. Bhatia.* 590, 1121 (2003)

Non-LTE Model Atmospheres for Late-Type Stars. II. Restricted Non-LTE Calculations for a Solar-like Atmosphere. *Carlos Allende Prieto, Ivan Hubeny, & David L. Lambert.* 591, 1192 (2003)

The Variability of the Solar Coronal Helium Abundance: Polar Coronal Holes Compared to the Quiet Sun. *J. Martin Laming & Uri Feldman.* 591, 1257 (2003)

Properties of Solar Plasmas near Solar Maximum above Two Quiet Regions at Distances of 1.02–1.34 $R_\odot$. *E. Landi & U. Feldman.* 592, 607 (2003)

Solar Coronal Heating and the Magnetic Flux Content of the Network. *D. A. Falconer, R. L. Moore, J. G. Porter, & D. H. Hathaway.* 593, 549 (2003)

Temporal Evolution of a Streamer Complex: Coronal and in Situ Plasma Parameters. *A. Bemporad, G. Poletto, S. T. Suess, Y.-K. Ko, S. Parenti, P. Riley, M. Romoli, & T. Z. Zurbuchen.* 593, 1146 (2003)

Evolving Active Region Loops Observed With the *Transition Region and Coronal Explorer*. I. Observations. *Amy R. Winebarger, Harry P. Warren, & Daniel B. Seaton.* 593, 1164 (2003)

Evolving Active Region Loops Observed with the *Transition Region and Coronal Explorer*. II. Time-Dependent Hydrodynamic Simulations. *Harry P. Warren, Amy R. Winebarger, & John T. Mariska.* 593, 1174 (2003)

Free-Free Emission in the Far-Ultraviolet Spectral Range: A Resource for Diagnosing Solar and Stellar Flare Plasmas. *U. Feldman, E. Landi, G. A. Doschek, I. Dammasch, & W. Curdt.* 593, 1226 (2003)

New Identifications of Mn VII and Fe VIII Lines Belonging to Transitions of the Type $3p^64p$–$3p^64d$ and $3p^53d^2$–$3p^64d$. *J. O. Ekberg & U. Feldman.* 595, 517 (2003)

New Identifications of Mn IV and Fe VII Vacuum Ultraviolet Lines. *J. O. Ekberg & U. Feldman.* 148, 567 (2003)

Physical Parameters of the 2000 February 11 Coronal Mass Ejection: Ultraviolet Spectra versus White-Light Images. *A. Ciaravella, J. C. Raymond, A. van Ballegooijen, L. Strachan, A. Vourlidas, J. Li, J. Chen, & A. Panasyuk.* 597, 1118 (2003)

Empirically Determined Anisotropic Velocity Distributions and Outflows of O^{5+} Ions in a Coronal Streamer at Solar Minimum. *R. A. Frazin, S. R. Cranmer, & J. L. Kohl.* 597, 1145 (2003)

On the Origin of the Basal Emission from Stellar Atmospheres: Analysis of Solar C II Lines. *Philip G. Judge, Mats Carlsson, & Robert F. Stein.* 597, 1158 (2003)

Test for Alfvén Wave Signatures in a Solar Coronal Hole. *Thomas G. Moran.* 598, 657 (2003)

The Effect of Proton Temperature Anisotropy on the Solar Minimum Corona and Wind. *Alberto M. Vásquez, Adrian A. van Ballegooijen, & John C. Raymond.* 598, 1361 (2003)

Observational Tests of Damping by Resonant Absorption in Coronal Loop Oscillations. *Markus J. Aschwanden, Richard W. Nightingale, Jesse Andries, Marcel Goossens, & Tom Van Doorsselaere.* 598, 1375 (2003)

Electron Temperature and Speed Measurements in the Low Solar Corona: Results From the 2001 June Eclipse. *Nelson L. Reginald, O. C. St. Cyr, Joseph M. Davila, & Jeffrey W. Brosius.* 599, 596 (2003)

The Effect of Background Subtraction on the Temperature of EIT Coronal Loops. *J. T. Schmelz, J. E. Beene, K. Nasraoui, H. T. Blevins, P. C. H. Martens, & J. W. Cirtain.* 599, 604 (2003)

Tether-cutting Energetics of a Solar Quiet-Region Prominence Eruption. *Alphonse C. Sterling & Ronald L. Moore.* 599, 1418 (2003)

SUN: X-RAYS, GAMMA RAYS

The Solar Chromosphere/Corona Interface. I. Far-Ultraviolet to Extreme-Ultraviolet Observations and Modeling of Unresolved Coronal Funnels. *Dennis S. Martínez-Galarce, Arthur B. C. Walker II, Troy W. Barbee II, & Richard B. Hoover.* 585, 1095 (2003)

The Long-Term Evolution of AR 7978: The Scalings of the Coronal Plasma Parameters with the Mean Photospheric Magnetic Field. *L. van Driel-Gesztelyi, P. Démoulin, C. H. Mandrini, L. Harra, & J. A. Klimchuk.* 586, 579 (2003)

The Long-Term Evolution of AR 7978: Testing Coronal Heating Models. *P. Démoulin, L. van Driel-Gesztelyi, C. H. Mandrini, J. A. Klimchuk, & L. Harra.* 586, 592 (2003)

The Effects of Low- and High-Energy Cutoffs on Solar Flare Microwave and Hard X-Ray Spectra. *Gordon D. Holman.* 586, 606 (2003)

Variation of X-Ray Bright Point Number over the Solar Activity Cycle. *H. Hara & K. Nakakubo-Marimoto.* 589, 1062 (2003)

Solar Flare Abundances of Potassium, Argon, and Sulphur. *K. J. H. Phillips, J. Sylwester, B. Sylwester, & E. Landi.* 589, L113 (2003)

Fast Magnetic Reconnection via Jets and Current Microsheets. *P. G. Watson & I. J. D. Craig.* 590, L57 (2003)

Spatial and Temporal Properties of Hot and Cool Coronal Loops. *Shin'ichi Nagata, Hirohisa Hara, Ryouhei Kano, Ken Kobayashi, Taro Sakao, Toshifumi Shimizy, Saku Tsuneta, Tsuyoshi Yoshida, & Joseph B. Gurman.* 590, 1095 (2003)

Solar Neutron Event in Association with a Large Solar Flare on 2000 November 24. *K. Watanabe, Y. Muraki, Y. Matsubara, K. Murakami, T. Sako, H. Tsuchiya, S. Masuda, M. Yoshimori, N. Ohmori, P. Miranda, N. Martinic, R. Ticona, A. Velarde, F. Kakimoto, S. Ogio, Y. Tsunesada, H. Tokuno, & Y. Shirasaki.* 592, 590 (2003)

The Effect of the Compton Backscattering Component on the Photon Spectra of Three *Yohkoh*/Hard X-Ray Telescope Flares. *Jian Zhang & Guang Li Huang.* 592, L49 (2003)

An Estimate of the Sun's *ROSAT*-PSPC X-Ray Luminosities Using *SNOE*-SXP Measurements. *Philip G. Judge, Stanley C. Solomon, & Thomas R. Ayres.* 593, 534 (2003)

Magnetohydrodynamic Numerical Simulations of Solar X-Ray Jets Based on the Magnetic Reconnection Model That Includes Chromospheric Evaporation. *Takehiro Miyagoshi & Takaaki Yokoyama.* 593, L133 (2003)

The Evolution of Vector Magnetic Fields in an Emerging Flux Region. *M. Kubo, T. Shimizu, & B. W. Lites.* 595, 465 (2003)

TRACE and *Yohkoh* Observations of a White-Light Flare. *Thomas R. Metcalf, David Alexander, Hugh S. Hudson, & Dana W. Longcope.* 595, 483 (2003)

RHESSI Observations of Particle Acceleration and Energy Release in an Intense Solar Gamma-Ray Line Flare. *R. P. Lin, S. Krucker, G. J. Hurford, D. M. Smith, H. S. Hudson, G. D. Holman, R. A. Schwartz, B. R. Dennis, G. H. Share, R. J. Murphy, A. G. Emslie, C. Johns-Krull, & N. Vilmer.* 595, L69 (2003)

First Gamma-Ray Images of a Solar Flare. *G. J. Hurford, R. A. Schwartz, S. Krucker, R. P. Lin, D. M. Smith, & N. Vilmer.* 595, L77 (2003)

High-Resolution Spectroscopy of Gamma-Ray Lines from the X-Class Solar Flare of 2002 July 23. *D. M. Smith, G. H. Share, R. J. Murphy, R. A. Schwartz, A. Y. Shih, & R. P. Lin.* 595, L81 (2003)

High-Resolution Observation of the Solar Positron-Electron Annihilation Line. *Gerald H. Share, Ronald J. Murphy, Jeffrey G. Skibo, David M. Smith, Hugh S. Hudson, Robert P. Lin, Albert Y. Shih, Brian R. Dennis, Richard A. Schwartz, & Benzion Kozlovsky.* 595, L85 (2003)

Directionality of Flare-accelerated α-Particles at the Sun. *Gerald H. Share, Ronald J. Murphy, David M. Smith, Robert P. Lin, Brian R. Dennis, & Richard A. Schwartz.* 595, L89 (2003)

Physical Implications of *RHESSI* Neutron-Capture Line Measurements. *R. J. Murphy, G. H. Share, X.-M. Hua, R. P. Lin, D. M. Smith, & R. A. Schwartz.* 595, L93 (2003)

Electron Bremsstrahlung Hard X-Ray Spectra, Electron Distributions, and Energetics in the 2002 July 23 Solar Flare. *Gordon D. Holman, Linhui Sui, Richard A. Schwartz, & A. Gordon Emslie.* 595, L97 (2003)

RHESSI Hard X-Ray Imaging Spectroscopy of the Large Gamma-Ray Flare of 2002 July 23. *A. Gordon Emslie, Eduard P. Kontar, Säm Krucker, & Robert P. Lin.* 595, L107 (2003)

An Explanation for Non–Power-Law Behavior in the Hard X-Ray Spectrum of the 2002 July 23 Solar Flare. *Eduard P. Kontar, John C. Brown, A. Gordon Emslie, Richard A. Schwartz, David M. Smith, & R. Calum Alexander.* 595, L123 (2003)

Observations of the Failed Eruption of a Filament. *Haisheng Ji, Haimin Wang, Edward J. Schmahl, Y.-J. Moon, & Yunchun Jiang.* 595, L135 (2003)

Evidence for the Formation of a Large-Scale Current Sheet in a Solar Flare. *Linhui Sui & Gordon D. Holman.* 596, L251 (2003)

What Is the Role of the Kink Instability in Solar Coronal Eruptions? *Robert J. Leamon, Richard C. Canfield, Zachary Blehm, & Alexei A. Pevtsov.* 596, L255 (2003)

Hα and Hard X-Ray Observations of a Two-Ribbon Flare Associated with a Filament Eruption. *M. D. Ding, Q. R. Chen, J. P. Li, & P. F. Chen.* 598, 683 (2003)

The Relationship Between X-Ray Radiance and Magnetic Flux. *Alexei A. Pevtsov, George H. Fisher, Loren W. Acton, Dana W. Longcope, Christopher M. Johns-Krull, Charles C. Kankelborg, & Thomas R. Metcalf.* 598, 1387 (2003)

Flare-Related Magnetic Anomaly with a Sign Reversal. *Jiong Qiu & Dale E. Gary.* 599, 615 (2003)

SURVEYS

SHEEP: The Search for the High-Energy Extragalactic Population. *K. Nandra, I. Georgantopoulos, A. Ptak, & T. J. Turner.* 582, 615 (2003)

CO Luminosity Functions for Far-Infrared– and *B*-Band–selected Galaxies and the First Estimate for $\Omega_{H\,I+H_2}$. *Dusan Keres, Min S. Yun, & J. S. Young.* 582, 659 (2003)

The EXPLORE Project. I. A Deep Search for Transiting Extrasolar Planets. *G. Mallén-Ornelas, S. Seager, H. K. C. Yee, D. Minniti, Michael D. Gladders, G. M. Mallén-Fullerton, & T. M. Brown.* 582, 1123 (2003)

A Search for "Dwarf" Seyfert Nuclei. VI. Properties of Emission-Line Nuclei in Nearby Galaxies. *Luis C. Ho, Alexei V. Filippenko, & Wallace L. W. Sargent.* 583, 159 (2003)

Water Maser Survey toward Low-Mass Young Stellar Objects in the Northern Sky with the Nobeyama 45 Meter Telescope and the Very Large Array. *Ray S. Furuya, Yoshimi Kitamura, Alwyn Wooten, Mark J. Claussen, & Ryohei Kawabe.* 144, 71 (2003)

Search for Point Sources of High-Energy Neutrinos with AMANDA. *J. Ahrens, X. Bai, G. Barouch, S. W. Barwick, R. C. Bay, T. Becka, K.-H. Becker, D. Bertrand, F. Binon, A. Biron, S. Boeser, O. Botner, A. Bouchta, O. Bouhali, T. Burgess, S. Carius, T. Castermans, D. Chirkin, J. Conrad, J. Cooley, D. F. Cowen, A. Davour, C. De Clercq, T. DeYoung, P. Desiati, J.-P. Dewulf, P. Doksus, J. Edsjö, P. Ekström, T. Feser, T. K. Gaisser, M. Gaug, L. Gerhardt, A. Goldschmidt, A. Hallgren, F. Halzen, K. Hanson, R. Hardtke, T. Hauschildt, M. Hellwig, P. Herquet, G. C. Hill, P. O. Hulth, K. Hultqvist, S. Hundertmark, J. Jacobsen, A. Karle, J. Kim, L. Köpke, M. Kowalski, K. Kuehn, J. I. Lamoureux, H. Leich, M. Leuthold, P. Lindahl, J. Madsen, P. Marciniewski, H. Matis, C. P. McParland, T. C. Miller, Y. Minaeva, P. Miocinović, P. C. Mock, R. Morse, T. Neunhöffer, P. Niessen, D. R. Nygren, H. Ögelman, P. Olbrechts, C. Pérez de los Heros, A. C. Pohl, P. B. Price, G. T. Przybylski, K. Rawlins, E. Resconi, W. Rhode, M. Ribordy, S. Richter, J. Rodríguez Martino, P. Romenesko, D. Ross, H.-G. Sander, T. Schmidt, D. Schneider, R. Schwarz, A. Silvestri, M. Solarz, G. M. Spiczak, C. Spiering, D. Steele, P. Steffen, R. G. Stokstad, K.-H. Sulanke, I. Taboada, L. Thollander, S. Tilav, C. Walck, C. Weinheimer, C. H. Wiebusch, C. Wiedemann, R. Wischnewski, H. Wissing, K. Woschnagg, W. Wu, G. Yodh, & S. Young (The AMANDA Collaboration).* 583, 1040 (2003)

The Hawaii+Anglo-Australian Observatory *K*-Band Galaxy Redshift Survey. I. The Local *K*-Band Luminosity Function. *J.-S. Huang, K. Glazebrook, L. L. Cowie, & C. Tinney.* 584, 203 (2003)

Galaxy Star Formation as a Function of Environment in the Early Data Release of the Sloan Digital Sky Survey. *Percy L. Gomez, Robert C. Nichol, Christopher L. Miller, Michael L. Balogh, Tomotsugu Goto, Ann I. Zabludoff, A. Kathy Romer, Mariengela Bernardi, Ravi Sheth, Andrew M. Hopkins, Francisco J. Castander, Andrew J. Connolly, Donald P. Schneider, Jon Brinkmann, Don Q. Lamb, Mark SubbaRao, & Donald G. York.* 584, 210 (2003)

A New Technique for Determining the Number of X-Ray Sources per Flux Density Interval. *A. T. Kenter & S. S. Murray.* 584, 1016 (2003)

Selection of Metal-poor Giant Stars Using the Sloan Digital Sky Survey Photometric System. *Amina Helmi, Željko Ivezić, Francisco Prada, Laura Pentericci, Constance M. Rockosi, Donald P. Schneider, Eva K. Grebel, Daniel Harbeck, Robert H. Lupton, James E. Gunn, Gillian R. Knapp, Michael A. Strauss, & Jonathan Brinkmann.* 586, 195 (2003)

The Las Campanas Infrared Survey. IV. The Photometric Redshift Survey and the Rest-Frame *R*-Band Galaxy Luminosity Function at $0.5 \leq z \leq 1.5$. *Hsiao-Wen Chen, Ronald O. Marzke, Patrick J. McCarthy, P. Martini, R. G. Carlberg, S. E. Persson, A. Bunker, C. R. Bridge, & R. G. Abraham.* 586, 745 (2003)

Cool Companions to White Dwarfs from the Two Micron All-Sky Survey Second Incremental Data Release. *Stefanie Wachter, D. W. Hoard, Kathryn H. Hansen, Rebecca E. Wilcox, Hilda M. Taylor, & Steven L. Finkelstein.* 586, 1356 (2003)

The BIMA Survey of Nearby Galaxies (BIMA SONG). II. The CO Data. *Tamara T. Helfer, Michele D. Thornley, Michael W. Regan, Tony Wong, Kartik Sheth, Stuart N. Vogel, Leo Blitz, & Douglas C.-J. Bock.* 145, 259 (2003)

The Resolved Fraction of the Cosmic X-Ray Background. *A. Moretti, S. Campana, D. Lazzati, & G. Tagliaferri.* 588, 696 (2003)

CO Molecular Gas in Infrared-luminous Galaxies. *Lihong Yao, E. R. Seaquist, Nario Kuno, & Loretta Dunne.* 588, 771 (2003)

Cosmological Constraints from the Evolution of the Cluster Baryon Mass Function at $z \sim 0.5$. *A. Vikhlinin, A. Voevodkin, C. R. Mullis, L. VanSpeybroeck, H. Quintana, B. R. McNamara, I. Gioia, A. Hornstrup, J. P. Henry, W. R. Forman, & C. Jones.* 590, 15 (2003)

The Gamma-Ray Blazar Content of the Northern Sky. *David Sowards-Emmerd, Roger W. Romani, & Peter F. Michelson.* 590, 109 (2003)

A *Hubble Space Telescope*/WFPC2 Snapshot Survey of 2MASS-selected Red QSOs. *Andrew R. Marble, Dean C. Hines, Gary D. Schmidt, Paul S. Smith, Jason A. Surace, Lee Armus, Roc M. Cutri, & Brant O. Nelson.* 590, 707 (2003)

Decline of the Space Density of Quasars between $z = 2$ and $z = 4$. *M. Vigotti, R. Carballo, C. R. Benn, G. De Zotti, R. Fanti, J. I. Gonzalez Serrano, K.-H. Mack, & J. Holt.* 591, 43 (2003)

Envelope Emission in Young Stellar Systems: A Subarcsecond Survey of Circumstellar Structure. *Leslie W. Looney, Lee G. Mundy, & W. J. Welch.* 592, 255 (2003)

Ellipsoidal Variability in the OGLE Planetary Transit Candidates. *E. Sirko & B. Paczyński.* 592, 1217 (2003)

The Incidence of Strong-Lensing Clusters in the Red-Sequence Cluster Survey. *Michael D. Gladders, Henk Hoekstra, H. K. C. Yee, Patrick B. Hall, & L. Felipe Barrientos.* 593, 48 (2003)

The 160 Square Degree *ROSAT* Survey: The Revised Catalog of 201 Clusters with Spectroscopic Redshifts. *C. R. Mullis, B. R. McNamara, H. Quintana, A. Vikhlinin, J. P. Henry, I. M. Gioia, A. Hornstrup, W. Forman, & C. Jones.* 594, 154 (2003)

A *Hubble Space Telescope* Wide Field Planetary Camera 2 Survey for Brown Dwarf Binaries in the α Persei and the Pleiades Open Clusters. *Eduardo L. Martín, David Barrado y Navascués, Isabelle Baraffe, Hervé Bouy, & Scott Dahm.* 594, 525 (2003)

Probing Dark Energy Using Baryonic Oscillations in the Galaxy Power Spectrum as a Cosmological Ruler. *Chris Blake & Karl Glazebrook.* 594, 665 (2003)

The Arecibo 430 MHz Intermediate Galactic Latitude Survey: Discovery of Nine Radio Pulsars. *J. Navarro, S. B. Anderson, & P. C. Freire.* 594, 943 (2003)

K_s Number Counts in the Groth and Coppi Fields. *David Cristóbal-Hornillos, Marc Balcells, Mercedes Prieto, Rafael Guzmán, Jesús Gallego, Nicolás Cardiel, Ángel Serrano, & Roser Pelló.* 595, 71 (2003)

Hubble Space Telescope Imaging in the *Chandra* Deep Field–South. III. Quantitative Morphology of the 1 Million Second *Chandra* Counterparts and Comparison with the Field Population. *N. A. Grogin, A. M. Koekemoer, E. J. Schreier, J. Bergeron, R. Giacconi, G. Hasinger, L. Kewley, C. Norman, P. Rosati, P. Tozzi, & A. Zirm.* 595, 685 (2003)

The Munich Near-Infrared Cluster Survey. II. The *K*-Band Luminosity Function of Field Galaxies to $z \sim 1.2$. *N. Drory, R. Bender, G. Feulner, U. Hopp, C. Maraston, J. Snigula, & G. J. Hill.* 595, 698 (2003)

Classifying X-Ray Sources in External Galaxies from X-Ray Colors. *A. H. Prestwich, J. A. Irwin, R. E. Kilgard, M. I. Krauss, A. Zezas, F. Primini, P. Kaaret, & B. Boroson.* 595, 719 (2003)

The NIRSPEC Brown Dwarf Spectroscopic Survey. I. Low-Resolution Near-Infrared Spectra. *Ian S. McLean, Mark R. McGovern, Adam J. Burgasser, J. Davy Kirkpatrick, L. Prato, & Sungsoo S. Kim.* 596, 561 (2003)

The Serendipitous Extragalactic X-Ray Source Identification Program. I. Characteristics of the Hard X-Ray Sample. *Fiona A. Harrison, Megan E. Eckart, Peter H. Mao, David J. Helfand, & Daniel Stern.* 596, 944 (2003)

Optical Identification of the *ASCA* Medium Sensitivity Survey in the Northern Sky: Nature of Hard X-Ray–Selected Luminous Active Galactic Nuclei. *Masayuki Akiyama, Yoshihiro Ueda, Kouji Ohta, Tadayuki Takahashi, & Toru Yamada.* 148, 275 (2003)

A *Hubble Space Telescope* Survey of Extended [O III] λ5007 Emission in a Far-Infrared Selected Sample of Seyfert Galaxies: Observations. *H. R. Schmitt, J. L. Donley, R. R. J. Antonucci, J. B. Hutchings, & A. L. Kinney.* 148, 327 (2003)

The Environment of Active Galactic Nuclei in the Sloan Digital Sky Survey. *Christopher J. Miller, Robert C. Nichol, Percy L. Gómez, Andrew M. Hopkins, & Mariangela Bernardi.* 597, 142 (2003)

Weak Lensing Discovery and Tomography of a Cluster at $z = 0.68$. *D. Wittman, V. E. Margoniner, J. A. Tyson, J. G. Cohen, A. C. Becker, & I. P. Dell'Antonio.* 597, 218 (2003)

The Nature of Damped Lyα Absorbing Galaxies at $z \leq 1$: A Photometric Redshift Survey of Damped Lyα Absorbers. *Hsiao-Wen Chen & Kenneth M. Lanzetta.* 597, 706 (2003)

A *Hubble Space Telescope* Survey of Extended [O III] λ5007 Emission in a Far-Infrared Selected Sample of Seyfert Galaxies: Results. *H. R. Schmitt, J. L. Donley, R. R. J. Antonucci, J. B. Hutchings, A. L. Kinney, & J. E. Pringle.* 597, 768 (2003)

Multiepoch Sky Surveys and the Lifetime of Quasars. *Paul Martini & Donald P. Schneider.* 597, L109 (2003)

Optical Identification of the *ASCA* Lynx Deep Survey: An Association of Quasi-Stellar Objects and a Supercluster at $z = 1.3$? *Kouji Ohta, Masayuki Akiyama, Yoshihiro Ueda, Toru Yamada, Kouichiro Nakanishi, Gavin B. Dalton, Yashushi Ogasaka, Tsuneo Kii, & Kiyoshi Hayashida.* 598, 210 (2003)

Observing the Dark Matter Density Profile of Isolated Galaxies. *Francisco Prada, Mayrita Vitvitska, Anatoly Klypin, Jon A. Holtzman, David J. Schlegel, Eva K. Grebel, H.-W. Rix, J. Brinkmann, T. A. McKay, & I. Csabai.* 598, 260 (2003)

The *ROSAT* North Ecliptic Pole Survey: The Optical Identifications. *I. M. Gioia, J. P. Henry, C. R. Mullis, H. Böhringer, U. G. Briel, W. Voges, & J. P. Huchra.* 149, 29 (2003)

A Westerbork Synthesis Radio Telescope 1400 and 350 MHz Continuum Survey of the Cygnus OB2 Association, in Search of Hot Massive Stars. *Diah Y. A. Setia Gunawan, A. Ger de Bruyn, Karel A. van der Hucht, & Peredur M. Williams.* 149, 123 (2003)

Cosmological Evolution of the Hard X-Ray Active Galactic Nucleus Luminosity Function and the Origin of the Hard X-Ray Background. *Yoshihiro Ueda, Masayuki Akiyama, Kouji Ohta, & Takamitsu Miyaji.* 598, 886 (2003)

Cosmic Gravitational Shear from the *Hubble Space Telescope* Medium Deep Survey. *Stefano Casertano, Kavan U. Ratnatunga, & Richard E. Griffiths.* 598, L71 (2003)

A *V*-Band Survey for Variable Galactic Nuclei in the Hubble Deep Field. *Vicki L. Sarajedini, Ronald L. Gilliland, & Christina Kasm.* 599, 173 (2003)

The DEEP2 Galaxy Redshift Survey: Spectral Classification of Galaxies at $z \sim 1$. *Darren S. Madgwick, Alison L. Coil, Christopher J. Conselice, Michael C. Cooper, Marc Davis, Richard S. Ellis, Sandy M. Faber, Douglas P. Finkbeiner, Brian Gerke, Puragra Guhathakurta, Nick Kaiser, David C. Koo, Jeffrey A. Newman, Andrew C. Phillips, Charles C. Steidel, Benjamin J. Weiner, Christopher N. A. Willmer, & R. Yan.* 599, 997 (2003)

Infrared Observations of Galaxies in the Local Universe. II. 391 Calibrated Images with Photometric and Structural Measurements. *Albert D. Grauer, Marcia J. Rieke, & Alice C. Quillen.* 149, 327 (2003)

TECHNIQUES: HIGH ANGULAR RESOLUTION

ι Cassiopeiae: Orbit, Masses, and Photometry from Adaptive Optics Imaging in the *I* and *H* Bands. *Jack Drummond, Scott Milster, Patrick Ryan, & Lewis C. Roberts, Jr.* 585, 1007 (2003)

The First Measurement of Spectral Lines in a Short-Period Star Bound to the Galaxy's Central Black Hole: A Paradox of Youth. *A. M. Ghez, G. Duchêne, K. Matthews, S. D. Hornstein, A. Tanner, J. Larkin, M. Morris, E. E. Becklin, S. Salim, T. Kremenek, D. Thompson, B. T. Soifer, G. Neugebauer, & I. McLean.* 586, L127 (2003)

Motions of Isolated *G*-Band Bright Points in the Solar Photosphere. *P. Nisenson, A. A. van Ballegooijen, A. G. de Wijn, & P. Suetterlin.* 587, 458 (2003)

Near-Infrared Interferometric Measurements of Herbig Ae/Be Stars. *J. A. Eisner, B. F. Lane, R. L. Akeson, L. A. Hillenbrand, & A. I. Sargent.* 588, 360 (2003)

Adaptive Optics Spectroscopy of the [Fe II] Outflow from DG Tauri. *Tae-Soo Pyo, Naoto Kobayashi, Masahiko Hayashi, Hiroshi Terada, Miwa Goto, Hideki Takami, Naruhisa Takato, Wolfgang Gaessler, Tomonori Usuda, Takuya Yamashita, Alan T. Tokunaga, Yutaka Hayano, Yukiko Kamata, Masanori Iye, & Yosuke Minowa.* 590, 340 (2003)

Spiderweb Masks for High-Contrast Imaging. *Robert J. Vanderbei, David N. Spergel, & N. Jeremy Kasdin.* 590, 593 (2003)

A Search for Close Binaries in the ρ Ophiuchi Star-forming Region. *M. Barsony, C. Koresko, & K. Matthews.* 591, 1064 (2003)

A *Hubble Space Telescope* Wide Field Planetary Camera 2 Survey for Brown Dwarf Binaries in the α Persei and the Pleiades Open Clusters. *Eduardo L. Martín, David Barrado y Navascués, Isabelle Baraffe, Hervé Bouy, & Scott Dahm.* 594, 525 (2003)

Stellar Dynamics in the Central Arcsecond of Our Galaxy. *R. Schödel, T. Ott, R. Genzel, A. Eckart, N. Mouawad, & T. Alexander.* 596, 1015 (2003)

The Vela Pulsar's Proper Motion and Parallax Derived from VLBI Observations. *R. Dodson, D. Legge, J. E. Reynolds, & P. M. McCulloch.* 596, 1137 (2003)

Detection of Close-In Extrasolar Giant Planets Using the Fourier-Kelvin Stellar Interferometer. *William C. Danchi, Drake Deming, Marc J. Kuchner, & Sara Seager.* 597, L57 (2003)

High Spatial Resolution Observations of Pores and the Formation of a Rudimentary Penumbra. *G. Yang, Y. Xu, H. Wang, & C. Denker.* 597, 1190 (2003)

Spatially Resolved Circumnuclear Dust in Centaurus A. *Margarita Karovska, Massimo Marengo, Martin Elvis, Giovanni G. Fazio, Joseph L. Hora, Philip M. Hinz, William F. Hoffmann, Michael Meyer, & Eric Mamajek.* 598, L91 (2003)

TECHNIQUES: IMAGE PROCESSING

Ground-based Near-Infrared Imaging of the HD 141569 Circumstellar Disk. *A. Boccaletti, J.-C. Augereau, F. Marchis, & J. Hahn.* 585, 494 (2003)

SPINR—a Wide-Field Ultraviolet Spectral Imaging System. *T. A. Cook, V. J. Gsell, J. Golub, & S. Chakrabarti.* 585, 1177 (2003)

The Pleiades Reflection Nebula. I. Ultraviolet, Optical, and Far-Infrared Imaging Photometry. *Steven J. Gibson & Kenneth H. Nordsieck.* 589, 347 (2003)

Refining *Chandra*/ACIS Subpixel Event Repositioning Using a Backside-illuminated CCD Model. *Jingqiang Li, Joel H. Kastner, Gregory Y. Prigozhin, & Norbert S. Schulz.* 590, 586 (2003)

A Fluorescent Aerogel for Capture and Identification of Interplanetary and Interstellar Dust. *Gerardo Domínguez, Andrew J. Westphal, Mark L. F. Phillips, & Steven M. Jones.* 592, 631 (2003)

Realizing Integral Field Spectroscopy in the Far-Infrared. *Leslie W. Looney, Walfried Raab, Albrecht Poglitsch, & Norbert Geis.* 597, 628 (2003)

A Catalog of Bright Filamentary Structures in the Interstellar Medium. *Tom Jackson, Michael Werner, & T. N. Gautier III.* 149, 365 (2003)

TECHNIQUES: INTERFEROMETRIC

Sunyaev-Zeldovich Effect Imaging of MACS Galaxy Clusters at $z > 0.5$. *Samuel J. LaRoque, Marshall Joy, John E. Carlstrom, Harald Ebeling, Massimiliano Bonamente, Kyle S. Dawson, Alastair Edge, William L. Holzapfel, Amber D. Miller, Daisuke Nagai, Sandeep K. Patel, & Erik D. Reese.* 583, 559 (2003)

Speckle Observations of Composite Spectrum Stars. II. Differential Photometry of the Binary Components. *J. L. Prieur, J. M. Carquillat, N. Ginestet, L. Koechlin, A. Lannes, E. Anterrieu, S. Roques, E. Aristidi, & M. Scardia.* 144, 263 (2003)

The Phase Coherence of Light from Extragalactic Sources: Direct Evidence against First-Order Planck-Scale Fluctuations in Time and Space. *Richard Lieu & Lloyd W. Hillman.* 585, L77 (2003)

Interferometric Phase Calibration Sources in the Declination Range 0° to −30°. *Joshua N. Winn, Alok R. Patnaik, & J. M. Wrobel.* 145, 83 (2003)

Very Long Baseline Interferometry Imaging of the RS Canum Venaticorum Binary Star System HR 5110. *R. R. Ransom, N. Bartel, M. F. Bietenholz, M. I. Ratner, D. E. Lebach, I. I. Shapiro, & J.-F. Lestrade.* 587, 390 (2003)

The BIMA Survey of Nearby Galaxies (BIMA SONG). II. The CO Data. *Tamara T. Helfer, Michele D. Thornley, Michael W. Regan, Tony Wong, Kartik Sheth, Stuart N. Vogel, Leo Blitz, & Douglas C.-J. Bock.* 145, 259 (2003)

Interferometry on Mira in the Mid-Infrared; Cyclic Variability of the Continuum Diameter and the Effect of Spectral Lines on Apparent Size. *J. Weiner, D. D. S. Hale, & C. H. Townes.* 588, 1064 (2003)

R Cassiopeiae: Relative Strengths of SiO Masers at 43 and 86 GHz. *R. B. Phillips, A. H. Straughn, S. S. Doeleman, & C. J. Lonsdale.* 588, L105 (2003)

Observational Strategies of Cosmic Microwave Background Temperature and Polarization Interferometry Experiments. *Chan-Gyung Park, Kin-Wang Ng, Changbom Park, Guo-Chin Liu, & Keiichi Umetsu.* 589, 67 (2003)

Bringing Closure to Microlensing Mass Measurement. *Neal Dalal & Benjamin F. Lane.* 589, 199 (2003)

Theoretical Limb Darkening for Classical Cepheids. II. Corrections for the Geometric Baade-Wesselink Method. *Massimo Marengo, Margarita Karovska, Dimitar D. Sasselov, Costas Papaliolios, John T. Armstrong, & Tyler E. Nordgren.* 589, 968 (2003)

Asymptotic Giant Branch and Supergiant Stellar Diameters in the Mid-Infrared. *J. Weiner, D. D. S. Hale, & C. H. Townes.* 589, 976 (2003)

The Anisotropy of the Microwave Background to $l = 3500$: Mosaic Observations with the Cosmic Background Imager. *T. J. Pearson, B. S. Mason, A. C. S. Readhead, M. C. Shepherd, J. L. Sievers, P. S. Udomprasert, J. K. Cartwright, A. J. Farmer, S. Padin, S. T. Myers, J. R. Bond, C. R. Contaldi, U.-L. Pen, S. Prunet, D. Pogosyan, J. E. Carlstrom, J. Kovac, E. M. Leitch, C. Pryke, N. W. Halverson, W. L. Holzapfel, P. Altamirano, L. Bronfman, S. Casassus, J. May, & M. Joy.* 591, 556 (2003)

Probing Planck-Scale Physics with Extragalactic Sources? *Y. Jack Ng, W. A. Christiansen, & H. van Dam.* 591, L87 (2003)

Envelope Emission in Young Stellar Systems: A Subarcsecond Survey of Circumstellar Structure. *Leslie W. Looney, Lee G. Mundy, & W. J. Welch.* 592, 255 (2003)

High-Resolution Broadband Spectroscopy Using an Externally Dispersed Interferometer. *David J. Erskine, Jerry Edelstein, W. Michael Feuerstein, & Barry Welsh.* 592, L103 (2003)

Detection of Close-In Extrasolar Giant Planets Using the Fourier-Kelvin Stellar Interferometer. *William C. Danchi, Drake Deming, Marc J. Kuchner, & Sara Seager.* 597, L57 (2003)

The Measurement of the Light Deflection from Jupiter: Experimental Results. *E. B. Fomalont & S. M. Kopeikin.* 598, 704 (2003)

A Resolved Circumstellar Disk around the Herbig Ae Star HD 00546 in the Thermal Infrared. *Wilson M. Liu, Philip M. Hinz, Michael R. Meyer, Eric E. Mamajek, William F. Hoffman, & Joseph L. Hora.* 598, L111 (2003)

Phase-Referenced Very Long Baseline Array Observations of OH Masers at 4765 MHz. *Patrick Palmer, W. M. Goss, & K. E. Devine.* 599, 323 (2003)

Atmospheric Turbulence Measurements at Mount Wilson Observatory. *Nicholas Short, Walt Fitelson, & Charles H. Townes.* 599, 1469 (2003)

TECHNIQUES: MISCELLANEOUS

Prospects for the Detection of Electromagnetic Counterparts to Gravitational Wave Events. *Julien Sylvestre.* 591, 1152 (2003)

TECHNIQUES: PHOTOMETRIC

The EXPLORE Project. I. A Deep Search for Transiting Extrasolar Planets. *G. Mallén-Ornelas, S. Seager, H. K. C. Yee, D. Minniti, Michael D. Gladders, G. M. Mallén-Fullerton, & T. M. Brown.* 582, 1123 (2003)

CH Cygni. I. Observational Evidence for a Disk-Jet Connection. *J. L. Sokoloski & S. J. Kenyon.* 584, 1021 (2003)

CH Cygni. II. Optical Flickering from an Unstable Disk. *J. L. Sokoloski & S. J. Kenyon.* 584, 1027 (2003)

Near-Field Microlensing and Its Effects on Stellar Transit Observations by *Kepler*. *Kailash C. Sahu & Ronald L. Gilliland.* 584, 1042 (2003)

The Discovery of Two Nearby Carbon Dwarfs. *Patrick J. Lowrance, J. Davy Kirkpatrick, I. Neill Reid, Kelle L. Cruz, & James Liebert.* 584, L95 (2003)

A Unique Solution of Planet and Star Parameters from an Extrasolar Planet Transit Light Curve. *S. Seager & G. Mallén-Ornelas.* 585, 1038 (2003)

Selection of Metal-poor Giant Stars Using the Sloan Digital Sky Survey Photometric System. *Amina Helmi, Željko Ivezić, Francisco Prada, Laura Pentericci, Constance M. Rockosi, Donald P. Schneider, Eva K. Grebel, Daniel Harbeck, Robert H. Lupton, James E. Gunn, Gillian R. Knapp, Michael A. Strauss, & Jonathan Brinkmann.* 586, 195 (2003)

A Method for Simultaneous Determination of A_V and R and Applications. *Jorge R. Ducati, Daiana Ribeiro, & Sandro B. Rembold.* 588, 344 (2003)

Rapid Brightness Fluctuations in Q0957+561A,B: Microlensing or Seeing? *Wesley N. Colley, Irwin I. Shapiro, Jennifer Pegg, Edwin L. Turner, Tomislav Kundić, Karen Loomis, N. C. Hastings, & Russet McMillan.* 588, 711 (2003)

Photometric Redshift Using the Far-Infrared Spectral Energy Distribution. *T. Wiklind.* 588, 736 (2003)

Periodic Flux Variability of Stars Due to the Reflex Doppler Effect Induced by Planetary Companions. *Abraham Loeb & B. Scott Gaudi.* 588, L117 (2003)

Age, Metallicity, and Star Formation History of Cluster Galaxies at $z \sim 0.3$. *P. Merluzzi, F. La Barbera, M. Massarotti, G. Busarello, & M. Capaccioli.* 589, 147 (2003)

Has the Optical Extragalactic Background Light Been Detected? *K. Mattila.* 591, 119 (2003)

The Optical/Near-Infrared Light Curves of SN 2002ap for the First 140 Days after Discovery. *Yuzuru Yoshii, Hiroyuki Tomita, Yukiyasu Kobayashi, Jinsong Deng, Keiichi Maeda, Ken'ichi Nomoto, Paolo A. Mazzali, Hideyuki Umeda, Tsutomu Aoki, Mamoru Doi, Keigo Enya, Takeo Minezaki, Masahiro Suganuma, & Bruce A. Peterson.* 592, 467 (2003)

Finding White Dwarfs with Transit Searches. *Alison J. Farmer & Eric Agol.* 592, 1151 (2003)

Ellipsoidal Variability in the OGLE Planetary Transit Candidates. *E. Sirko & B. Paczyński.* 592, 1217 (2003)

Expected Detection and False Alarm Rates for Transiting Jovian Planets. *Timothy M. Brown.* 593, L125 (2003)

Sensitivity of Transit Searches to Habitable-Zone Planets. *Andrew Gould, Joshua Pepper, & D. L. DePoy.* 594, 533 (2003)

A Search for Small Kuiper Belt Objects by Stellar Occultations. *F. Roques, M. Moncuquet, N. Lavillonière, M. Auvergne, M. Chevreton, F. Colas, & J. Lecacheux.* 594, L63 (2003)

Detecting Reflected Light from Close-in Extrasolar Giant Planets with the *Kepler* Photometer. *Jon M. Jenkins & Laurance R. Doyle.* 595, 429 (2003)

An Extensive Census of *Hubble Space Telescope* Counterparts to *Chandra* X-Ray Sources in the Globular Cluster 47 Tucanae. I. Astrometry and Photometry. *Peter D. Edmonds, Ronald L. Gilliland, Craig O. Heinke, & Jonathan E. Grindlay.* 596, 1177 (2003)

An Extensive Census of *Hubble Space Telescope* Counterparts to *Chandra* X-Ray Sources in the Globular Cluster 47 Tucanae. II. Time Series and Analysis. *Peter D. Edmonds, Ronald L. Gilliland, Craig O. Heinke, & Jonathan E. Grindlay.* 596, 1197 (2003)

Infrared Observations During the Secondary Eclipse of HD 209458b. II. Strong Limits on the Infrared Spectrum near 2.2 Microns. *L. Jeremy Richardson, Drake Deming, & Sara Seager.* 597, 581 (2003)

Color Patterns in the Kuiper Belt: A Possible Primordial Origin. *S. C. Tegler, W. Romanishin, & G. J. Consolmagno, S.J.* 599, L49 (2003)

GRB 011121: A Collimated Outflow into Wind-blown Surroundings. *J. Greiner, S. Klose, M. Salvato, A. Zeh, R. Schwarz, D. H. Hartmann, N. Masetti, B. Stecklum, G. Lamer, N. Lodieu, R. D. Scholz, C. Sterken, J. Gorosabel, I. Burud, J. Rhoads, I. Mitrofanov, M. Litvak, A. Sanin, V. Grinkov, M. I. Andersen, J. M. Castro Cerón, A. J. Castro-Tirado, A. Fruchter, J. U. Fynbo, J. Hjorth, L. Kaper, C. Kouveliotou, E. Palazzi, E. Pian, E. Rol, N. R. Tanvir, P. M. Vreeswijk, R. A. M. J. Wijers, & E. van den Heuvel.* 599, 1223 (2003)

TECHNIQUES: POLARIMETRIC

Rotation Measures of Compact Sources in the Canadian Galactic Plane Survey. *J. C. Brown, A. R. Taylor, & B. J. Jackel.* 145, 213 (2003)

Spectroscopic and Spectropolarimetric Observations of V838 Monocerotis. *John P. Wisniewski, Nancy D. Morrison, Karen S. Bjorkman, Anatoly S. Miroshnichenko, Amanda C. Gault, Jennifer L. Hoffman, Marilyn R. Meade, & Jason M. Nett.* 588, 486 (2003)

Discovery of Highly Dynamic Matter Enhancements along the Polar Axis and Equatorial Plane in the Luminous Blue Variable Binary HD 5980. *A. Villar-Sbaffi, Anthony F. J. Moffat, & N. St-Louis.* 590, 483 (2003)

Spectropolarimetry of SN 2001el in NGC 1448: Asphericity of a Normal Type Ia Supernova. *Lifan Wang, Dietrich Baade, Peter Höflich, Alexei Khokhlov, J. Craig Wheeler, D. Kasen, Peter E. Nugent, Saul Perlmutter, Claes Fransson, & Peter Lundqvist.* 591, 1110 (2003)

Spectropolarimetry of the Type Ic Supernova SN 2002ap in M74: More Evidence for Asymmetric Core Collapse. *Lifan Wang, Dietrich Baade, Peter Höflich, & J. Craig Wheeler.* 592, 457 (2003)

Linear Polarization Measurements of Chromospheric Emission Lines. *N. R. Sheeley, Jr., & C. U. Keller.* 594, 1085 (2003)

Photospheric Magnetic Field Properties of Flaring versus Flare-quiet Active Regions. I. Data, General Approach, and Sample Results. *K. D. Leka & G. Barnes.* 595, 1277 (2003)

Hα Line Polarization in the Major Flare of 2002 July 23. I. Observations and Data Analysis. *N. M. Firstova, Z. Xu, & C. Fang.* 595, L131 (2003)

Evolution of the Inner Circumstellar Envelope of V838 Monocerotis. *J. P. Wisniewski, K. S. Bjorkman, & A. M. Magalhães.* 598, L43 (2003)

Magnetic Fields in Cool Clouds within the Central 50 Parsecs of the Galaxy. *David T. Chuss, Jacqueline A. Davidson, Jessie L. Dotson, C. Darren Dowell, Roger H. Hildebrand, Giles Novak, & John E. Vaillancourt.* 599, 1116 (2003)

TECHNIQUES: RADIAL VELOCITIES

High-Resolution Spectroscopic Follow-up of OGLE Planetary Transit Candidates in the Galactic Bulge: Two Possible Jupiter-Mass Planets and Two Blends. *Maciej Konacki, Guillermo Torres, Dimitar D. Sasselov, & Saurabh Jha.* 597, 1076 (2003)

A Planetary Companion to the G-Type Giant Star HD 104985. *Bun'ei Sato, Hiroyasu Ando, Eiji Kambe, Yoichi Takeda, Hideyuki Izumiura, Seiji Masuda, Etsuji Watanabe, Kunio Noguchi, Setsuko Wada, Norio Okada, Hisashi Koyano, Hideo Maehara, Yuji Norimoto, Takafumi Okada, Yasuhiro Shimizu, Fumihiro Uraguchi, Kenshi Yanagisawa, & Michitoshi Yoshida.* 597, L157 (2003)

The Mass Ratio Distribution in Main-Sequence Spectroscopic Binaries Measured by Infrared Spectroscopy. *T. Mazeh, M. Simon, L. Prato, B. Markus, & S. Zucker.* 599, 1344 (2003)

A Planetary Companion to γ Cephei A. *Artie P. Hatzes, William D. Cochran, Michael Endl, Barbara McArthur, Diane B. Paulson, Gordon A. H. Walker, Bruce Campbell, & Stephenson Yang.* 599, 1383 (2003)

TECHNIQUES: SPECTROSCOPIC

The Kinematics and Physical Conditions of the Ionized Gas in Markarian 509. I. *Chandra* High Energy Grating Spectroscopy. *Tahir Yaqoob, Barry McKernan, Steven B. Kraemer, D. Michael Crenshaw, Jack R. Gabel, Ian M. George, & T. Jane Turner.* 582, 105 (2003)

The Kinematics and Physical Conditions of the Ionized Gas in Markarian 509. II. STIS Echelle Observations. *S. B. Kraemer, D. M. Crenshaw, T. Yaqoob, B. McKernan, J. R. Gabel, I. M. George, T. J. Turner, & J. P. Dunn.* 582, 125 (2003)

Laboratory Precision Measurements of the Rotational Spectrum of $^{12}C^{17}O$ and $^{13}C^{17}O$. *Gabriele Klapper, Leonid Surin, Frank Lewen, Holger S. P. Müller, Igor Pak, & Gisbert Winnewisser.* 582, 262 (2003)

Resolving the Kinematic Distance Ambiguity toward Galactic H II Regions. *Michal A. Kolpak, James M. Jackson, T. M. Bania, D. P. Clemens, & John M. Dickey.* 582, 756 (2003)

Hubble Space Telescope STIS Spectroscopy of the White Dwarfs in the Ultrashort-Period Dwarf Novae VY Aquarii and WX Ceti. *Edward M. Sion, Paula Szkody, Fuhua Cheng, Boris T. Gänsicke, & Steve B. Howell.* 583, 907 (2003)

Accurate Mass Ratio and Heating Effects in the Dual-Line Millisecond Binary Pulsar in NGC 6397. *F. R. Ferraro, E. Sabbi, R. Gratton, A. Possenti, N. D'Amico, A. Bragaglia, & F. Camilo.* 584, L13 (2003)

The First Spatially Resolved Mid-Infrared Spectroscopy of β Pictoris. *A. J. Weinberger, E. E. Becklin, & B. Zuckerman.* 584, L33 (2003)

Infrared Observations during the Secondary Eclipse of HD 209458b. I. 3.6 Micron Occultation Spectroscopy Using the Very Large Telescope. *L. Jeremy Richardson, Drake Deming, Guenter Wiedemann, Cedric Goukenleuque, David Steyert, Joseph Harrington, & Larry W. Esposito.* 584, 1053 (2003)

Spectroscopic Studies of the Solar Corona. IV. Physical Properties of Coronal Structure. *Jagdev Singh, Kiyoshi Ichimoto, Takashi Sakurai, & S. Muneer.* 585, 516 (2003)

X-Ray Spectroscopy of η Carinae with *XMM-Newton*. *Maurice A. Leutenegger, Steven M. Kahn, & Gavin Ramsay.* 585, 1015 (2003)

A Concise New Look at the *l*-Type Spectrum of $H^{12}C^{14}N$. *S. Thorwirth, H. S. P. Müller, F. Lewen, S. Brünken, V. Ahrens, & G. Winnewisser.* 585, L163 (2003)

The First Measurement of Spectral Lines in a Short-Period Star Bound to the Galaxy's Central Black Hole: A Paradox of Youth. *A. M. Ghez, G. Duchêne, K. Matthews, S. D. Hornstein, A. Tanner, J. Larkin, M. Morris, E. E. Becklin, S. Salim, T. Kremenek, D. Thompson, B. T. Soifer, G. Neugebauer, & I. McLean.* 586, L127 (2003)

Experimental Transition Rate of the Green Coronal Line of Fe XIV. *P. Beiersdorfer, E. Träbert, & E. H. Pinnington.* 587, 836 (2003)

Spectroscopic and Spectropolarimetric Observations of V838 Monocerotis. *John P. Wisniewski, Nancy D. Morrison, Karen S. Bjorkman, Anatoly S. Miroshnichenko, Amanda C. Gault, Jennifer L. Hoffman, Marilyn R. Meade, & Jason M. Nett.* 588, 486 (2003)

Keck Spectroscopy of Four Quasi-stellar Object Host Galaxies. *J. S. Miller & A. I. Sheinis.* 588, L9 (2003)

The Complex Hα Line Profile of the Bright Companion to PSR J1740−5340 in NGC 6397. *E. Sabbi, R. Gratton, F. R. Ferraro, A. Bragaglia, A. Possenti, N. D'Amico, & F. Camilo.* 589, L41 (2003)

Temperature Measurements in the Solar Transition Region Using N III Line Intensity Ratios. *R. Doron, G. A. Doschek, J. M. Laming, U. Feldman, & A. K. Bhatia.* 590, 1121 (2003)

Weak Infrared Molecular Lines Reveal Rapid Outflow in Cool Magnetic Sunspot Penumbral Fibrils. *M. J. Penn, W. D. Cao, S. R. Walton, G. A. Chapman, & W. Livingston.* 590, L119 (2003)

A Near-Infrared Spectroscopic Screening of the Red Giant Populations in ω Centauri. *Livia Origlia, Francesco R. Ferraro, Michele Bellazzini, & Elena Pancino.* 591, 916 (2003)

Laboratory Infrared Spectroscopy of Cationic Polycyclic Aromatic Hydrocarbon Molecules. *Jos Oomens, A. G. G. M. Tielens, Boris G. Sartakov, Gert von Helden, & Gerard Meijer.* 591, 968 (2003)

Evidence for a T Tauri Phase in Young Brown Dwarfs. *Ray Jayawardhana, Subhanjoy Mohanty, & Gibor Basri.* 592, 282 (2003)

The Kinematics and Physical Conditions of the Ionized Gas in NGC 4593 from *Chandra* High-Energy Grating Spectroscopy. *Barry McKernan, Tahir Yaqoob, Ian M. George, & T. J. Turner.* 593, 142 (2003)

Spectroscopic Estimate of Surface Gravity for a Planetary Member in the σ Orionis Cluster. *E. L. Martín & M. R. Zapatero Osorio.* 593, L113 (2003)

A Uniform Database of 2.4–45.4 Micron Spectra from the *Infrared Space Observatory* Short Wavelength Spectrometer. *G. C. Sloan, Kathleen E. Kraemer, Stephan D. Price, & Russell F. Shipman.* 147, 379 (2003)

X-Ray Modeling of Very Young Early-Type Stars in the Orion Trapezium: Signatures of Magnetically Confined Plasmas and Evolutionary Implications. *N. S. Schulz, C. Canizares, D. Huenemoerder, & K. Tibbets.* 595, 365 (2003)

Possible Photometric Evidence of Ejection of Bullet-like Features in the Relativistic Jet Source SS 433. *Sandip K. Chakrabarti, S. Pal, A. Nandi, B. G. Anandarao, & Soumen Mondal.* 595, L45 (2003)

The NIRSPEC Brown Dwarf Spectroscopic Survey. I. Low-Resolution Near-Infrared Spectra. *Ian S. McLean, Mark R. McGovern, Adam J. Burgasser, J. Davy Kirkpatrick, L. Prato, & Sungsoo S. Kim.* 596, 561 (2003)

Near-Infrared Spectrophotometry and the CO Emission in V2274 Cygni (Nova Cygni 2001 No. 1). *Richard J. Rudy, William L. Dimpfl, David K. Lynch, S. Mazuk, Catherine C. Venturini, John C. Wilson, R. C. Puetter, & R. Brad Perry.* 596, 1229 (2003)

Realizing Integral Field Spectroscopy in the Far-Infrared. *Leslie W. Looney, Walfried Raab, Albrecht Poglitsch, & Norbert Geis.* 597, 628 (2003)

Circumnulear Structures in the Interacting Seyfert Galaxy of NGC 1241: Kinematics and Optical/Infrared Morphology. *Rubén J. Díaz, Horacio Dottori, Nelson Vera-Villamizar, & Gustavo Carranza.* 597, 860 (2003)

Unveiling the Inner Disk Structure of T Tauri Stars. *James Muzerolle, Nuria Calvet, Lee Hartmann, & Paola D'Alessio.* 597, L149 (2003)

A Long Look at NGC 3783 with the *XMM-Newton* Reflection Grating Spectrometer. *Ehud Behar, Andrew P. Rasmussen, Alexander J. Blustin, Masao Sako, Steven M. Kahn, Jelle S. Kaastra, Graziella Branduardi-Raymont, & Katrien C. Steenbrugge.* 598, 232 (2003)

Remarkable Changes in the Near-Infrared Spectrum of the Nova-like Variable V4332 Sagittarii. *Dipankar P. K. Banerjee, Watson P. Varricatt, Nagarhalli M. Ashok, & Olli Launila.* 598, L31 (2003)

A Warm/Hot Intergalactic Medium toward 3C 120? *Barry McKernan, Tahir Yaqoob, Richard Mushotzky, Ian M. George, & T. Jane Turner.* 598, L83 (2003)

The Ionized Gas and Nuclear Environment in NGC 3783. IV. Variability and Modeling of the 900 Kilosecond *Chandra* Spectrum. *Hagai Netzer, Shai Kaspi, Ehud Behar, W. N. Brandt, Doron Chelouche, Ian M. George, D. Michael Crenshaw, Jack R. Gabel, Frederick W. Hamann, Steven B. Kraemer, Gerard A. Kriss, Kirpal Nandra, Bradley M. Peterson, Joseph C. Shields, & T. J. Turner.* 599, 933 (2003)

High-Precision Stellar Radial Velocities in the Galactic Center. *Donald F. Figer, Diane Gilmore, Sungsoo S. Kim, Mark Morris, E. E. Becklin, Ian S. McLean, Andrea M. Gilbert, James R. Graham, James E. Larkin, N. A. Levenson, & Harry I. Teplitz.* 599, 1139 (2003)

TELESCOPES

The Optical Design and Characterization of the *Microwave Anisotropy Probe*. *L. Page, C. Jackson, C. Barnes, C. Bennett, M. Halpern, G. Hinshaw, N. Jarosik, A. Kogut, M. Limon, S. S. Meyer, D. N. Spergel, G. S. Tucker, D. T. Wilkinson, E. Wollack, & E. L. Wright.* 585, 566 (2003)

First-Year *Wilkinson Microwave Anisotropy Probe* (*WMAP*) Observations: Beam Profiles and Window Functions. *L. Page, C. Barnes, G. Hinshaw, D. N. Spergel, J. L. Weiland, E. Wollack, C. L. Bennett, M. Halpern, N. Jarosik, A. Kogut, M. Limon, S. S. Meyer, G. S. Tucker, & E. L. Wright.* 148, 39 (2003)

TIME

The Phase Coherence of Light from Extragalactic Sources: Direct Evidence against First-Order Planck-Scale Fluctuations in Time and Space. *Richard Lieu & Lloyd W. Hillman.* 585, L77 (2003)

The Lack of Observational Evidence for the Quantum Structure of Spacetime at Planck Scales. *Roberto Ragazzoni, Massimo Turatto, & Wolfgang Gaessler.* 587, L1 (2003)

TURBULENCE

Suppression of Speckle Noise by Speckle Pinning in Adaptive Optics. *E. E. Bloemhof.* 582, L59 (2003)

Turbulence in Accretion Disks: Vorticity Generation and Angular Momentum Transport via the Global Baroclinic Instability. *H. H. Klahr & P. Bodenheimer.* 582, 869 (2003)

Imbalanced Weak Magnetohydrodynamic Turbulence. *Yoram Lithwick & Peter Goldreich.* 582, 1220 (2003)

Large-Scale Turbulence in Molecular Clouds. *Christopher M. Brunt.* 583, 280 (2003)

Structure Function Scaling in the Taurus and Perseus Molecular Cloud Complexes. *Paolo Padoan, Stanislav Boldyrev, William Langer, & Ake Nordlund.* 583, 308 (2003)

Scintillations and Lévy Flights through the Interstellar Medium. *Stanislav Boldyrev & Carl Gwinn.* 584, 791 (2003)

Stability of Standing Accretion Shocks, with an Eye toward Core-Collapse Supernovae. *John M. Blondin, Anthony Mezzacappa, & Christine DeMarino.* 584, 971 (2003)

Doubly Helical Coronal Ejections from Dynamos and Their Role in Sustaining the Solar Cycle. *Eric G. Blackman & Axel Brandenburg.* 584, L99 (2003)

Toward an ab Initio Theory of the Solar Modulation of Cosmic Rays. *S. Parhi, J. W. Bieber, W. H. Matthaeus, & R. A. Burger.* 585, 502 (2003)

The Formation of Massive Stars from Turbulent Cores. *Christopher F. McKee & Jonathan C. Tan.* 585, 850 (2003)

A Holistic Scenario of Turbulent Molecular Cloud Evolution and Control of the Star Formation Efficiency: First Tests. *E. Vázquez-Semadeni, J. Ballesteros-Paredes, & R. S. Klessen.* 585, L131 (2003)

Numerical Modeling of the Solar Tachocline. II. Forced Turbulence with Imposed Shear. *Mark S. Miesch.* 586, 663 (2003)

A Local One-Zone Model of Magnetohydrodynamic Turbulence in Dwarf Nova Disks. *Takayoshi Sano & James M. Stone.* 586, 1297 (2003)

Cosmic-Ray History and Its Implications for Galactic Magnetic Fields. *Ellen G. Zweibel.* 587, 625 (2003)

"Weather" Variability of Close-in Extrasolar Giant Planets. *Kristen Menou, James Y-K. Cho, Sara Seager, & Bradley M. S. Hansen.* 587, L113 (2003)

The Changing Face of the Extrasolar Giant Planet HD 209458b. *Kristen Menou, James Y-K. Cho, Bradley M. S. Hansen, & Sara Seager.* 587, L117 (2003)

Scintillation Caustics in Planetary Occultation Light Curves. *Asantha R. Cooray & J. L. Elliot.* 587, L121 (2003)

The Spectral Correlation Function of Molecular Clouds: A Statistical Test for Theoretical Models. *Paolo Padoan, Alyssa A. Goodman, & Mika Juvela.* 588, 881 (2003)

On the Small-Scale Stability of Thermonuclear Flames in Type Ia Supernovae. *F. K. Roepke, J. C. Niemeyer, & W. Hillenbrandt.* 588, 952 (2003)

Turbulent Pressure in the Envelopes of Yellow Hypergiants and Luminous Blue Variables. *Richard B. Stothers.* 589, 960 (2003)

Thermal Conduction in Magnetized Turbulent Gas. *Jungyeon Cho, A. Lazarian, Albert Honein, Bernard Knaepen, Stavros Kassinos, & Parviz Moin.* 589, L77 (2003)

A Turbulent Origin for Flocculent Spiral Structure in Galaxies. *Bruce G. Elmegreen, Debra Meloy Elmegreen, & Samuel N. Leitner.* 590, 271 (2003)

Images of Astrophysical Masers and Their Variability in a Turbulent Medium: The 25 GHz Methanol Masers. *A. M. Sobolev, W. D. Watson, & V. A. Okorokov.* 590, 333 (2003)

Nonlinear Collisionless Perpendicular Diffusion of Charged Particles. *W. H. Matthaeus, G. Qin, J. W. Bieber, & G. P. Zank.* 590, L53 (2003)

Spectral Properties of Compressible Magnetohydrodynamic Turbulence from Numerical Simulations. *Jason G. Verstuto, Eve C. Ostriker, & James M. Stone.* 590, 858 (2003)

Photoelectric Heating and [C II] Cooling in Translucent Clouds: Results for Cloud Models Based on Simulations of Compressible Magnetohydrodynamic Turbulence. *M. Juvela, P. Padoan, & R. Jimenez.* 591, 258 (2003)

Saturation of the r-Mode Instability. *Phil Arras, Eanna E. Flanagan, Sharon M. Morsink, A. Katrin Schenk, Saul A. Teukolsky, & Ira Wasserman.* 591, 1129 (2003)

Dynamic Cores in Hydrostatic Disguise. *Javier Ballesteros-Paredes, Ralf S. Klessen, & Enrique Vázquez-Semadeni.* 592, 188 (2003)

Turbulent Heating of the Distant Solar Wind by Interstellar Pickup Protons. *Philip A. Isenberg, Charles W. Smith, & William H. Matthaeus.* 592, 564 (2003)

Grain Acceleration by Magnetohydrodynamic Turbulence: Gyroresonance Mechanism. *Huirong Yan & A. Lazarian.* 592, L33 (2003)

Statistics of Velocity from Spectral Data: Modified Velocity Centroids. *A. Lazarian & A. Esquivel.* 592, L37 (2003)

The Formation of Stellar Clusters in Turbulent Molecular Clouds: Effects of the Equation of State. *Yuexing Li, Ralf S. Klessen, & Mordecai-Mark Mac Low.* 592, 975 (2003)

Three-dimensional Magnetohydrodynamic Simulations of Radiatively Inefficient Accretion Flows. *Igor V. Igumenshchev, Ramesh Narayan, & Marek A. Abramowicz.* 592, 1042 (2003)

A Turbulent Origin for Flocculent Spiral Structure in Galaxies. II. Observations and Models of M33. *Bruce G. Elmegreen, Samuel N. Leitner, Debra Meloy Elmegreen, & Jean-Charles Cuillandre.* 593, 333 (2003)

Mechanisms for the Origin of Turbulence in Non–Star-forming Clouds: The Translucent Cloud MBM 40. *Steven N. Shore, Loris Magnani, T. N. LaRosa, & Meredith N. McCarthy.* 593, 413 (2003)

On the Use of Fractional Brownian Motion Simulations to Determine the Three-dimensional Statistical Properties of Interstellar Gas. *M.-A. Miville-Deschênes, F. Levrier, & E. Falgarone.* 593, 831 (2003)

Small-Scale Structure of Low-Density Gas in a Dark Cloud Envelope: Kinematic Evidence for Phase Transition? *Seiichi Sakamoto & Kazuyoshi Sunada.* 594, 340 (2003)

Alfvénic Turbulence in the Extended Solar Corona: Kinetic Effects and Proton Heating. *S. R. Cranmer & A. A. van Ballegooijen.* 594, 573 (2003)

Numerical Study of Compressible Magnetohydrodynamic Turbulence in Two Dimensions. *Hyesook Lee, Dongsu Ryu, Jongsoo Kim, T. W. Jones, & Dinshaw Balsara.* 594, 627 (2003)

Diffusive-Compression Acceleration and Turbulent Diffusion of Cosmic Rays in Quasi-periodic and Turbulent Flows. *G. M. Webb, C. M. Ko, G. P. Zank, & J. R. Jokipii.* 595, 195 (2003)

Ordinary and Viscosity-damped Magnetohydrodynamic Turbulence. *Jungyeon Cho, A. Lazarian, & Ethan T. Vishniac.* 595, 812 (2003)

Intrinsic, Observed, and Retrieved Properties of Interstellar Turbulence. *Christopher M. Brunt, Mark H. Heyer, Enrique Vázquez-Semadeni, & Bárbara Pichardo.* 595, 824 (2003)

Nonlinear Hydromagnetic Wave Support of a Stratified Molecular Cloud. *Takahiro Kudoh & Shantanu Basu.* 595, 842 (2003)

Physical Implications of *RHESSI* Neutron-Capture Line Measurements. *R. J. Murphy, G. H. Share, X.-M. Hua, R. P. Lin, D. M. Smith, & R. A. Schwartz.* 595, L93 (2003)

Black Hole Accretion Disks On The Edge. *Kristen Menou.* 596, 414 (2003)

Turbulent Mixing in Clusters of Galaxies. *Woong-Tae Kim & Ramesh Narayan.* 596, L139 (2003)

The Fate of Nonradiative Magnetized Accretion Flows: Magnetically Frustrated Convection. *Ue-Li Pen, Christopher D. Matzner, & Shingkwong Wong.* 596, L207 (2003)

Wavelike Properties of Solar Supergranulation Detected in Doppler Shift Data. *J. Schou.* 596, L259 (2003)

Test Particle Acceleration in Three-dimensional Magnetohydrodynamic Turbulence. *P. Dmitruk, W. H. Matthaeus, N. Seenu, & M. R. Brown.* 597, L81 (2003)

Low-Frequency Waves and Turbulence in an Open Magnetic Region: Timescales and Heating Efficiency. *Pablo Dmitruk & William H. Matthaeus.* 597, 1097 (2003)

Is Nonhelical Hydromagnetic Turbulence Peaked at Small Scales? *Nils Erlands L. Haugen, Axel Brandenburg, & Wolfgang Dobler.* 597, L141 (2003)

Trapping of Solar Energetic Particles by the Small-Scale Topology of Solar Wind Turbulence. *D. Ruffolo, W. H. Matthaeus, & P. Chuychai.* 597, L169 (2003)

Self-consistent Mean Field Theory in Weakly Ionized Media. *Nicolas Leprovost & Eun-jin Kim.* 598, L99 (2003)

A Viscoelastic Theory of Turbulent Fluid Permeated with Fibril Magnetic Fields. *D. W. Longcope, T. C. B. McLeish, & G. H. Fisher.* 599, 661 (2003)

Anisotropic Turbulence in Two-dimensional Electrom Magnetohydrodynamics. *S. Dastgeer & G. P. Zank.* 599, 715 (2003)

Atmospheric Turbulence Measurements at Mount Wilson Observatory. *Nicholas Short, Walt Fitelson, & Charles H. Townes.* 599, 1469 (2003)

ULTRAVIOLET: GALAXIES

The Kinematics and Physical Conditions of the Ionized Gas in Markarian 509. I. *Chandra* High Energy Grating Spectroscopy. *Tahir Yaqoob, Barry McKernan, Steven B. Kraemer, D. Michael Crenshaw, Jack R. Gabel, Ian M. George, & T. Jane Turner.* 582, 105 (2003)

The Kinematics and Physical Conditions of the Ionized Gas in Markarian 509. II. STIS Echelle Observations. *S. B. Kraemer, D. M. Crenshaw, T. Yaqoob, B. McKernan, J. R. Gabel, I. M. George, T. J. Turner, & J. P. Dunn.* 582, 125 (2003)

What Do the *Hubble Space Telescope* and *Chandra* Tell Us about the Jet and the Nuclear Region of the Radio Galaxy 3C 270? *Marco Chiaberge, Roberto Gilli, F. Duccio Macchetto, William B. Sparks, & Alessandro Capetti.* 582, 645 (2003)

The Ionized Gas and Nuclear Environment in NGC 3783. II. Averaged *Hubble Space Telescope*/STIS and *Far Ultraviolet Spectroscopic Explorer* Spectra. *Jack R. Gabel, D. Michael Crenshaw, Steven B. Kraemer, W. N. Brandt, Ian M. George, Frederick W. Hamann, Mary Elizabeth Kaiser, Shai Kaspi, Gerard A. Kriss, Smita Mathur, Richard F. Mushotzky, Kirpal Nandra, Hagai Netzer, Bradley M. Peterson, Joseph C. Shields, T. J. Turner, & Wei Zheng.* 583, 178 (2003)

Synthetic High-Resolution Line Spectra of Star-forming Galaxies below 1200 Å. *Carmelle Robert, Anne Pellerin, Alessandra Aloisi, Claus Leitherer, Charles Hoopes, & Timothy M. Heckman.* 144, 21 (2003)

Dynamics of the Lyα and C IV Emitting Gas in 3C 273. *Stéphane Paltani & Marc Türler.* 583, 659 (2003)

Far-Ultraviolet Emission from Elliptical Galaxies at $z = 0.33$. *Thomas M. Brown, Henry C. Ferguson, Ed Smith, Charles W. Bowers, Randy A. Kimble, Alvio Renzini, & R. Michael Rich.* 584, L69 (2003)

The Baldwin Effect and Black Hole Accretion: A Spectral Principal Component Analysis of a Complete Quasar Sample. *Zhaohui Shang, Beverley J. Wills, Edward L. Robinson, D. Wills, Ari Laor, Bingrong Xie, & Juntao Yuan.* 586, 52 (2003)

Estimating Star Formation Rates from Infrared and Radio Luminosities: The Origin of the Radio-Infrared Correlation. *Eric F. Bell.* 586, 794 (2003)

Ultraviolet-Optical Pixel Maps of Face-on Spiral Galaxies: Clues for Dynamics and Star Formation Histories. *Paul B. Eskridge, Jay A. Frogel, Violet A. Taylor, Rogier A. Windhorst, Stephen C. Odewahn, Claudia A. T. C. Chiarenza, Christopher J. Conselice, Richard de Grijs, Lynn D. Matthews, Robert W. O'Connell, & John S. Gallagher III.* 586, 923 (2003)

Blue Horizontal-Branch Stars in Old, Metal-rich Stellar Systems. *Ruth C. Peterson, Bruce W. Carney, Ben Dorman, Elizabeth M. Green, Wayne Landsman, James Liebert, Robert W. O'Connell, & Robert T. Rood.* 588, 299 (2003)

Age and Abundance Discrimination in Old Stellar Populations Using Mid-Ultraviolet Colors. *Ben Dorman, Robert W. O'Connell, & Robert T. Rood.* 591, 878 (2003)

Constraints on a Universal Initial Mass Function from Ultraviolet to Near-Infrared Galaxy Luminosity Densities. *Ivan K. Baldry & Karl Glazebrook.* 593, 258 (2003)

Simultaneous Ultraviolet and X-Ray Spectroscopy of the Seyfert 1 Galaxy NGC 5548. I. Physical Conditions in the Ultraviolet Absorbers. *D. M. Crenshaw, S. B. Kraemer, J. R. Gabel, J. S. Kaastra, K. C. Steenbrugge, A. C. Brinkman, J. P. Dunn, I. M. George, D. A. Liedahl, F. B. S. Paerels, T. J. Turner, & T. Yaqoob.* 594, 116 (2003)

The Ionized Gas and Nuclear Environment in NGC 3783. III. Detection of a Decreasing Radial Velocity in an Intrinsic Ultraviolet Absorber. *Jack R. Gabel, D. Michael Crenshaw, Steven B. Kraemer, W. N. Brandt, Ian M. George, Frederick W. Hamann, Mary Elizabeth Kaiser, Shai Kaspi, Gerard A. Kriss, Smita Mathur, Richard F. Mushotzky, Kirpal Nandra, Hagai Netzer, Bradley M. Paterson, Joseph C. Shields, T. J. Turner, & Wei Zheng.* 595, 120 (2003)

The First Deep Advanced Camera for Surveys Lyα Images of Local Starburst Galaxies. *Daniel Kunth, Claus Leitherer, J. Miguel Mas-Hesse, Göran Östlin, & Artashes Petrosian.* 597, 263 (2003)

Chandra Observation of 3C 212: A New Look at the X-Ray and Ultraviolet Absorbers. *T. L. Aldcroft, A. Siemiginowska, M. Elvis, S. Mathur, F. Nicastro, & S. S. Murray.* 597, 751 (2003)

The Internal Ultraviolet–Optical Color Dispersion: Quantifying the Morphological K-Correction. *Casey Papovich, Mauro Giavalisco, Mark Dickinson, Christopher J. Conselice, & Henry C. Ferguson.* 598, 827 (2003)

Lyα Emission in Starbursts: Implications for Galaxies at High Redshift. *J. M. Mas-Hesse, D. Kunth, G. Tenorio-Tagle, C. Leitherer, R. J. Terlevich, & E. Terlevich.* 598, 858 (2003)

A *Hubble Space Telescope* Search for Lyman Continuum Emission from Galaxies at $1.1 < z < 1.4$. *Matthew Malkan, Wayne Webb, & Quinn Konopacky.* 598, 878 (2003)

Occurrence and Global Properties of Narrow C IV λ1549 Å Absorption Lines in Moderate-Redshift Quasars. *M. Vestergaard.* 599, 116 (2003)

X-Ray–Extreme Ultraviolet Simultaneous Observations of NGC 5548: Fast Extreme Ultraviolet Dip without X-Ray Variation. *Y. Haba, H. Kunieda, K. Misaki, Y. Terashima, J. S. Kaastra, R. Mewe, A. C. Fabian, & K. Iwasawa.* 599, 949 (2003)

ULTRAVIOLET: GENERAL

On the Extreme-Ultraviolet/Ultraviolet Plasma Diagnostics for Nitrogen-like Ions from Spectra Obtained by *SOHO*/SUMER. *A. Mohan, E. Landi, & B. N. Dwivedi.* 582, 1162 (2003)

An Atlas of the Intersystem Transitions of CO. *M. Eidelsberg & F. Rostas.* 145, 89 (2003)

Technique for Detecting Warm-Hot Intergalactic Gas in Quasar Ultraviolet Spectra. *Luc Binette, Mario Rodríguez-Martínez, Sinhue Haro-Corzo, & Isidro Ballinas.* 590, 58 (2003)

Accurate Laboratory Wavelengths of the Vacuum Ultraviolet $A(\Upsilon' = 3) - X(\Upsilon'' = 0)$ Band of $^{12}C^{17}O$ and $^{12}C^{18}O$. *Christine Steinmann, Erich G. Rohwer, & Herbert Stafast.* 590, L123 (2003)

New Identifications of Mn IV and Fe VII Vacuum Ultraviolet Lines. *J. O. Ekberg & U. Feldman.* 148, 567 (2003)

Atomic Data for Resonance Absorption Lines. III. Wavelengths Longward of the Lyman Limit for the Elements Hydrogen to Gallium. *Donald C. Morton.* 149, 203 (2003)

ULTRAVIOLET: ISM

Origins of the Highly Ionized Gas along the Line of Sight toward HD 116852. *Andrew J. Fox, Blair D. Savage, Kenneth R. Sembach, Dirk Fabian, Philipp Richter, David M. Meyer, James Lauroesch, & J. Christopher Howk.* 582, 793 (2003)

Far-Ultraviolet Spectra of a Nonradiative Shock Wave in the Cygnus Loop. *John C. Raymond, Parviz Ghavamian, Ravi Sankrit, William P. Blair, & Salvador Curiel.* 584, 770 (2003)

SPINR—a Wide-Field Ultraviolet Spectral Imaging System. *T. A. Cook, V. J. Gsell, J. Golub, & S. Chakrabarti.* 585, 1177 (2003)

A *Far Ultraviolet Spectroscopic Explorer* Survey of Molecular Hydrogen in Intermediate-Velocity Clouds in the Milky Way Halo. *Philipp Richter, Bart P. Wakker, Blair D. Savage, & Kenneth R. Sembach.* 586, 230 (2003)

Ionized Gas in the First 10 Kiloparsecs of the Interstellar Galactic Halo. *J. Christopher Howk, Kenneth R. Sembach, & Blair D. Savage.* 586, 249 (2003)

Highly Ionized Gas in the Galactic Halo: A *FUSE* Survey of O VI Absorption toward 22 Halo Stars. *J. Zsargó, K. R. Sembach, J. C. Howk, & B. D. Savage.* 586, 1019 (2003)

Deuterium toward Two Milky Way Disk Stars: Probing Extended Sight Lines with the *Far Ultraviolet Spectroscopic Explorer*. *Charles G. Hoopes, Kenneth R. Sembach, Guillaume Hébrard, H. Warren Moos, & David C. Knauth.* 586, 1094 (2003)

Far-Ultraviolet and Hα Spectroscopy of SNR 0057−7226 in the Small Magellanic Cloud H II Region N66. *Charles W. Danforth, Ravi Sankrit, William P. Blair, J. Christopher Howk, & You-Hua Chu.* 586, 1179 (2003)

Interstellar Deuterium, Nitrogen, and Oxygen Abundances toward GD 246, WD 2331−475, HZ 21, and Lanning 23: Results from the *FUSE* Mission. *Cristina M. Oliveira, Guillaume Hébrard, J. Christopher Howk, Jeffrey W. Kruk, Pierre Chayer, & H. Warren Moos.* 587, 235 (2003)

Optical and Far-Ultraviolet Spectroscopy of Knot D in the Vela Supernova Remnant. *Ravi Sankrit, William P. Blair, & John C. Raymond.* 589, 242 (2003)

Surprisingly Little O VI Emission Arises in the Local Bubble. *R. L. Shelton.* 589, 261 (2003)

Nonthermal Chemistry in Diffuse Clouds with Low Molecular Abundances. *J. Zsargó & S. R. Federman.* 589, 319 (2003)

The Pleiades Reflection Nebula. I. Ultraviolet, Optical, and Far-Infrared Imaging Photometry. *Steven J. Gibson & Kenneth H. Nordsieck.* 589, 347 (2003)

The *Far Ultraviolet Spectroscopic Explorer* Survey of O VI Absorption in and near the Galaxy. *B. P. Wakker, B. D. Savage, K. R. Sembach, P. Richter, M. Meade, E. B. Jenkins, J. M. Shull, T. B. Ake, W. P. Blair, W. V. Dixon, S. D. Friedman, J. C. Green, R. F. Green, J. W. Kruk, H. W. Moos, E. M. Murphy, W. R. Oegerle, D. J. Sahnow, G. Sonneborn, E. Wilkinson, & D. G. York.* 146, 1 (2003)

Distribution and Kinematics of O VI in the Galactic Halo. *B. D. Savage, K. R. Sembach, B. P. Wakker, P. Richter, M. Meade, E. B. Jenkins, J. M. Shull, H. W. Moos, & G. Sonneborn.* 146, 125 (2003)

Highly Ionized High-Velocity Gas in the Vicinity of the Galaxy. *K. R. Sembach, B. P. Wakker, B. D. Savage, P. Richter, M. Meade, J. M. Shull, E. B. Jenkins, G. Sonneborn, & H. W. Moos.* 146, 165 (2003)

Photodestruction of Relevant Interstellar Molecules in Ice Mixtures. *Hervé Cottin, Marla H. Moore, & Yves Bénilan.* 590, 874 (2003)

Oxygen Gas-Phase Abundance Revisited. *M. K. André, C. M. Oliveira, J. C. Howk, R. Ferlet, J.-M. Désert, G. Hébrard, S. Lacour, A. Lecavelier des Étangs, A. Vidal-Madjar, & H. W. Moos.* 591, 1000 (2003)

A Search for Lyα Emission from the Astrosphere of 40 Eridani A. *Brian E. Wood, Jeffrey L. Linsky, Hans-Reinhard Mueller, & Gary P. Zank.* 591, 1210 (2003)

The Role of Polycyclic Aromatic Hydrocarbons in Ultraviolet Extinction. I. Probing Small Molecular Polycyclic Aromatic Hydrocarbons. *Geoffrey C. Clayton, Karl D. Gordon, F. Salama, L. J. Allamandola, Peter G. Martin, T. P. Snow, D. C. B. Whittet, A. N. Witt, & Michael J. Wolff.* 592, 947 (2003)

On the Origin of the High-Ionization Intermediate-Velocity Gas toward HD 14434. *David C. Knauth, J. Christopher Howk, Kenneth R. Sembach, James T. Lauroesch, & David M. Meyer.* 592, 964 (2003)

A Quantitative Comparison of Small Magellanic Cloud, Large Magellanic Cloud, and Milky Way Ultraviolet to Near-Infrared Extinction Curves. *Karl D. Gordon, Geoffrey C. Clayton, K. A. Misselt, Arlo U. Landolt, & Michael J. Wolff.* 594, 279 (2003)

Far Ultraviolet Spectroscopic Explorer Survey of the Local Interstellar Medium within 200 Parsecs. *N. Lehner, E. B. Jenkins, C. Gry, H. W. Moos, P. Chayer, & S. Lacour.* 595, 858 (2003)

Abundances and Physical Conditions in the Interstellar Gas toward HD 185418. *Paule Sonnentrucker, Scott D. Friedman, Daniel E. Welty, Donald G. York, & Theodore P. Snow.* 596, 350 (2003)

Potential Variations in the Interstellar N I Abundance. *David C. Knauth, B-G Andersson, Stephan R. McCandliss, & H. Warren Moos.* 596, L51 (2003)

The Homogeneity of Interstellar Krypton in the Galactic Disk. *Stefan I. B. Cartledge, David M. Meyer, & J. T. Lauroesch.* 597, 408 (2003)

FUSE Measurements of Rydberg Bands of Interstellar CO between 925 and 1150 Å. *Yaron Sheffer, S. R. Federman, & B.-G. Andersson.* 597, L29 (2003)

Scattering by Interstellar Dust Grains. I. Optical and Ultraviolet. *B. T. Draine.* 598, 1017 (2003)

Scattering by Interstellar Dust Grains. II. X-Rays. *B. T. Draine.* 598, 1026 (2003)

The Deuterium-to-Oxygen Ratio in the Interstellar Medium. *Guillaume Hébrard & H. Warren Moos.* 599, 296 (2003)

ULTRAVIOLET: SOLAR SYSTEM

An S_2 Fluorescence Model for Interpreting High-Resolution Cometary Spectra. I. Model Description and Initial Results. *Celine Reyle & D. C. Boice.* 587, 464 (2003)

ULTRAVIOLET: STARS

System Parameters of DW Ursae Majoris. *S. Araujo-Betancor, C. Knigge, K. S. Long, D. W. Hoard, P. Szkody, B. Rogers, K. Krisciunas, V. S. Dhillon, R. I. Hynes, J. Patterson, & J. Kemp.* 583, 437 (2003)

Space Telescope Imaging Spectrograph Survey of Far-Ultraviolet Coronal Forbidden Lines in Late-Type Stars. *Thomas R. Ayres, Alexander Brown, Graham M. Harper, Rachel A. Osten, Jeffrey L. Linsky, Brian E. Wood, & Seth Redfield.* 583, 963 (2003)

Accretion and Outflow in Interacting Binary Systems: *Far Ultraviolet Spectropscopic Explorer* Observations of the Nova-like Cataclysmic Variable UX Ursae Majoris. *Cynthia S. Froning, Knox S. Long, & Christian Knigge.* 584, 433 (2003)

A *Far Ultraviolet Spectroscopic Explorer* Survey of Coronal Forbidden Lines in Late-Type Stars. *Seth Redfield, Thomas R. Ayres, Jeffrey L. Linsky, Thomas B. Ake, A. K. Dupree, Richard D. Robinson, & Peter R. Young.* 585, 993 (2003)

SPINR—a Wide-Field Ultraviolet Spectral Imaging System. *T. A. Cook, V. J. Gsell, J. Golub, & S. Chakrabarti.* 585, 1177 (2003)

Spectroscopic Identification of White Dwarfs in the New Luyten Two-Tenths Survey. *Stéphane Vennes & Adela Kawka.* 586, L95 (2003)

Spectroscopic Identification of White Dwarfs in the New Luyten Two-Tenths Survey. *Stéphane Vennes & Adela Kawka.* 586, L95 (2003)
The Structure of Stellar Coronae in Active Binary Systems. *J. Sanz-Forcada, N. S. Brickhouse, & A. K. Dupree.* 145, 147 (2003)
Constraints on the Ionization Balance of Hot-Star Winds from *FUSE* Observations of O Stars in the Large Magellanic Cloud. *D. Massa, A. W. Fullerton, G. Sonneborn, & J. B. Hutchings.* 586, 996 (2003)
Blue Horizontal-Branch Stars in Old, Metal-rich Stellar Systems. *Ruth C. Peterson, Bruce W. Carney, Ben Dorman, Elizabeth M. Green, Wayne Landsman, James Liebert, Robert W. O'Connell, & Robert T. Rood.* 588, 299 (2003)
A Tale of Two Stars: The Extreme O7 Iaf+ Supergiant AV 83 and the OC7.5 III((f)) Star AV 69. *D. John Hillier, T. Lanz, S. R. Heap, I. Hubeny, L. J. Smith, C. J. Evans, D. J. Lennon, & J. C. Bouret.* 588, 1039 (2003)
Far Ultraviolet Spectroscopic Explorer Snapshot Survey of O VI Variability in the Winds of 66 OB-Type Stars. *N. Lehner, A. W. Fullerton, D. Massa, K. R. Sembach, & J. Zsargó.* 589, 526 (2003)
The Spatial Distribution of Fluorescent H_2 Emission near T Tauri. *José Saucedo, Nuria Calvet, Lee Hartmann, & John Raymond.* 591, 275 (2003)
A Search for Lyα Emission from the Astrosphere of 40 Eridani A. *Brian E. Wood, Jeffrey L. Linsky, Hans-Reinhard Mueller, & Gary P. Zank.* 591, 1210 (2003)
The Effects of UV Continuum and Lyα Radiation on the Chemical Equilibrium of T Tauri Disks. *Edwin Bergin, Nuria Calvet, Paola D'Alessio, & Gregory J. Herczeg.* 591, L159 (2003)
An Archive of *IUE* Low-Dispersion Spectra of the White Dwarf Stars. *J. B. Holberg, M. A. Barstow, & M. R. Burleigh.* 147, 145 (2003)
Ultraviolet Spectra of Cataclysmic Variable Accretion Disks with Nonsteady $\dot{M}(r)$ Laws. *Jerome A. Orosz & Richard A. Wade.* 593, 1032 (2003)
A Multiwavelength Study of the High-Field Magnetic White Dwarf EUVE J0317−85.5 (=RE J0317−853). *Stéphane Vennes, G. D. Schmidt, L. Ferrario, D. J. Christian, D. T. Wickramasinghe, & A. Kawka.* 593, 1040 (2003)
The Extreme-Ultraviolet Continuum of a Strong Stellar Flare. *D. J. Christian, M. Mathioudakis, D. Jevremović, J. Dupuis, S. Vennes, & A. Kawka.* 593, L105 (2003)
An *IUE* Atlas of Pre–Main-Sequence Stars. III. Co-Added Final Archive Spectra from the Long-Wavelength Cameras. *Jeff A. Valenti, Adam A. Fallon, & Christopher M. Johns-Krull.* 147, 305 (2003)
Far-Ultraviolet Emissions of the Sun in Time: Probing Solar Magnetic Activity and Effects on Evolution of Paleoplanetary Atmospheres. *Edward F. Guinan, Ignasi Ribas, & Graham M. Harper.* 594, 561 (2003)
Hubble Space Telescope STIS Spectrum of RW Aurigae A: Evidence for an Ionized Beltlike Structure and Mass Ejection in Timescales of a Few Hours. *Ana I. Gomez de Castro & Eva Verdugo.* 597, 443 (2003)
Far Ultraviolet Spectroscopic Explorer Observation of the Ultramassive White Dwarf PG 1658+441. *Jean Dupuis, Pierre Chayer, Stéphane Vennes, Nicole F. Allard, & Guillaume Hébrard.* 598, 486 (2003)
Buried Alive in the Coronal Graveyard. *Thomas R. Ayres, Alexander Brown, & Graham M. Harper.* 598, 610 (2003)
A Far-Ultraviolet Survey of 47 Tucanae. II. The Long-Period Cataclysmic Variable AKO 9. *Christian Knigge, David R. Zurek, Michael M. Shara, Knox S. Long, & Ronald L. Gilliland.* 599, 1320 (2003)

WAVES

Does the Energy Supplied to Low-l Solar p-Modes Vary over the Activity Cycle? *W. J. Chaplin, Y. Elsworth, G. R. Isaak, B. A. Miller, R. New, & T. Toutain.* 582, L115 (2003)
The Kuiper Belt as a Resonant Cavity. *William R. Ward.* 584, L39 (2003)
Scintillation Caustics in Planetary Occultation Light Curves. *Asantha R. Cooray & J. L. Elliot.* 587, L121 (2003)
Gravity Wave–driven Flows in the Solar Tachocline. II. Stationary Flows. *Eun-jin Kim & K. B. MacGregor.* 588, 645 (2003)
Time-dependent Ionization in Dynamic Solar and Stellar Atmospheres. I. Methods. *W. Rammacher & P. Ulmschneider.* 589, 988 (2003)
Modeling Shock-accelerated Solar Energetic Particles Coupled to Interplanetary Alfvén Waves. *C. K. Ng, D. V. Reames, & A. J. Tylka.* 591, 461 (2003)
Nonaxisymmetric g-Mode and p-Mode Instability in a Hydrodynamic Thin Accretion Disk. *Li-Xin Li, Jeremy Goodman, & Ramesh Narayan.* 593, 980 (2003)
Generation of Suprathermal Electrons by Resonant Wave-Particle Interaction in the Solar Corona and Wind. *C. Vocks & G. Mann.* 593, 1134 (2003)
Alfvénic Turbulence in the Extended Solar Corona: Kinetic Effects and Proton Heating. *S. R. Cranmer & A. A. van Ballegooijen.* 594, 573 (2003)
Acoustic Heating Models for the Basal Flux Star τ Ceti Including Time-dependent Ionization: Results for Ca II and Mg II Emission. *W. Rammacher & M. Cuntz.* 594, L51 (2003)
Nonlinear Hydromagnetic Wave Support of a Stratified Molecular Cloud. *Takahiro Kudoh & Shantanu Basu.* 595, 842 (2003)
Wavelike Properties of Solar Supergranulation Detected in Doppler Shift Data. *J. Schou.* 596, L259 (2003)
Preferential Heating of Particles by H-Cyclotron Waves Generated by a Global Magnetohydrodynamic Mode in Solar Coronal Holes. *T. X. Zhang.* 597, L69 (2003)
Dusty Molecular Cloud Collapse in the Presence of Alfvén Waves. *D. Falceta-Goncalves, M. C. de Juli, & V. Jatenco-Pereira.* 597, 970 (2003)
Test for Alfvén Wave Signatures in a Solar Coronal Hole. *Thomas G. Moran.* 598, 657 (2003)
Observational Tests of Damping by Resonant Absorption in Coronal Loop Oscillations. *Markus J. Aschwanden, Richard W. Nightingale, Jesse Andries, Marcel Goossens, & Tom Van Doorsselaere.* 598, 1375 (2003)

X-RAYS: BINARIES

X-Ray Emission from the Jets of XTE J1550−564. *P. Kaaret, S. Corbel, J. A. Tomsick, R. Fender, J. M. Miller, J. A. Orosz, T. Tzioumis, & R. Wijnands.* 582, 945 (2003)
Resolving the Effects of Resonant X-Ray Line Scattering in Centaurus X-3 with *Chandra*. *Patrick S. Wojdowski, Duane A. Liedahl, Masao Sako, Steven M. Kahn, & Frederik Paerels.* 582, 959 (2003)
Wind Accretion and State Transitions in Cygnus X-1. *D. R. Gies, C. T. Bolton, J. R. Thomson, W. Huang, M. V. McSwain, R. L. Riddle, Z. Wang, P. J. Wiita, D. W. Wingert, B. Csak, & L. L. Kiss.* 583, 424 (2003)
Chandra and *XMM* Observations of the Accretion Disk Corona Source 0921−63. *T. R. Kallman, L. Angelini, B. Boroson, & J. Cottam.* 583, 861 (2003)
Dynamical Evidence for a Black Hole in GX 339−4. *R. I. Hynes, D. Steeghs, J. Casares, P. A. Charles, & K. O'Brien.* 583, L95 (2003)
XMM-Newton Spectroscopy of the Accretion-driven Millisecond X-Ray Pulsar XTE J1751−305 in Outburst. *J. M. Miller, R. Wijnands, M. Méndez, E. Kendziorra, A. Tiengo, M. van der Klis, D. Chakrabarty, B. M. Gaensler, & W. H. G. Lewin.* 583, L99 (2003)
The Extraordinary X-Ray Light Curve of the Classical Nova V1494 Aquilae (1999 No. 2) in Outburst: The Discovery of Pulsations and a "Burst." *Jeremy J. Drake, R. Mark Wagner, Sumner Starrfield, Yousaf Butt, Joachim Krautter, H. E. Bond, M. Della Valle, R. D. Gehrz, Charles E. Woodward, A. Evans, M. Orio, P. Hauschildt, M. Hernanz, K. Mukai, & J. W. Truran.* 584, 448 (2003)
The Time-variable Ultraluminous X-Ray Sources of "The Antennae." *G. Fabbiano, A. Zezas, A. R. King, T. J. Ponman, A. Rots, & Francois Schweizer.* 584, L5 (2003)
Low-Frequency Coherence Break in the Soft X-Ray State of GRS 1915+105. *Jian Feng Ji, Shuang Nan Zhang, Jin Lu Qu, & Ti Pei Li.* 584, L23 (2003)
Flux Enhancement in the Inner Region of a Geometrically and Optically Thick Accretion Disk. *R. Misra & K. Sriram.* 584, 981 (2003)
XTE J1946+271 = GRO J1944+26: An Enigmatic Be/X-Ray Binary. *Colleen A. Wilson, Mark H. Finger, M. J. Coe, & Ignacio Negueruela.* 584, 996 (2003)
Chandra X-Ray Observations of the Spiral Galaxy M81. *Douglas A. Swartz, Kajal K. Ghosh, Michael L. McCollough, Thomas G. Pannuti, Allyn F. Tennant, & Kinwah Wu.* 144, 213 (2003)
Chandra Studies of the X-Ray Point Source Luminosity Functions of M31. *Albert K. H. Kong, Rosanne DiStefano, Michael R. Garcia, & Jochen Greiner.* 585, 298 (2003)
Diffusive Nuclear Burning in Neutron Star Envelopes. *Philip Chang & Lars Bildsten.* 585, 464 (2003)
X-Ray Source Population in the Elliptical Galaxy NGC 720 with *Chandra*. *Tesla E. Jeltema, Claude R. Canizares, David A. Buote, & Gordon P. Garmire.* 585, 756 (2003)
Two-dimensional Monte Carlo/Fokker-Planck Simulations of Flares in Accretion Disk Corona Models. *M. Böttcher, D. R. Jackson, & E. P. Liang.* 586, 389 (2003)
Two Types of X-Ray Spectra in Cataclysmic Variables. *Koji Mukai, A. Kinkhabwala, J. R. Peterson, S. M. Kahn, & F. Paerels.* 586, L77 (2003)
The Low Mass X-Ray Binary–Globular Cluster Connection. II. NGC 4472 X-Ray Source Properties and Source Catalogs. *Thomas J. Maccarone, Arunav Kundu, & Stephen E. Zepf.* 586, 814 (2003)

Fast X-Ray Transients and Their Connection to Gamma-Ray Bursts. *Vadim A. Arefiev, William C. Priedhorsky, & Konstantin N. Borozdin.* 586, 1238 (2003)

High-Frequency Quasi-Periodic Oscillations in the Black Holes X-Ray Transient XTE J1650−500. *Jeroen Homan, Marc Klein-Wolt, Sabrina Rossi, Jon M. Miller, Rudy Wijnands, Tomaso Belloni, Michiel van der Klis, & Walter H. G. Lewin.* 586, 1262 (2003)

Jet-induced Nucleosynthesis in Misaligned Microquasars. *Yousaf M. Butt, Thomas J. Maccarone, & Nikos Prantzos.* 587, 748 (2003)

Doppler Modulation of X-Ray Lines in Cygnus X-3. *Michael J. Stark & Malinda Saia.* 587, L101 (2003)

X-Ray Studies of Two Neutron Stars in 47 Tucanae: Toward Constraints on the Equation of State. *C. O. Heinke, J. E. Grindlay, D. A. Lloyd, & P. D. Edmonds.* 588, 452 (2003)

Chandra Observation of the X-Ray Source Population of NGC 6946. *S. S. Holt, E. M. Schlegel, U. Hwang, & R. Petre.* 588, 792 (2003)

Role of Shocked Accretion Flows in Regulating the Quasi-Periodic Oscillation of Galactic Black Hole Candidates. *Tapas K. Das.* 588, L89 (2003)

Extended Emission from Cygnus X-3 Detected with *Chandra*. *W. A. Heindl, J. A. Tomsick, R. Wijnands, & D. M. Smith.* 588, L97 (2003)

The Fe XXII $I(11.92\ \text{Å})/I(11.77\ \text{Å})$ Density Diagnostic Applied to the *Chandra* High-Energy Transmission Grating Spectrum of EX Hydrae. *Christopher W. Mauche, Duane A. Liedahl, & Kevin B. Fournier.* 588, L101 (2003)

Neutrinos from Accreting Neutron Stars. *Luis A. Anchordoqui, Diego F. Torres, Thomas P. McCauley, Gustavo E. Romero, & Felix A. Aharonian.* 589, 481 (2003)

Some Constraints on the Effects of Age and Metallicity on the Low-Mass X-Ray Binary Formation Rate. *Arunav Kundu, Thomas J. Maccarone, Stephen E. Zepf, & Thomas H. Puzia.* 589, L81 (2003)

X-Ray Pulses from Accretion Columns: Contributions to the Energy Dependence of the Pulse Shape. *U. Kraus, C. Zahn, C. Weth, & H. Ruder.* 590, 424 (2003)

Discrete X-Ray Signatures of a Photoionized Plasma above the Accretion Disk of the Neutron Star EXO 0748−676. *M. A. Jimenez-Garate, N. S. Schulz, & H. L. Marshall.* 590, 432 (2003)

A Luminous Recurrent Supersoft X-Ray Source in NGC 300. *A. K. H. Kong & R. Di Stefano.* 590, L13 (2003)

The 590 Day Long-Term Periodicity of the Microquasar GRS 1915+105. *A. Rau, J. Greiner, & M. L. McCollough.* 590, L37 (2003)

A *Chandra* X-Ray Study of the Dense Globular Cluster Terzan 5. *C. O. Heinke, P. D. Edmonds, J. E. Grindlay, D. A. Lloyd, H. N. Cohn, & P. M. Lugger.* 590, 809 (2003)

Bowen Flourescence from the Companion Star in X1822−371. *J. Casares, D. Steeghs, R. I. Hynes, P. A. Charles, & K. O'Brien.* 590, 1041 (2003)

A *Chandra* X-Ray Study of NGC 1068. II. The Luminous X-Ray Source Population. *David A. Smith & Andrew S. Wilson.* 591, 138 (2003)

Rayleigh-Taylor Gravity Waves and Quasi-periodic Oscillation Phenomena in X-Ray Binaries. *Lev Titarchuk.* 591, 354 (2003)

Resolved Jets and Long-Period Black Hole X-Ray Novae. *M. R. Garcia, J. M. Miller, J. E. McClintock, A. R. King, & J. Orosz.* 591, 388 (2003)

A Variable Ultraluminous Supersoft X-Ray Source in "The Antennae": Stellar-Mass Black Hole or White Dwarf? *G. Fabbiano, A. R. King, A. Zezas, T. J. Ponman, A. Rots, & François Schweizer.* 591, 843 (2003)

Dynamical Formation of Close Binary Systems in Globular Clusters. *David Pooley, Walter H. G. Lewin, Scott F. Anderson, Holger Baumgardt, Alexei V. Filippenko, Bryan M. Gaensler, Lee Homer, Piet Hut, Victoria M. Kaspi, Junichiro Makino, Bruce Margon, Steve McMillan, Simon Portegies Zwart, Michiel van der Klis, & Frank Verbunt.* 591, L131 (2003)

The X-Ray Spectral Changes of Scorpius X-1. *C. F. Bradshaw, B. J. Geldzahler, & E. B. Fomalont.* 592, 486 (2003)

Chandra Grating Spectroscopy of the X-Ray Binary 4U 1700−37 in a Flaring State. *Bram Boroson, Saeqa Dil Vrtilek, Timothy Kallman, & Michael Corcoran.* 592, 516 (2003)

Luminous Supersoft X-Ray Sources in External Galaxies. *R. Di Stefano & A. K. H. Kong.* 592, 884 (2003)

Spectral and Temporal Behavior of the Black Hole Candidate XTE J1118+480 as Observed with *BeppoSAX*. *F. Frontera, L. Amati, A. A. Zdziarski, T. Belloni, S. Del Sordo, N. Masetti, M. Orlandini, & E. Palazzi.* 592, 1110 (2003)

Correlated Radio:X-Ray Emission in the Hard States of Galactic Microquasars. *M. Choudhury, A. R. Rao, S. V. Vadawale, & A. K. Jain.* 593, 452 (2003)

Nonaxisymmetric *g*-Mode and *p*-Mode Instability in a Hydrodynamic Thin Accretion Disk. *Li-Xin Li, Jeremy Goodman, & Ramesh Narayan.* 593, 980 (2003)

X-Ray Dip Monitoring of XB 1916−053. *T. Narita, J. E. Grindlay, P. F. Bloser, & Y. Chou.* 593, 1007 (2003)

Chandra Observations of the X-Ray–luminous Star-forming Galaxy Merger Arp 299. *A. Zezas, M. J. Ward, & S. S. Murray.* 594, L31 (2003)

A New Method to Resolve X-Ray Halos around Point Sources with *Chandra* Data and Its Application to Cygnus X-1. *Yangsen Yao, Shuang Nan Zhang, Xiaoling Zhang, & Yuxin Feng.* 594, L43 (2003)

A *Chandra* Low Energy Transmission Grating Spectrometer Observation of V4743 Sagittarii: A Supersoft X-Ray Source and a Violently Variable Light Curve. *J.-U. Ness, S. Starrfield, V. Burwitz, R. Wichmann, P. Hauschildt, J. J. Drake, R. M. Wagner, H. E. Bond, J. Krautter, M. Orio, M. Hernanz, R. D. Gehrz, C. E. Woodward, Y. Butt, K. Mukai, S. Balman, & J. W. Truran.* 594, L127 (2003)

Long-Term X-Ray Variability of Circinus X-1. *P. M. Saz Parkinson, D. M. Tournear, E. D. Bloom, W. B. Focke, K. T. Reilly, K. S. Wood, P. S. Ray, M. T. Wolff, & Jeffrey D. Scargle.* 595, 333 (2003)

Low-Mass X-Ray Binaries and Globular Clusters in Early-Type Galaxies. *Craig L. Sarazin, Arunav Kundu, Jimmy A. Irwin, Gregory R. Sivakoff, Elizabeth L. Blanton, & Scott W. Randall.* 595, 743 (2003)

X-Ray Bursts in Neutron Star and Black Hole Binaries from Unconvetional Stellar Aspect Experiment and *Rossi X-Ray Timing Explorer* Data: Detections and Upper Limits. *D. Tournear, E. Raffauf, E. D. Bloom, W. Focke, B. Giebels, G. Godfrey, P. M. Saz Parkinson, K. T. Reilly, K. S. Wood, P. S. Ray, M. T. Wolff, R. M. Bandyopadhyay, M. N. Lovellette, & Jeffrey D. Scargle.* 595, 1058 (2003)

The Coronae of AR Lacertae. *David P. Huenemoerder, Claude R. Canizares, Jeremy J. Drake, & Jorge Sanz-Forcada.* 595, 1131 (2003)

Model for Relaxation Oscillations of a Luminous Accretion Disk in GRS 1915+105: Variable Inner Edge. *Ken-ya Watarai & Shin Mineshige.* 596, 421 (2003)

BeppoSAX Serendipitous Discovery of the X-Ray Pulsar SAX J1802.7−2017. *G. Augello, R. Iaria, N. R. Robba, T. Di Salvo, L. Burderi, G. Lavagetto, & L. Stella.* 596, L63 (2003)

The Atoll Source States of 4U 1608−52. *Steve van Straaten, Michiel van der Klis, & Mariano Méndez.* 596, 1155 (2003)

An Extensive Census of *Hubble Space Telescope* Counterparts to *Chandra* X-Ray Sources in the Globular Cluster 47 Tucanae. I. Astrometry and Photometry. *Peter D. Edmonds, Ronald L. Gilliland, Craig O. Heinke, & Jonathan E. Grindlay.* 596, 1177 (2003)

An Extensive Census of *Hubble Space Telescope* Counterparts to *Chandra* X-Ray Sources in the Globular Cluster 47 Tucanae. II. Time Series and Analysis. *Peter D. Edmonds, Ronald L. Gilliland, Craig O. Heinke, & Jonathan E. Grindlay.* 596, 1197 (2003)

Chandra Observations of the Faintest Low-Mass X-Ray Binaries. *Colleen A. Wilson, Sandeep K. Patel, Chryssa Kouveliotou, Peter G. Jonker, Michiel van der Klis, Walter H. G. Lewin, Tomaso Belloni, & Mariano Méndez.* 596, 1220 (2003)

On Intrinsic Magnetic Moments in Black Hole Candidates. *Stanley L. Robertson & Darryl J. Leiter.* 596, L203 (2003)

Evolution of Hard X-Ray Spectra along the Branches in Circinus X-1. *G. Q. Ding, J. L. Qu, & T. P. Li.* 596, L219 (2003)

X-Ray Variability of the Magnetic Cataclysmic Variable V1432 Aquilae and the Seyfert Galaxy NGC 6814. *K. Mukai, C. Hellier, G. Madejski, J. Patterson, & D. R. Skillman.* 597, 479 (2003)

Detection of a Fully Resolved Compton Shoulder of the Iron Kα Line in the *Chandra* X-Ray Spectrum of GX 301-2. *Shin Watanabe, Masao Sako, Manabu Ishida, Yoshitaka Ishisaki, Steve M. Kahn, Takayoshi Kohmura, Umeyo Morita, Fumiaki Nagase, Frederik Paerels, & Tadayuki Takahashi.* 597, L37 (2003)

Probing with the Inflow/Outflow and Accretion Disk of Cygnus X-1 in High State with the *Chandra* High Energy Transmission Grating. *Y. X. Feng, A. F. Tennant, & S. N. Zhang.* 597, 1017 (2003)

On the Origin of the Various Types of Radio Emission in GRS 1915+105. *S. V. Vadawale, A. R. Rao, S. Naik, J. S. Yadav, C. H. Ishwara-Chandra, A. Pramesh Rao, & G. G. Pooley.* 597, 1023 (2003)

Coronal Element Abundances of the Post–Common-Envelope Binary V471 Tauri with *ASCA*. *Martin Still & Gaitee Hussain.* 597, 1059 (2003)

Theoretical Considerations on the Properties of Accreting Millisecond Pulsars. *Lorne A. Nelson & Saul Rappaport.* 598, 431 (2003)

Discovery of X-Ray Burst Oscillations from a Neutron Star X-Ray Transient in the Globular Cluster NGC 6440. *P. Kaaret, J. J. M. in 't Zand, J. Heise, & J. A. Tomsick.* 598, 481 (2003)

Analysis of the Quiescent Low-Mass X-Ray Binary Populaton in Galactic Globular Clusters. *C. O. Heinke, J. E. Grindlay, P. M. Lugger, H. N. Cohn, P. D. Edmonds, D. A. Lloyd, & A. M. Cool.* 598, 501 (2003)

A *Chandra* X-Ray Study of the Globular Cluster M80. *C. O. Heinke, J. E. Grindlay, P. M. Lugger, H. N. Cohn, P. D. Edmonds, D. A. Lloyd, & S. S. Murray.* 598, 516 (2003)

White Dwarf Donors in Ultracompact Binaries: The Stellar Structure of Finite-Entropy Objects. *Christopher J. Deloye & Lars Bildsten.* 598, 1217 (2003)

Chandra Observations of Low-Mass X-Ray Binaries and Diffuse Gas in the Early-Type Galaxies NGC 4365 and NGC 4382 (M85). *Gregory R. Sivakoff, Craig L. Sarazin, & Jimmy A. Irwin.* 599, 218 (2003)

Thermonuclear Stability of Material Accreting onto a Neutron Star. *Ramesh Narayan & Jeremy S. Heyl.* 599, 419 (2003)

X-Ray Sources with Periodic Variability in a Deep *Chandra* Image of the Galactic Center. *M. P. Muno, F. K. Baganoff, M. W. Bautz, W. N. Brandt, G. P. Garmire, & G. R. Ricker.* 599, 465 (2003)

X-Ray Spectroscopy of the Low-Mass X-Ray Binaries 2S 0918−549 and 4U 1543−624: Evidence for Neon-Rich Degenerate Donors. *Adrienne M. Juett & Deepto Chakrabarty.* 599, 498 (2003)

Magnetic Braking Revisited. *N. Ivanova & Ronald E. Taam.* 599, 516 (2003)

Radio Emission Associated with Ultraluminous X-Ray Sources in the Galaxy Merger NGC 3256. *S. G. Neff, James S. Ulvestad, & S. D. Campion.* 599, 1043 (2003)

X-Ray Point Sources in the Sombrero Galaxy: Supersoft Sources, the Globular Cluster/Low-Mass X-Ray Binary Connection, and an Overview. *R. DiStefano, A. K. H. Kong, M. L. VanDalfsen, W. E. Harris, S. S. Murray, & K. M. Delain.* 599, 1067 (2003)

GRO J0422+32: The Lowest Mass Black Hole? *Dawn M. Gelino & Thomas E. Harrison.* 599, 1254 (2003)

NGC 4261 and NGC 4697: Rejuvenated Elliptical Galaxies. *A. Zezas, L. Hernquist, G. Fabbiano, & J. Miller.* 599, L73 (2003)

X-RAYS: BURSTS

SMC X-1 as an Intermediate-Stage Flaring X-Ray Pulsar. *Dae-Sik Moon, Stephen S. Eikenberry, & Ira M. Wasserman.* 582, L91 (2003)

Photodisintegration-triggered Nuclear Energy Release in Superbursts. *Hendrik Schatz, Lars Bildsten, & Andrew Cumming.* 583, L87 (2003)

Collapsar Uncorking and Jet Eruption in Gamma-Ray Bursts. *E. Waxman & P. Mészáros.* 584, 390 (2003)

The Extraordinary X-Ray Light Curve of the Classical Nova V1494 Aquilae (1999 No. 2) in Outburst: The Discovery of Pulsations and a "Burst." *Jeremy J. Drake, R. Mark Wagner, Sumner Starrfield, Yousaf Butt, Joachim Krautter, H. E. Bond, M. Della Valle, R. D. Gehrz, Charles E. Woodward, A. Evans, M. Orio, P. Hauschildt, M. Hernanz, K. Mukai, & J. W. Truran.* 584, 448 (2003)

New Evidence of Proto-Cyclotron Resonance in a Magnetar Strength Field from SGR 1806−20. *Alaa I. Ibrahim, Jean H. Swank, & William Parke.* 584, L17 (2003)

Fast X-Ray Transients and Their Connection to Gamma-Ray Bursts. *Vadim A. Arefiev, William C. Priedhorsky, & Konstantin N. Borozdin.* 586, 1238 (2003)

The Evolution of LMC X-4 Flares: Evidence for Super Eddington Radiation Oosing through Inhomogeneous Polar Cap Accretion Flows? *Dae-Sik Moon, Stephen S. Eikenberry, & Ira M. Wasserman.* 586, 1280 (2003)

X-Ray Spectroscopy of the Accreting Millisecond Pulsar XTE J0929−314 in Outburst. *Adrienne M. Juett, Duncan K. Galloway, & Deepto Chakrabarty.* 587, 754 (2003)

An Extended Burst Tail from SGR 1900+14 with a Thermal X-Ray Spectrum. *Geoffrey T. Lenters, Peter M. Woods, Johnathan E. Goupell, Chryssa Kouveliotou, Ersin Göğüş, Kevin Hurley, Dmitry Frederiks, Sergey Golenetskii, & Jean Swank.* 587, 761 (2003)

Eddington-limited X-Ray Bursts as Distance Indicators. I. Systematic Trends and Spherical Symmetry in Bursts from 4U 1728−34. *Duncan K. Galloway, Dimitrios Psaltis, Deepto Chakrabarty, & Michael P. Muno.* 590, 999 (2003)

Atomic Spectral Features during Thermonuclear Flashes on Neutron Stars. *Lars Bildsten, Philip Chang, & Frits Paerels.* 591, L29 (2003)

The Bursting Behavior of 4U 1728−34: The Parameters of a Neutron Star and the Geometry of a Neutron Star–Disk System. *Nickolai Shaposhnikov, Lev Titarchuk, & Frank Haberl.* 593, L35 (2003)

On the Enhanced X-Ray Emission from SGR 1900+14 after the August 27 Giant Flare. *Ü. Ertan & M. A. Alpar.* 593, L93 (2003)

Spectral Evolution of the Microquasar XTE J1550−564 over Its Entire 2000 Outburst. *J. Rodriguez, S. Corbel, & J. A. Tomsick.* 595, 1032 (2003)

X-Ray Bursts in Neutron Star and Black Hole Binaries from Unconvetional Stellar Aspect Experiment and *Rossi X-Ray Timing Explorer* Data: Detections and Upper Limits. *D. Tournear, E. Raffauf, E. D. Bloom, W. Focke, B. Giebels, G. Godfrey, P. M. Saz Parkinson, K. T. Reilly, K. S. Wood, P. S. Ray, M. T. Wolff, R. M. Bandyopadhyay, M. N. Lovellette, & Jeffrey D. Scargle.* 595, 1058 (2003)

The Energy Dependence of Millisecond Oscillations in Thermonuclear X-Ray Bursts. *Michael P. Muno, Feryal Oezel, & Deepto Chakrabarty.* 595, 1066 (2003)

Models of Type I X-Ray Bursts from 4U 1820−30. *Andrew Cumming.* 595, 1077 (2003)

The 2001 April Burst Activation of SGR 1900+14: Pulse Properties and Torque. *P. M. Woods, C. Kouveliotou, E. Göğüş, M. H. Finger, M. Feroci, S. Mereghetti, J. H. Swank, K. Hurley, J. Heise, D. Smith, F. Frontera, C. Guidorzi, & C. Thompson.* 596, 464 (2003)

The 2001 April Burst Activation of SGR 1900+14: X-Ray Afterglow Emission. *M. Feroci, S. Mereghetti, P. Woods, C. Kouveliotou, E. Costa, D. D. Frederiks, S. V. Golenetskii, K. Hurley, E. Mazets, P. Soffitta, & M. Tavani.* 596, 470 (2003)

X-Ray Bursts from the Accreting Millisecond Pulsar XTE J1814−338. *Tod E. Strohmayer, Craig B. Markwardt, Jean H. Swank, & Jean in 't Zand.* 596, L67 (2003)

The X-Ray Binary GRS 1741.9−2853 in Outburst and Quiescence. *M. P. Muno, F. K. Baganoff, & J. S. Arabadjis.* 598, 474 (2003)

Thermonuclear Stability of Material Accreting onto a Neutron Star. *Ramesh Narayan & Jeremy S. Heyl.* 599, 419 (2003)

The First Two Host Galaxies of X-Ray Flashes: XRF 011030 and XRF 020427. *J. S. Bloom, D. Fox, P. G. van Dokkum, S. R. Kulkarni, E. Berger, S. G. Djorgovski, & D. A. Frail.* 599, 957 (2003)

X-RAYS: DIFFUSE BACKGROUND

Chandra Spectra of the Soft X-Ray Diffuse Background. *M. Markevitch, M. W. Bautz, B. Biller, Y. Butt, R. Edgar, T. Gaetz, G. Garmine, C. E. Grant, P. Green, M. Juda, P. P. Plucinsky, D. Schwartz, R. Smith, A. Vikhlinin, S. Virani, B. J. Wargelin, & S. Wolk.* 583, 70 (2003)

Imaging Large-Scale Structure in the X-Ray Sky. *Yuxuan Yang, R. F. Mushotzky, A. J. Barger, L. L. Cowie, D. B. Sanders, & A. T. Steffen.* 585, L85 (2003)

A *Chandra* Minisurvey of X-Ray–weak Quasars. *G. Risaliti, M. Elvis, R. Gilli, & M. Salvati.* 587, L9 (2003)

Diffuse X-Ray Emission from M101. *K. D. Kuntz, S. L. Snowden, W. D. Pence, & K. Mukai.* 588, 264 (2003)

The Resolved Fraction of the Cosmic X-Ray Background. *A. Moretti, S. Campana, D. Lazzati, & G. Tagliaferri.* 588, 696 (2003)

Measuring Feedback Using the Intergalactic Medium State and Evolution Inferred from the Soft X-Ray Background. *Pengjie Zhang & Ue-Li Pen.* 588, 704 (2003)

Autocorrelation Function of the Soft X-Ray Background Produced by Warm-Hot Gas in Dark Halos. *Xiang-Ping Wu & Yan-Jie Xue.* 590, 8 (2003)

Optical Identification of the *ASCA* Medium Sensitivity Survey in the Northern Sky: Nature of Hard X-Ray–Selected Luminous Active Galactic Nuclei. *Masayuki Akiyama, Yoshihiro Ueda, Kouji Ohta, Tadayuki Takahashi, & Toru Yamada.* 148, 275 (2003)

Cosmological Evolution of the Hard X-Ray Active Galactic Nucleus Luminosity Function and the Origin of the Hard X-Ray Background. *Yoshihiro Ueda, Masayuki Akiyama, Kouji Ohta, & Takamitsu Miyaji.* 598, 886 (2003)

X-RAYS: GALAXIES

Tracing the Warm-Hot Intergalactic Medium at Low Redshift: X-Ray Forest Observations toward H1821+643. *Smita Mathur, David H. Weinberg, & Xuelei Chen.* 582, 82 (2003)

The X-Ray Spectrum of the Seyfert I Galaxy Markarian 766: Dusty Warm Absorber or Relativistic Emission Lines? *K. O. Mason, G. Branduardi-Raymont, P. M. Ogle, M. J. Page, E. M. Puchnarewicz, E. Behar, F. A. Córdova, S. Davis, L. Maraschi, I. M. McHardy, P. T. O'Brien, W. C. Priedhorsky, & T. P. Sasseen.* 582, 95 (2003)

The Kinematics and Physical Conditions of the Ionized Gas in Markarian 509. I. *Chandra* High Energy Grating Spectroscopy. *Tahir Yaqoob, Barry*

McKernan, Steven B. Kraemer, D. Michael Crenshaw, Jack R. Gabel, Ian M. George, & T. Jane Turner. 582, 105 (2003)

The Kinematics and Physical Conditions of the Ionized Gas in Markarian 509. II. STIS Echelle Observations. *S. B. Kraemer, D. M. Crenshaw, T. Yaqoob, B. McKernan, J. R. Gabel, I. M. George, T. J. Turner, & J. P. Dunn.* 582, 125 (2003)

Accretion onto the Supermassive Black Hole in M87. *Tiziana Di Matteo, Steven W. Allen, Andrew C. Fabian, Andrew S. Wilson, & Andrew J. Young.* 582, 133 (2003)

Chandra Observation of Luminous and Ultraluminous X-Ray Binaries in M101. *K. Mukai, W. D. Pence, S. L. Snowden, & K. D. Kuntz.* 582, 184 (2003)

Discovery of a Binary Active Galaxy Nucleus in the Ultraluminous Infrared Galaxy NGC 6240 Using *CHANDRA*. *S. Komossa, V. Burwitz, G. Hasinger, P. Predehl, J. S. Kaastra, & Y. Ikebe.* 582, L15 (2003)

SHEEP: The Search for the High-Energy Extragalactic Population. *K. Nandra, I. Georgantopoulos, A. Ptak, & T. J. Turner.* 582, 615 (2003)

The *ASCA* X-Ray Spectrum of Arp 102B and Evaluation of Simple Models for Its Associated, Metastable Fe II Absorber. *Michael Eracleous, Jules P. Halpern, & Jane C. Charlton.* 582, 633 (2003)

What Do the *Hubble Space Telescope* and *Chandra* Tell Us about the Jet and the Nuclear Region of the Radio Galaxy 3C 270? *Marco Chiaberge, Roberto Gilli, F. Duccio Macchetto, William B. Sparks, & Alessandro Capetti.* 582, 645 (2003)

1WGA J1216.9+3743: *Chandra* Finds an Extremely Steep Ultraluminous X-Ray Source. *I. Cagnoni, R. Turolla, A. Treaves, J.-S. Huang, D. W. Kim, M. Elvis, & A. Celotti.* 582, 654 (2003)

Chandra Snapshot Observations of Low-Luminosity Active Galactic Nuclei with a Compact Radio Source. *Yuichi Terashima & Andrew S. Wilson.* 583, 145 (2003)

The Effect of Radiative Cooling on the Sunyaev-Zeldovich Cluster Counts and Angular Power Spectra: Analytic Treatment. *Yu-Ying Zhang & Xiang-Ping Wu.* 583, 529 (2003)

A *BeppoSAX* Observation of the IC 1262 Galaxy Cluster. *Daniel S. Hudson, Mark J. Henriksen, & Sergio Colafrancesco.* 583, 706 (2003)

X-Ray Luminous Galaxies. I. *Chandra* Observations of IRAS 00317−2142. *I. Georgantopoulos, A. Zezas, & M. J. Ward.* 584, 129 (2003)

Implications of Variability Patterns Observed in TeV Blazars on the Structure of the Inner Jet. *Chiharu Tanihata, Tadayuki Takahashi, Jun Kataoka, & Greg M. Medejski.* 584, 153 (2003)

The Time-variable Ultraluminous X-Ray Sources of "The Antennae." *G. Fabbiano, A. Zezas, A. R. King, T. J. Ponman, A. Rots, & Francois Schweizer.* 584, L5 (2003)

Soft X-Ray Excess Emission in Clusters of Galaxies Observed with *XMM-Newton*. *J. Nevalainen, R. Lieu, M. Bonamente, & D. Lumb.* 584, 716 (2003)

A New Technique for Determining the Number of X-Ray Sources per Flux Density Interval. *A. T. Kenter & S. S. Murray.* 584, 1016 (2003)

Correlated Long-Term Optical and X-Ray Variations in NGC 5548. *Philip Uttley, Rick Edelson, Ian M. McHardy, Bradley M. Peterson, & Alex Markowitz.* 584, L53 (2003)

Chandra X-Ray Observations of the Spiral Galaxy M81. *Douglas A. Swartz, Kajal K. Ghosh, Michael L. McCollough, Thomas G. Pannuti, Allyn F. Tennant, & Kinwah Wu.* 144, 213 (2003)

The Infrared Counterparts of the Optically Unidentified Chandra Deep Field–South 1 Ms Sources. *Haojing Yan, Rogier A. Windhorst, Huub J. A. Röttgering, Seth H. Cohen, Stephen C. Odewahn, Scott C. Chapman, & William C. Keel.* 585, 67 (2003)

Modeling Intracluster Gas in Triaxial Dark Halos: An Analytic Approach. *Jounghun Lee & Yasushi Suto.* 585, 151 (2003)

Chandra Studies of the X-Ray Point Source Luminosity Functions of M31. *Albert K. H. Kong, Rosanne DiStefano, Michael R. Garcia, & Jochen Greiner.* 585, 298 (2003)

No X-Ray–bright Type II Quasars among the Lyα Emitters. *S. Malhotra, J. X. Wang, J. E. Rhoads, T. M. Heckman, & C. A. Norman.* 585, L25 (2003)

An *Extreme Ultraviolet Explorer* Atlas of Seyfert Galaxy Light Curves: Search for Periodicity. *J. P. Halpern, K. M. Leighly, & H. L. Marshall.* 585, 665 (2003)

The Nuclear Accretion in the FR I Radio Galaxy IC 4296 from *Chandra* and Very Long Baseline Array Observations. *S. Pellegrini, T. Venturi, A. Comastri, G. Fabbiano, F. Fiore, C. Vignali, R. Morganti, & G. Trinchieri.* 585, 677 (2003)

X-Ray Source Population in the Elliptical Galaxy NGC 720 with *Chandra*. *Tesla E. Jeltema, Claude R. Canizares, David A. Buote, & Gordon P. Garmire.* 585, 756 (2003)

Radio/X-Ray Offsets of Large-Scale Jets Caused by Synchrotron Time Lags. *J. M. Bai & Myung Gyoon Lee.* 585, L113 (2003)

Neutral Beams from Blazar Jets. *Armen M. Atoyan & Charles D. Dermer.* 586, 79 (2003)

Using Multiwavelength Observations to Determine the Black Hole Mass and Accretion Rate in the Type 1 Seyfert Galaxy NGC 5548. *James Chiang & Omer Blaes.* 586, 97 (2003)

Detection of X-Ray Emission from the Eastern Radio Lobe of Pictor A. *Paola Grandi, Matteo Guainazzi, Laura Maraschi, Raffaella Morganti, Roberto Fusco-Femiano, Mariateresa Fiocchi, Lucia Ballo, & Fabrizio Tavecchio.* 586, 123 (2003)

The *XMM-Newton* View of the Nucleus of NGC 4261. *R. M. Sambruna, M. Gliozzi, M. Eracleous, W. N. Brandt, & R. Mushotzky.* 586, L37 (2003)

Discovery of X-Ray Quasi-periodic Oscillations from an Ultraluminous X-Ray Source in M82: Evidence against Beaming. *Tod E. Strohmayer & Richard F. Mushotzky.* 586, L61 (2003)

The Low Mass X-Ray Binary–Globular Cluster Connection. II. NGC 4472 X-Ray Source Properties and Source Catalogs. *Thomas J. Maccarone, Arunav Kundu, & Stephen E. Zepf.* 586, 814 (2003)

Chandra X-Ray Observations of NGC 1316 (Fornax A). *Dong-Woo Kim & G. Fabbiano.* 586, 826 (2003)

X-Ray Spectral Properties of Low-Mass X-Ray Binaries in Nearby Galaxies. *Jimmy A. Irwin, Alex E. Athey, & Joel N. Bregman.* 587, 356 (2003)

Cold Fronts in Cold Dark Matter Clusters. *Daisuke Nagai & Andrey V. Kravtsov.* 587, 514 (2003)

Spectra from a Magnetic Reconnection–heated Corona in Active Galactic Nuclei. *B. F. Liu, S. Mineshige, & K. Ohsuga.* 587, 571 (2003)

Feedback Heating in Cluster and Galactic Cooling Flows. *Fabrizio Brighenti & William G. Mathews.* 587, 580 (2003)

Chandra Survey of Radio-quiet, High-Redshift Quasars. *Jill Bechtold, Aneta Siemiginowska, Joseph Shields, Bozena Czerny, Agnieszka Janiuk, Fred Hamann, Thomas L. Aldcroft, Martin Elvis, & Adam Dobrzycki.* 588, 119 (2003)

What Types of Jets Does Nature Make? A New Population of Radio Quasars. *Paolo Padovani, Eric S. Perlman, Hermine Landt, Paolo Giommi, & Matteo Perri.* 588, 128 (2003)

Diffuse X-Ray Emission from M101. *K. D. Kuntz, S. L. Snowden, W. D. Pence, & K. Mukai.* 588, 264 (2003)

Simultaneous *Chandra* and *Rossi X-Ray Timing Explorer* Observations of the Nearby Bright Seyfert 2 Galaxy NGC 4945. *Chris Done, Greg M. Madejski, Piotr T. Życki, & Lincoln J. Greenhill.* 588, 763 (2003)

Chandra Observation of the X-Ray Source Population of NGC 6946. *S. S. Holt, E. M. Schlegel, U. Hwang, & R. Petre.* 588, 792 (2003)

A Continuous Injection Plasma Model for the X-Ray/Radio Knots in Kiloparsec-Scale Jets of Active Galactic Nuclei. *S. Sahayanathan, R. Misra, A. K. Kembhavi, & C. L. Kaul.* 588, L77 (2003)

Chandra Observations of QSO 2237+0305. *X. Dai, G. Chartas, E. Agol, M. W. Bautz, & G. P. Garmire.* 589, 100 (2003)

Relativistic and Slowing Down: The Flow in the Hot Spots of Powerful Radio Galaxies and Quasars. *Markos Georganopoulos & Demosthenes Kazanas.* 589, L5 (2003)

Detection of the "Active" Nucleus of M32. *Luis C. Ho, Yuichi Terashima, & James S. Ulvestad.* 589, 783 (2003)

Some Constraints on the Effects of Age and Metallicity on the Low-Mass X-Ray Binary Formation Rate. *Arunav Kundu, Thomas J. Maccarone, Stephen E. Zepf, & Thomas H. Puzia.* 589, L81 (2003)

The Nature of the Ultraviolet/X-Ray Absorber in PG 2302+029. *Bassem M. Sabra, Fred Hamann, Buell T. Jannuzi, Ian M. George, & Joseph C. Shields.* 590, 66 (2003)

An Active Galactic Nucleus Sample with High X-Ray–to–Optical Flux Ratio from RASS. II. Optical Emission Line Properties of Seyfert 1 Type Active Galactic Nuclei. *D. W. Xu, Stefanie Komossa, J. Y. Wei, Y. Qian, & X. Z. Zheng.* 590, 73 (2003)

The Far-Infrared Spectral Energy Distributions of X-Ray–selected Active Galaxies. *Joanna K. Kuraszkiewicz, Belinda J. Wilkes, Eric J. Hooper, Kim K. McLeod, Kenneth Wood, Jon Bjorkman, Kisha M. Delain, David H. Hughes, Martin S. Elvis, Chris D. Impey, Carol J. Lonsdale, Matt A. Malkan, Jonathan C. McDowell, & Barbara Whitney.* 590, 128 (2003)

Mass-Temperature Relation of Galaxy Clusters: Implication from the Observed Luminosity-Temperature Relation and X-Ray Temperature Function. *Mamoru Shimizu, Tetsu Kitayama, Shin Sasaki, & Tasushi Suto.* 590, 197 (2003)

XMM-Newton Observations of the Perseus Cluster. I. The Temperature and Surface Brightness Structure. *E. Churazov, W. Forman, C. Jones, & H. Boehringer.* 590, 225 (2003)

Rapid Cooling of Dusty Gas in Elliptical Galaxies. *William G. Mathews & Fabrizio Brighenti.* 590, L5 (2003)

A Luminous Recurrent Supersoft X-Ray Source in NGC 300. *A. K. H. Kong & R. Di Stefano.* 590, L13 (2003)

A Puzzling X-Ray Source Found in the *Chandra* Deep Field–South. *J. Wang, T. Yaqoob, G. Szokoly, R. Gilli, L. Kewley, V. Mainieri, M. Nonino, P. Rosati, P. Tozzi, W. Zheng, A. Zirm, & C. Norman.* 590, L87 (2003)

Chandra Observations of Extended X-Ray Emission in Arp 220. *J. C. McDowell, D. L. Clements, S. A. Lamb, S. Shaked, N. C. Hearn, L. Colina, C. Mundell, K. Borne, A. C. Baker, & S. Arribas.* 591, 154 (2003)

QSOs Associated with Messier 82. *E. Margaret Burbidge, Geoffrey Burbidge, Halton C. Arp, & Stefano Zibetti.* 591, 690 (2003)

Timescales of Soft X-Ray Variability and Physical Constraints in Active Galactic Nuclei. *W. Bian & Y. Zhao.* 591, 733 (2003)

A Variable Ultraluminous Supersoft X-Ray Source in "The Antennae": Stellar-Mass Black Hole or White Dwarf? *G. Fabbiano, A. R. King, A. Zezas, T. J. Ponman, A. Rots, & François Schweizer.* 591, 843 (2003)

Follow-Up *Hubble Space Telescope*/Space Telescope Imaging Spectroscopy of Three Candidate Tidal Disruption Events. *S. Gezari, J. P. Halpern, S. Komossa, D. Grupe, & K. M. Leighly.* 592, 42 (2003)

X-Ray Emission from the Hot Interstellar Medium and Southwest Radio Lobe of the Nearby Radio Galaxy Centaurus A. *R. P. Kraft, S. E. Vázquez, W. R. Forman, C. Jones, S. S. Murray, M. J. Hardcastle, D. M. Worrall, & E. Churazov.* 592, 129 (2003)

A *Chandra* Survey of the Nearest Ultraluminous Infrared Galaxies: Obscured Active Galactic Nuclei or Superstarbursts? *A. Ptak, T. Heckman, N. A. Levenson, K. Weaver, & D. Strickland.* 592, 782 (2003)

Luminous Supersoft X-Ray Sources in External Galaxies. *R. Di Stefano & A. K. H. Kong.* 592, 884 (2003)

Comptonization in Super-Eddington Accretion Flow and Growth Timescale of Supermassive Black Holes. *Toshihiro Kawaguchi.* 593, 69 (2003)

X-Ray Fluctuation Power Spectral Densities of Seyfert 1 Galaxies. *A. Markowitz, R. Edelson, S. Vaughan, P. Uttley, I. M. George, R. E. Griffiths, S. Kaspi, A. Lawrence, I. McHardy, K. Nandra, K. Pounds, J. Reeves, N. Schurch, & R. Warwick.* 593, 96 (2003)

Nuclear Activity and Massive Star Formation in the Low-Luminosity Active Galactic Nucleus NGC 4303: *Chandra* X-Ray Observations. *E. Jiménez-Bailón, M. Santos-Lleó, J. M. Mas-Hesse, M. Guainazzi, L. Colina, M. Cerviño, & Rosa M. González Delgado.* 593, 127 (2003)

The Kinematics and Physical Conditions of the Ionized Gas in NGC 4593 from *Chandra* High-Energy Grating Spectroscopy. *Barry McKernan, Tahir Yaqoob, Ian M. George, & T. J. Turner.* 593, 142 (2003)

BeppoSAX Observations of Centaurus A: The Hard Continuum and the Iron-Line Feature. *P. Grandi, M. Fiocchi, C. G. Perola, C. M. Urry, L. Maraschi, E. Massaro, G. Matt, A. Preite-Martinez, H. Steinle, & W. Collmar.* 593, 160 (2003)

Radio and X-Ray Observations of the Jet in Centaurus A. *M. J. Hardcastle, D. M. Worrall, R. P. Kraft, W. R. Forman, C. Jones, & S. S. Murray.* 593, 169 (2003)

A Massive X-Ray Outflow from the Quasar PDS 456. *J. N. Reeves, P. T. O'Brien, & M. J. Ward.* 593, L65 (2003)

Decelerating Flows in TeV Blazars: A Resolution to the BL Lacertae–FR I Unification Problem. *Markos Georganopoulos & Demosthenes Kazanas.* 594, L27 (2003)

Chandra Observations of the X-Ray–luminous Star-forming Galaxy Merger Arp 299. *A. Zezas, M. J. Ward, & S. S. Murray.* 594, L31 (2003)

Diagnostic Signatures of Radio and Hard X-Ray Emission on Particle Acceleration Processes in the Coma Cluster. *Ping-Hung Kuo, Chorng-Yuan Hwang, & Wing-Huen Ip.* 594, 732 (2003)

XMM-Newton Reveals the Quasar Outflow in PG 1115+080. *G. Chartas, W. N. Brandt, & S. C. Gallagher.* 595, 85 (2003)

Chandra Discovery of an X-Ray Jet and Extended X-Ray Structure in $z = 0.63$ Quasar B2 0738+313. *Aneta Siemiginowska, Carlo Stanghellini, Gianfranco Brunetti, Fabrizio Fiore, Thomas L. Aldcroft, Jill Bechtold, Martin Elvis, Stephen S. Murray, L. A. Antonelli, & S. Colafrancesco.* 595, 643 (2003)

Catching NGC 4051 in the Low State with *Chandra*. *Philip Uttley, Antonella Fruscione, Ian M. Hardy, & Georg Lamer.* 595, 656 (2003)

Hubble Space Telescope Imaging in the *Chandra* Deep Field–South. III. Quantitative Morphology of the 1 Million Second *Chandra* Counterparts and Comparison with the Field Population. *N. A. Grogin, A. M. Koekemoer, E. J. Schreier, J. Bergeron, R. Giacconi, G. Hasinger, L. Kewley, C. Norman, P. Rosati, P. Tozzi, & A. Zirm.* 595, 685 (2003)

Classifying X-Ray Sources in External Galaxies from X-Ray Colors. *A. H. Prestwich, J. A. Irwin, R. E. Kilgard, M. I. Krauss, A. Zezas, F. Primini, P. Kaaret, & B. Boroson.* 595, 719 (2003)

A Deep *Chandra* X-Ray Observation of NGC 1637. *Stefan Immler, Q. Daniel Wang, Douglas C. Leonard, & Eric M. Schlegel.* 595, 727 (2003)

Low-Mass X-Ray Binaries and Globular Clusters in Early-Type Galaxies. *Craig L. Sarazin, Arunav Kundu, Jimmy A. Irwin, Gregory R. Sivakoff, Elizabeth L. Blanton, & Scott W. Randall.* 595, 743 (2003)

Fe XXV and Fe XXVI Diagnostics of the Black Hole and Accretion Disk in Active Galaxies: *Chandra* Time-resolved Grating Spectroscopy of NGC 7314. *Tahir Yaqoob, Ian M. George, Timothy R. Kallman, Urmila Padmanabhan, Kimberly A. Weaver, & T. Jane Turner.* 596, 85 (2003)

Extended X-Ray Emission around 4C 41.17 at $z = 3.8$. *Caleb Scharf, Ian Smail, Rob Ivison, Richard Bower, Wil van Breugel, & Michiel Reuland.* 596, 105 (2003)

Can a Dusty Warm Absorber Model Reproduce the Soft X-Ray Spectra of MCG −6-30-15 and Markarian 766? *Masao Sako, Steven M. Kahn, Graziella Branduardi-Raymont, Jelle S. Kaastra, Albert C. Brinkman, Mathew J. Page, Ehud Behar, Frits Paerels, Ali Kinkhabwala, Duane A. Liedahl, & Jan Willem den Herder.* 596, 114 (2003)

Circulation Flows: Cooling Flows with Bubble Return. *William G. Mathews, Fabrizio Brighenti, David A. Boute, & Aaron D. Lewis.* 596, 159 (2003)

Chandra Observation of the Core of the Galaxy Cluster AWM 7. *T. Furusho, N. Y. Yamasaki, & T. Ohashi.* 596, 181 (2003)

A *Chandra* Study of the Complex Structure in the Core of 2A 0335+096. *P. Mazzotta, A. C. Edge, & M. Markevitch.* 596, 190 (2003)

X-Ray Emission from a Sample of Young Supernovae. *Joel N. Bregman, John C. Houck, Roger A. Chevalier, & Morton S. Roberts.* 596, 323 (2003)

The Serendipitous Extragalactic X-Ray Source Identification Program. I. Characteristics of the Hard X-Ray Sample. *Fiona A. Harrison, Megan E. Eckart, Peter H. Mao, David J. Helfand, & Daniel Stern.* 596, 944 (2003)

Turbulent Mixing in Clusters of Galaxies. *Woong-Tae Kim & Ramesh Narayan.* 596, L139 (2003)

X-Ray Evidence of a Buried Active Galactic Nucleus in UGC 5101. *Masatoshi Imanishi, Yuichi Terashima, Naohisa Anabuki, & Takao Nakagawa.* 596, L167 (2003)

Nonnuclear Hyper/Ultralumious X-Ray Sources in the Starbursting Carthwheel Ring Galaxy. *Yu Gao, Q. Daniel Wang, P. N. Appleton, & Ray A. Lucas.* 596, L171 (2003)

An *XMM-Newton* and *Chandra* Investigation of the Nuclear Accretion in the Sombrero Galaxy (NGC 4594). *S. Pellegrini, A. Baldi, G. Fabbiano, & D.-W. Kim.* 597, 175 (2003)

Chandra Observations of Point Sources in A2255. *David S. Davis, Neal A. Miller, & Richard F. Mushotzky.* 597, 202 (2003)

Small-Scale Structure in the Galactic Interstellar Medium: Implications for Galaxy Cluster Studies. *Joel N. Bregman, Megan C. Novicki, Jessica E. Krick, & John S. Arabadjis.* 597, 399 (2003)

X-Ray Variability of the Magnetic Cataclysmic Variable V1432 Aquilae and the Seyfert Galaxy NGC 6814. *K. Mukai, C. Hellier, G. Madejski, J. Patterson, & D. R. Skillman.* 597, 479 (2003)

Chandra Observation of 3C 212: A New Look at the X-Ray and Ultraviolet Absorbers. *T. L. Aldcroft, A. Siemiginowska, M. Elvis, S. Mathur, F. Nicastro, & S. S. Murray.* 597, 751 (2003)

Accretion Disk Spectra of Ultraluminous X-Ray Sources in Nearby Spiral Galaxies and Galactic Superluminal Jet Sources. *Ken Ebisawa, Piotr Zycki, Aya Kubota, Tsunefumi Mizuno, & Ken-ya Watarai.* 597, 780 (2003)

Toward a Self-Consistent Model of the Ionized Absorber in NGC 3783. *Y. Krongold, F. Nicastro, N. S. Brickhouse, M. Elvis, D. A. Liedahl, & S. Mathur.* 597, 832 (2003)

A Long Look at NGC 3783 with the *XMM-Newton* Reflection Grating Spectrometer. *Ehud Behar, Andrew P. Rasmussen, Alexander J. Blustin, Masao Sako, Steven M. Kahn, Jelle S. Kaastra, Graziella Branduardi-Raymont, & Katrien C. Steenbrugge.* 598, 232 (2003)

The Multicolored Hot Interstellar Medium of the "Antennae" Galaxies (NGC 4038/4039). *G. Fabbiano, M. Krauss, A. Zezas, A. Rots, & S. Neff.* 598, 272 (2003)

Star Formation and X-Ray Emission in Distant Star-Forming Galaxies. *Judith G. Cohen.* 598, 288 (2003)

An X-Ray Jet Discovered by *Chandra* in the $z = 4.3$ Radio-selected Quasar GB 1508+5714. *Aneta Siemiginowska, Randall K. Smith, Thomas L. Aldcroft, D. A. Schwartz, Frederik Paerels, & Andreea O. Petric.* 598, L15 (2003)

XMM-Newton Observation of Fe Kα Emission from a Broad Absorption Line Quasar: Markarian 231. *T. J. Turner & S. B. Kraemer.* 598, 916 (2003)

Long-Term X-Ray Spectral Variability in Seyfert 1 Galaxies. *A. Markowitz, R. Edelson, & S. Vaughan.* 598, 935 (2003)

Chandra Observation of the Edge-on Galaxy NGC 3556 (M108): Violent Galactic Disk-Halo Interaction Revealed. *Q. Daniel Wang, Tara Chaves, & Judith A. Irwin.* 598, 969 (2003)

A *Chandra* Observation of The Diffuse Emission in the Face-on Spiral NGC 6946. *Eric M. Schlegel, S. S. Holt, & R. Petre.* 598, 982 (2003)

A Warm/Hot Intergalactic Medium toward 3C 120? *Barry McKernan, Tahir Yaqoob, Richard Mushotzky, Ian M. George, & T. Jane Turner.* 598, L83 (2003)

Does the Iron Kα Line of Active Galactic Nuclei Arise from the Cerenkov Line-like Radiation? *J. H. You, D. B. Liu, W. P. Chen, L. Chen, & S. N. Zhang.* 599, 164 (2003)

Chandra Observations of Low-Mass X-Ray Binaries and Diffuse Gas in the Early-Type Galaxies NGC 4365 and NGC 4382 (M85). *Gregory R. Sivakoff, Craig L. Sarazin, & Jimmy A. Irwin.* 599, 218 (2003)

The Ionized Gas and Nuclear Environment in NGC 3783. IV. Variability and Modeling of the 900 Kilosecond *Chandra* Spectrum. *Hagai Netzer, Shai Kaspi, Ehud Behar, W. N. Brandt, Doron Chelouche, Ian M. George, D. Michael Crenshaw, Jack R. Gabel, Frederick W. Hamann, Steven B. Kraemer, Gerard A. Kriss, Kirpal Nandra, Bradley M. Peterson, Joseph C. Shields, & T. J. Turner.* 599, 933 (2003)

X-Ray–Extreme Ultraviolet Simultaneous Observations of NGC 5548: Fast Extreme Ultraviolet Dip without X-Ray Variation. *Y. Haba, H. Kunieda, K. Misaki, Y. Terashima, J. S. Kaastra, R. Mewe, A. C. Fabian, & K. Iwasawa.* 599, 949 (2003)

Stellar Orbits and the Interstellar Gas Temperature in Elliptical Galaxies. *William G. Mathews & Fabrizio Brighenti.* 599, 992 (2003)

Radio Emission Associated with Ultraluminous X-Ray Sources in the Galaxy Merger NGC 3256. *S. G. Neff, James S. Ulvestad, & S. D. Campion.* 599, 1043 (2003)

X-Ray Point Sources in the Sombrero Galaxy: Supersoft Sources, the Globular Cluster/Low-Mass X-Ray Binary Connection, and an Overview. *R. DiStefano, A. K. H. Kong, M. L. VanDalfsen, W. E. Harris, S. S. Murray, & K. M. Delain.* 599, 1067 (2003)

NGC 4261 and NGC 4697: Rejuvenated Elliptical Galaxies. *A. Zezas, L. Hernquist, G. Fabbiano, & J. Miller.* 599, L73 (2003)

X-RAYS: GALAXIES: CLUSTERS

Models of Galaxy Clusters with Thermal Conduction. *Nadia L. Zakamska & Ramesh Narayan.* 582, 162 (2003)

Chandra Analysis of A496: No Chemical Gradients across Cold Fronts. *Renate Dupke & Raymond E. White III.* 583, L13 (2003)

Sunyaev-Zeldovich Effect Imaging of MACS Galaxy Clusters at $z > 0.5$. *Samuel J. LaRoque, Marshall Joy, John E. Carlstrom, Harald Ebeling, Massimiliano Bonamente, Kyle S. Dawson, Alastair Edge, William L. Holzapfel, Amber D. Miller, Daisuke Nagai, Sandeep K. Patel, & Erik D. Reese.* 583, 559 (2003)

Chandra Observations of the Cooling Flow Cluster Abell 2052. *Elizabeth L. Blanton, Craig L. Sarazin, & Brian R. McNamara.* 585, 227 (2003)

Importance of Cluster Structural Evolution in Using X-Ray and Sunyaev-Zeldovich Effect Galaxy Cluster Surveys to Study Dark Energy. *Subhabrata Majumdar & Joseph J. Mohr.* 585, 603 (2003)

Properties of the Brightest Cluster Galaxy and Its Host Cluster. *Haruyoshi Katayama, Kiyoshi Hayashida, Fumio Takahara, & Yutaka Fujita.* 585, 687 (2003)

A Massive Warm Baryonic Halo in the Coma Cluster. *Massimiliano Bonamente, Marshall K. Joy, & Richard Lieu.* 585, 722 (2003)

Chandra Observations of A2029: The Dark Matter Profile Down to below $0.01r_{\rm vir}$ in an Unusually Relaxed Cluster. *Aaron D. Lewis, David A. Buote, & John T. Stocke.* 586, 135 (2003)

Chandra Temperature Map of A754 and Constraints on Thermal Conduction. *M. Markevitch, P. Mazzotta, A. Vikhlinin, D. Burke, Y. Butt, L. David, H. Donnelly, W. R. Forman, D. Harris, D.-W. Kim, S. Virani, & J. Vrtilek.* 586, L19 (2003)

An X-Ray Atlas of Groups of Galaxies. *John S. Mulchaey, David S. Davis, Richard F. Mushotzky, & David Burstein.* 145, 39 (2003)

Effect of Internal Flows on Sunyaev-Zeldovich Measurements of Cluster Peculiar Velocities. *Daisuke Nagai, Andrey V. Kravtsov, & Arthur Kosowsky.* 587, 524 (2003)

Feedback Heating in Cluster and Galactic Cooling Flows. *Fabrizio Brighenti & William G. Mathews.* 587, 580 (2003)

Chandra X-Ray Analysis of the Massive High-Redshift Galaxy Clusters Cl J1113.1−2615 and Cl J0152.7−1357. *B. J. Maughan, L. R. Jones, H. Ebeling, E. Perlman, P. Rosati, C. Frye, & C. R. Mullis.* 587, 589 (2003)

Chandra Observations of the Galaxy Cluster A478: The Interaction of Hot Gas and Radio Plasma in the Core, and an Improved Determination of the Compton y-Parameter. *M. Sun, C. Jones, S. S. Murray, S. W. Allen, A. C. Fabian, & A. C. Edge.* 587, 619 (2003)

On the Relationship between Cooling Flows and Bubbles. *Ian G. McCarthy, Arif Babul, Neal Katz, & Michael L. Balogh.* 587, L75 (2003)

EGRET Upper Limits on the High-Energy Gamma-Ray Emission of Galaxy Clusters. *O. Reimer, M. Pohl, P. Sreekumar, & J. R. Mattox.* 588, 155 (2003)

Chandra Discovery of the Intracluster Medium around UM 425 at a Redshift of 1.47. *Smita Mathur & Rik J. Williams.* 589, L1 (2003)

Observed Non–Steady State Cooling and the Moderate Cluster Cooling Flow Model. *Noam Soker & Laurence P. David.* 589, 770 (2003)

Cosmological Constraints from the Evolution of the Cluster Baryon Mass Function at $z \sim 0.5$. *A. Vikhlinin, A. Voevodkin, C. R. Mullis, L. VanSpeybroeck, H. Quintana, B. R. McNamara, I. Gioia, A. Hornstrup, J. P. Henry, W. R. Forman, & C. Jones.* 590, 15 (2003)

High Resolution X-Ray Spectroscopic Constraints on Cooling-Flow Models for Clusters of Galaxies. *J. R. Peterson, S. M. Kahn, F. B. S. Paerels, J. S. Kaastra, T. Tamura, J. A. M. Bleeker, C. Ferrigno, & J. G. Jernigan.* 590, 207 (2003)

XMM-Newton Observations of the Perseus Cluster. I. The Temperature and Surface Brightness Structure. *E. Churazov, W. Forman, C. Jones, & H. Boehringer.* 590, 225 (2003)

Rapid Cooling of Dusty Gas in Elliptical Galaxies. *William G. Mathews & Fabrizio Brighenti.* 590, L5 (2003)

Detection of Nonrandom Galaxy Orientations in X-Ray Subclusters of the Coma Cluster. *Manfred Kitzbichler & W. Saurer.* 590, L9 (2003)

Measuring σ_8 with Cluster Lensing: Biases from Unrelaxed Clusters. *Graham P. Smith, Alastair C. Edge, Vincent R. Eke, Robert C. Nichol, Ian Smail, & Jean-Paul Kneib.* 590, L79 (2003)

Cluster Sunyaev-Zeldovich Effect Scaling Relations. *Ian G. McCarthy, Arif Babul, Gilbert P. Holder, & Michael L. Balogh.* 591, 515 (2003)

The Sunyaev-Zeldovich Effect Signature of Excess Entropy in Distant, Massive Clusters. *Ian G. McCarthy, Gilbert P. Holder, Arif Babul, & Michael L. Balogh.* 591, 526 (2003)

SMAUG: A New Technique for the Deprojection of Galaxy Clusters. *Fabio Pizzolato, Silvano Molendi, Simona Ghizzardi, & Sabrina De Grandi.* 592, 62 (2003)

Simulations of Buoyant Bubbles in Galaxy Clusters. *M. Brüggen.* 592, 839 (2003)

On the Origin of Intracluster Entropy. *G. Mark Voit, Michael L. Balogh, Richard G. Bower, Cedric G. Lacey, & Greg L. Bryan.* 593, 272 (2003)

Chandra Observation of the Merging Cluster A2034. *Joshua C. Kempner, Craig L. Sarazin, & Maxim Markevitch.* 593, 291 (2003)

Equilibrium Models of Galaxy Clusters with Cooling, Heating, and Conduction. *M. Brüggen.* 593, 700 (2003)

Iron Abundance in the Intracluster Medium at High Redshift. *P. Tozzi, P. Rosati, S. Ettori, S. Borgani, V. Mainieri, & C. Norman.* 593, 705 (2003)

The 160 Square Degree *ROSAT* Survey: The Revised Catalog of 201 Clusters with Spectroscopic Redshifts. *C. R. Mullis, B. R. McNamara, H. Quintana, A. Vikhlinin, J. P. Henry, I. M. Gioia, A. Hornstrup, W. Forman, & C. Jones.* 594, 154 (2003)

Nonthermal Particles and Radiation Produced by Cluster Merger Shocks. *Robert C. Berrington & Charles D. Dermer.* 594, 709 (2003)

XMM-Newton and *Chandra* Observations of the Galaxy Group NGC 5044. I. Evidence for Limited Multiphase Hot Gas. *David A. Buote, Aaron D. Lewis, Fabrizio Brighenti, & William G. Mathews.* 594, 741 (2003)

Signatures of Galaxy Formation in the Intracluster Medium. *G. Mark Voit & Trevor J. Ponman.* 594, L75 (2003)

Rossi X-Ray Timing Explorer Observations of A2256. *Yoel Rephaeli & Duane Gruber.* 595, 137 (2003)

Chandra Obsrevations of the Central Region of A3112. *Motokazu Takizawa, Craig L. Sarazin, Elizabeth L. Blanton, & Greg B. Taylor.* 595, 142 (2003)

XMM-Newton and *Chandra* Observations of the Galaxy Group NGC 5044. II. Metal Abundances and Supernova Fraction. *David A. Buote, Aaron D. Lewis, Fabrizio Brighenti, & William G. Mathews.* 595, 151 (2003)

Diffuse Nonthermal X-Ray Emission: Evidence of Cosmic-Ray Acceleration at the Shock Front in IC 1262. *Daniel S. Hudson & Mark J. Henriksen.* 595, L1 (2003)

Circulation Flows: Cooling Flows with Bubble Return. *William G. Mathews, Fabrizio Brighenti, David A. Boute, & Aaron D. Lewis.* 596, 159 (2003)

Spatial Distributions of A3558 in the Core Region of the Shapley Supercluster. *F. Akimoto, K. Kondou, A. Furuzawa, Y. Tawara, & K. Yamashita.* 596, 170 (2003)

Thermal Instability in Clusters of Galaxies with Conduction. *Woong-Tae Kim & Ramesh Narayan.* 596, 889 (2003)

Kinetic Sunyaev-Zel'dovich Effect and Cosmic Microwave Background Polarization from Subsonic Bulk Motions of Dense Gas Clouds in Galaxy Cluster Cores. *J. M. Diego, P. Mazzotta, & J. Silk.* 597, L1 (2003)

The Mass, Baryonic Fraction, and X-Ray Temperature of the Luminous, High-Redshift Cluster of Galaxies MS 0451.6−0305. *Megan Donahue, Jessica A. Gaskin, Sandeep K. Patel, Marshall Joy, Doug Clowe, & John P. Hughes.* 598, 190 (2003)

Chandra Observations of the NGC 1550 Galaxy Group: Implication for the Temperature and Entropy Profiles of 1 keV Galaxy Groups. *M. Sun, W. Forman, A. Vikhlinin, A. Hornstrup, C. Jones, & S. S. Murray.* 598, 250 (2003)

Stellar Orbits and the Interstellar Gas Temperature in Elliptical Galaxies. *William G. Mathews & Fabrizio Brighenti.* 599, 992 (2003)

X-RAYS: GENERAL

Chandra X-Ray Imaging Spectroscopy of the Young Supernova Remnant Kesteven 75. *David J. Helfand, Benjamin F. Collins, & E. V. Gotthelf.* 582, 783 (2003)

Indirect X-Ray Line-Formation Processes in Iron L-Shell Ions. *M. F. Gu.* 582, 1241 (2003)

Can Radiative Cooling and Nongravitational Heating Explain Simultaneously the Global X-Ray Properties of Clusters and the Unresolved Cosmic X-Ray Background? *Yan-Jie Xue & Xiang-Ping Wu.* 584, 34 (2003)

A New X-Ray Flare from the Galactic Nucleus Detected with the *XMM-Newton* Photon Imaging Cameras. *A. Goldwurm, E. Brion, P. Goldoni, P. Ferrando, F. Daigne, A. Decourchelle, R. S. Warwick, & P. Predehl.* 584, 751 (2003)

Charge Abundances of the Solar Wind Ions Inferred from Cometary X-Ray Spectra. *V. Kharchenko, Matt Rigazio, A. Dalgarno, & V. A. Krasnopolsky.* 585, L73 (2003)

On the X-Ray Lines in the Afterglows of Gamma-Ray Bursts. *Shlomo Dado, Arnon Dar, & A. De Rújula.* 585, 890 (2003)

Fast X-Ray Transients and Their Connection to Gamma-Ray Bursts. *Vadim A. Arefiev, William C. Priedhorsky, & Konstantin N. Borozdin.* 586, 1238 (2003)

High-Resolution Grating Spectroscopy of GRB 020405 with the *Chandra* Low Energy Transmission Grating Spectrometer. *N. Mirabal, F. Paerels, & J. P. Halpern.* 587, 128 (2003)

Chandra Observations of the Luminous, Oxygen-rich Supernova Remnants in the Irregular Galaxy NGC 4449. *Daniel J. Patnaude & Robert A. Fesen.* 587, 221 (2003)

A Stringent Limit on the Accretion Luminosity of the Possible Central Black Hole in the Globular Cluster M15. *Luis C. Ho, Yuichi Terashima, & Takashi Okajima.* 587, L35 (2003)

Lowering Infrared Cluster Magnetic Field Strengths: The Radio Galaxy Contributions. *Lawrence Rudnick & Katherine M. Blundell.* 588, 143 (2003)

The Resolved Fraction of the Cosmic X-Ray Background. *A. Moretti, S. Campana, D. Lazzati, & G. Tagliaferri.* 588, 696 (2003)

Chandra Observation of the X-Ray Source Population of NGC 6946. *S. S. Holt, E. M. Schlegel, U. Hwang, & R. Petre.* 588, 792 (2003)

The Pulsar Wind Nebula in G11.2−0.3. *Mallory S. E. Roberts, Cindy R. Tam, Victoria M. Kaspi, Maxim Lyutikov, Gautam Vasisht, Michael Pivovaroff, Eric V. Gotthelf, & Nobuyuki Kawai.* 588, 992 (2003)

A Major Soft Gamma Repeater–like Outburst and Rotation Glitch in the No-longer-so-anomalous X-Ray Pulsar 1E 2259+586. *V. M. Kaspi, F. P. Gavriil, P. M. Woods, J. B. Jensen, M. S. E. Roberts, & D. Chakrabarty.* 588, L93 (2003)

A Deep *Chandra* Catalog of X-Ray Point Sources toward the Galactic Center. *M. P. Muno, F. K. Baganoff, M. W. Bautz, W. N. Brandt, P. S. Broos, E. D. Feigelson, G. P. Garmire, M. R. Morris, G. R. Ricker, & L. K. Townsley.* 589, 225 (2003)

Refining *Chandra*/ACIS Subpixel Event Repositioning Using a Backside-illuminated CCD Model. *Jingqiang Li, Joel H. Kastner, Gregory Y. Prigozhin, & Norbert S. Schulz.* 590, 586 (2003)

Emission-Line Spectra of Ar IX–Ar XVI in the Soft X-Ray Region 20–50 Å. *J. K. Lepson, P. Beiersdorfer, E. Behar, & S. M. Kahn.* 590, 604 (2003)

Rapid Cooling of Dusty Gas in Elliptical Galaxies. *William G. Mathews & Fabrizio Brighenti.* 590, L5 (2003)

Integral and *XMM-Newton* Observations of the Weak Gamma-Ray Burst GRB 030227. *S. Mereghetti, D. Götz, A. Tiengo, V. Beckmann, J. Borkowski, T.J.-L. Courvoisier, A. von Kienlin, V. Schoenfelder, J. P. Roques, L. Bouchet, P. Ubertini, A. Castro-Tirado, F. Lebrun, J. Paul, N. Lund, J. M. Mas-Hesse, W. Hermsen, P. R. den Hartog, & C. Winkler.* 590, L73 (2003)

X-Ray Spectra of Young Pulsars and Their Wind Nebulae: Dependence on Spin-Down Energy Loss Rate. *E. V. Gotthelf.* 591, 361 (2003)

PSR J1847−0130: A Radio Pulsar with Magnetar Spin Characteristics. *M. A. McLaughlin, I. H. Stairs, V. M. Kaspi, D. R. Lorimer, M. Kramer, A. G. Lyne, R. N. Manchester, F. Camilo, G. Hobbs, A. Possenti, N. D'Amico, & A. J. Faulkner.* 591, L135 (2003)

Assessment of the Fluorescence and Auger Database used in Plasma Modeling. *T. W. Gorczyca, C. N. Kodituwakku, K. T. Korista, O. Zatsarinny, N. R. Badnell, E. Behar, M. H. Chen, & D. W. Savin.* 592, 636 (2003)

Lens or Binary? *Chandra* Observations of the Wide-Separation Broad Absorption Line Quasar Pair UM 425. *Thomas L. Aldcroft & Paul J. Green.* 592, 710 (2003)

Tracing the Large-Scale Structure in the *Chandra* Deep Field South. *R. Gilli, A. Cimatti, E. Daddi, G. Hasinger, P. Rosati, G. Szokoly, P. Tozzi, J. Bergeron, S. Borgani, R. Giacconi, L. Kewley, V. Mainieri, M. Mignoli, M. Nonino, C. Norman, J. Wang, G. Zamorani, W. Zheng, & A. Zirm.* 592, 721 (2003)

The Contribution of Particle Impact to the Production of Fe Kα Emission from Accreting Black Holes. *D. R. Ballantyne & A. C. Fabian.* 592, 1089 (2003)

Ejecta Detection in Middle-aged Large Magellanic Cloud Supernova Remnants 0548−70.4 and 0534−69.9. *S. P. Hendrick, K. J. Borkowski, & S. P. Reynolds.* 593, 370 (2003)

Recombination X-Ray Line Formation of Iron L-Shell Ions in Low Temperature Plasmas. *M. F. Gu.* 593, 1249 (2003)

X-Ray Absorption by the Low-Redshift Intergalactic Medium: A Numerical Study of the Λ Cold Dark Matter Model. *Xuelei Chen, David H. Weinberg, Neal Katz, & Romeel Davé.* 594, 42 (2003)

Carbon-Nitrogen-Oxygen Line Radiation and the X-Ray Bowen Fluorescence Mechanism in Optically Thick, Highly Ionized Media. *Masao Sako.* 594, 1108 (2003)

Magnetic Coupling of a Rotating Black Hole with Its Surrounding Accretion Disk. *Ding-Xiong Wang, Ren-Yi Ma, Wei-Hua Lei, & Guo-Zheng Yao.* 595, 109 (2003)

Delayed Soft X-Ray Emission Lines in the Afterglow of GRB 030227. *D. Watson, J. N. Reeves, J. Hjorth, P. Jakobsson, & K. Pedersen.* 595, L29 (2003)

Classifying X-Ray Sources in External Galaxies from X-Ray Colors. *A. H. Prestwich, J. A. Irwin, R. E. Kilgard, M. I. Krauss, A. Zezas, F. Primini, P. Kaaret, & B. Boroson.* 595, 719 (2003)

A Deep *Chandra* X-Ray Observation of NGC 1637. *Stefan Immler, Q. Daniel Wang, Douglas C. Leonard, & Eric M. Schlegel.* 595, 727 (2003)

A Second Glitch from the "Anomalous" X-Ray Pulsar 1RXS J170849.0−4000910. *V. M. Kaspi & F. P. Gavriil.* 596, L71 (2003)

The Serendipitous Extragalactic X-Ray Source Identification Program. I. Characteristics of the Hard X-Ray Sample. *Fiona A. Harrison, Megan E. Eckart, Peter H. Mao, David J. Helfand, & Daniel Stern.* 596, 944 (2003)

Evolution of Hard X-Ray Spectra along the Branches in Circinus X-1. *G. Q. Ding, J. L. Qu, & T. P. Li.* 596, L219 (2003)

Supergalactic Winds Driven by Multiple Super–Star Clusters. *Guillermo Tenorio-Tagle, Sergiy Silich, & Casiana Munoz-Tunon.* 597, 279 (2003)

The X-Ray Afterglows of GRB 020813 and GRB 021004 with *Chandra* HETGS: Possible Evidence for a Supernova prior to GRB 020813. *Nathanial R. Butler, Herman L. Marshall, George R. Ricker, Roland K. Vanderspek, Peter G. Ford, Geoffrey B. Crew, Donald Q. Lamb, & J. Garrett Jernigan.* 597, 1010 (2003)

Optical Identification of the *ASCA* Lynx Deep Survey: An Association of Quasi-Stellar Objects and a Supercluster at $z = 1.3$? *Kouji Ohta, Masayuki Akiyama, Yoshihiro Ueda, Toru Yamada, Kouichiro Nakanishi, Gavin B. Dalton, Yashushi Ogasaka, Tsuneo Kii, & Kiyoshi Hayashida.* 598, 210 (2003)

The *ROSAT* North Ecliptic Pole Survey: The Optical Identifications. *I. M. Gioia, J. P. Henry, C. R. Mullis, H. Böhringer, U. G. Briel, W. Voges, & J. P. Huchra.* 149, 29 (2003)

Electron-Ion Recombination Rate Coefficients and Photoionization Cross Sections for Astrophysically Abundant Elements. VII. Relativistic Calculations for O VI and O VII for Ultraviolet and X-Ray Modeling. *Sultana N. Nahar & Anil K. Pradhan.* 149, 237 (2003)

X-RAYS: INDIVIDUAL

Constellation Name: Cassiopeia A

Limits to the Cassiopeia A ^{44}Ti Line Flux and Constraints on the Ejecta Energy and the Compact Source. *R. E. Rothschild & R. E. Lingenfelter.* 582, 257 (2003)

Constellation Name: Circinus X-1

Long-Term X-Ray Variability of Circinus X-1. *P. M. Saz Parkinson, D. M. Tournear, E. D. Bloom, W. B. Focke, K. T. Reilly, K. S. Wood, P. S. Ray, M. T. Wolff, & Jeffrey D. Scargle.* 595, 333 (2003)

Evolution of Hard X-Ray Spectra along the Branches in Circinus X-1. *G. Q. Ding, J. L. Qu, & T. P. Li.* 596, L219 (2003)

Constellation Name: Cygnus X-1

A New Method to Resolve X-Ray Halos around Point Sources with *Chandra* Data and Its Application to Cygnus X-1. *Yangsen Yao, Shuang Nan Zhang, Xiaoling Zhang, & Yuxin Feng.* 594, L43 (2003)

Name: Coma Cluster

A Massive Warm Baryonic Halo in the Coma Cluster. *Massimiliano Bonamente, Marshall K. Joy, & Richard Lieu.* 585, 722 (2003)

Name: Galactic Ridge

RXTE, *ROSAT*, and *ASCA* Observations of G347.3−0.5 (RX J1713.7−3946): Probing Cosmic-Ray Acceleration by a Galactic Shell-Type Supernova Remnant. *Thomas G. Pannuti, Glenn E. Allen, John C. Houck, & Steven J. Sturner.* 593, 377 (2003)

NGC Number: NGC 346

An X-Ray Investigation of the NGC 346 Field in the Small Magellanic Cloud. II. The Field Population. *Y. Nazé, J. M. Hartwell, I. R. Stevens, J. Manfroid, S. Marchenko, M. F. Corcoran, A. F. J. Moffat, & G. Skalkowski.* 586, 983 (2003)

NGC Number: NGC 507

ROSAT HRI Investigation of the NGC 507 X-Ray Halo. *M. Paolillo, G. Fabbiano, G. Peres, & D.-W. Kim.* 586, 850 (2003)

NGC Number: NGC 7314

Fe XXV and Fe XXVI Diagnostics of the Black Hole and Accretion Disk in Active Galaxies: *Chandra* Time-resolved Grating Spectroscopy of NGC 7314. *Tahir Yaqoob, Ian M. George, Timothy R. Kallman, Urmila Padmanabhan, Kimberly A. Weaver, & T. Jane Turner.* 596, 85 (2003)

Alphanumeric: A0535+26

Neutrinos from Accreting Neutron Stars. *Luis A. Anchordoqui, Diego F. Torres, Thomas P. McCauley, Gustavo E. Romero, & Felix A. Aharonian.* 589, 481 (2003)

Alphanumeric: CXOU J112439.1−591620

An X-Ray Pulsar in the Oxygen-rich Supernova Remnant G292.0+1.8. *John P. Hughes, Patrick O. Slane, Sangwook Park, Peter W. A. Roming, & David N. Burrows.* 591, L139 (2003)

Alphanumeric: EXO 1745−248

A *Chandra* X-Ray Study of the Dense Globular Cluster Terzan 5. *C. O. Heinke, P. D. Edmonds, J. E. Grindlay, D. A. Lloyd, H. N. Cohn, & P. M. Lugger.* 590, 809 (2003)

Alphanumeric: G347.3−0.5

RXTE, *ROSAT*, and *ASCA* Observations of G347.3−0.5 (RX J1713.7−3946): Probing Cosmic-Ray Acceleration by a Galactic Shell-Type Supernova Remnant. *Thomas G. Pannuti, Glenn E. Allen, John C. Houck, & Steven J. Sturner.* 593, 377 (2003)

Alphanumeric: GRS 1915+105

The 590 Day Long-Term Periodicity of the Microquasar GRS 1915+105. *A. Rau, J. Greiner, & M. L. McCollough.* 590, L37 (2003)

On the Origin of the Various Types of Radio Emission in GRS 1915+105. *S. V. Vadawale, A. R. Rao, S. Naik, J. S. Yadav, C. H. Ishwara-Chandra, A. Pramesh Rao, & G. G. Pooley.* 597, 1023 (2003)

Alphanumeric: GX 301−2

Detection of a Fully Resolved Compton Shoulder of the Iron Kα Line in the *Chandra* X-Ray Spectrum of GX 301-2. *Shin Watanabe, Masao Sako, Manabu Ishida, Yoshitaka Ishisaki, Steve M. Kahn, Takayoshi Kohmura, Umeyo Morita, Fumiaki Nagase, Frederik Paerels, & Tadayuki Takahashi.* 597, L37 (2003)

Alphanumeric: IC 342 S1

Spectral Energy Distribution in Supercritical Disk Accretion Flows through Photon-trapping Effects. *Ken Ohsuga, Shin Mineshige, & Ken-ya Watarai.* 596, 429 (2003)

Alphanumeric: M33 X-8

Spectral Visibility of the Nucleus of M33 in a *Chandra*/ACIS Observation. *V. La Parola, F. Damiani, G. Fabbiano, & G. Peres.* 583, 758 (2003)

Alphanumeric: 1RXS J170849.0−400910

The Glitches of the Anomalous X-Ray Pulsar 1RXS J170849.0−400910. *S. Dall'Osso, G. L. Israel, L. Stella, A. Possenti, & E. Perozzi.* 599, 485 (2003)

Alphanumeric: 2S 0921−63

Chandra and *XMM* Observations of the Accretion Disk Corona Source 0921−63. *T. R. Kallman, L. Angelini, B. Boroson, & J. Cottam.* 583, 861 (2003)

Alphanumeric: S308

Hot Gas in the Circumstellar Bubble S308. *You-Hua Chu, Martín A. Guerrero, Robert A. Gruendl, Guillermo García-Segura, & Heinrich J. Wendker.* 599, 1189 (2003)

Alphanumeric: SGR 0526−66

X-Ray Emission from Multiphase Shock in the Large Magellanic Cloud Supernova Remnant N49. *Sangwook Park, David N. Burrows, Gordon P. Garmire, John A. Nousek, John P. Hughes, & Rosa Murphy Williams.* 586, 210 (2003)

Alphanumeric: 4U 1700−37

Chandra Grating Spectroscopy of the X-Ray Binary 4U 1700−37 in a Flaring State. *Bram Boroson, Saeqa Dil Vrtilek, Timothy Kallman, & Michael Corcoran.* 592, 516 (2003)

Alphanumeric: 4U 1728−34

Eddington-limited X-Ray Bursts as Distance Indicators. I. Systematic Trends and Spherical Symmetry in Bursts from 4U 1728−34. *Duncan K. Galloway, Dimitrios Psaltis, Deepto Chakrabarty, & Michael P. Muno.* 590, 999 (2003)

X-RAYS: ISM

The Radial Structure of Supernova Remnant N103B. *Karen T. Lewis, David N. Burrows, John P. Hughes, Patrick O. Slane, Gordon P. Garmire, & John A. Nousek.* 582, 770 (2003)

Iron-rich Ejecta in the Supernova Remnant DEM L71. *John P. Hughes, Parviz Ghavamian, Cara E. Rakowski, & Patrick O. Slane.* 582, L95 (2003)

Chandra Spectra of the Soft X-Ray Diffuse Background. *M. Markevitch, M. W. Bautz, B. Biller, Y. Butt, R. Edgar, T. Gaetz, G. Garmine, C. E. Grant, P. Green, M. Juda, P. P. Plucinsky, D. Schwartz, R. Smith, A. Vikhlinin, S. Virani, B. J. Wargelin, & S. Wolk.* 583, 70 (2003)

Revealing New Physical Structures in the Supernova Remnant N63A through *Chandra* Imaging Spectroscopy. *Jessica S. Warren, John P. Hughes, & Patrick O. Slane.* 583, 260 (2003)

Thermal OH (1667/1665 MHz) Absorption and Nonthermal OH (1720 MHz) Emission toward the W28 Supernova Remnant. *F. Yusef-Zadeh, M. Wardle, & D. A. Roberts.* 583, 267 (2003)

On the Luminosities and Temperatures of Extended X-Ray Emission from Planetary Nebulae. *Noam Soker & Joel H. Kastner.* 583, 368 (2003)

New Constraints on the Energetics, Progenitor Mass, and Age of the Supernova Remnant G292.0+1.8 Containing PSR J1124−5916. *Marjorie Gonzalez & Samar Safi-Harb.* 583, L91 (2003)

A Supernova Remnant Collision with a Stellar Wind. *Pablo F. Velázquez, Gloria Koenigsberger, & Alejandro C. Raga.* 584, 284 (2003)

OH (1720 MHz) Masers and Mixed-Morphology Supernova Remnants. *F. Yusef-Zadeh, M. Wardle, J. Rho, & M. Sakano.* 585, 319 (2003)

X-Ray Emission from Multiphase Shock in the Large Magellanic Cloud Supernova Remnant N49. *Sangwook Park, David N. Burrows, Gordon P. Garmire, John A. Nousek, John P. Hughes, & Rosa Murphy Williams.* 586, 210 (2003)

Chandra CCD Imagery of the Northeast and Northwest Limbs of SN 1006. *Knox S. Long, Stephen P. Reynolds, John C. Raymond, P. Frank Winkler, Kristy K. Dyer, & Robert Petre.* 586, 1162 (2003)

Diffuse X-Ray Emission from M101. *K. D. Kuntz, S. L. Snowden, W. D. Pence, & K. Mukai.* 588, 264 (2003)

Chandra Observations of a Nonthermal Supernova Remnant Candidate AX J1843.8−0352 and Its Surroundings. *Masaru Ueno, Aya Bamba, Katsuji Koyama, & Ken Ebisawa.* 588, 338 (2003)

XMM-Newton Observations of PSR B1823−13: An Asymmetric Synchrotron Nebula around a Vela-like Pulsar. *B. M. Gaensler, N. S. Schulz, V. M. Kaspi, M. J. Pivovaroff, & W. E. Becker.* 588, 441 (2003)

Diffuse Hard X-Ray Sources Discovered with the *ASCA* Galactic Plane Survey. *Aya Bamba, Masaru Ueno, Katsuji Koyama, & Shigeo Yamauchi.* 589, 253 (2003)

Abundance Anomalies in the X-Ray Spectra of Planetary Nebulae NGC 7027 and BD +30°3639. *Holly L. Maness, Saeqa D. Vrtilek, Joel H. Kastner, & Noam Soker.* 589, 439 (2003)

The First Measurement of Cassiopeia A's Forward Shock Expansion Rate. *Tracey DeLaney & Lawrence Rudnick.* 589, 818 (2003)

Small-Scale Structure of the SN 1006 Shock with *Chandra* Observations. *Aya Bamba, Ryo Yamazaki, Masaru Ueno, & Katsuji Koyama.* 589, 827 (2003)

Discovery of Radio/X-Ray/Optical–resolved Supernova Remnants in the Center of the Andromeda Galaxy. *A. K. H. Kong, L. O. Sjouwerman, B. F. Williams, M. R. Garcia, & J. R. Dickel.* 590, L21 (2003)

The Physics of Supernova Remnant Blast Waves. II. Electron-Ion Equilibration in DEM L71 in the Large Magellanic Cloud. *Cara E. Rakowski, Parviz Ghavamian, & John P. Hughes.* 590, 846 (2003)

Nonthermal Emission from the Arches Cluster (G0.121+0.017) and the Origin of γ-Ray Emission from 3EG J1746−2851. *F. Yusef-Zadeh, M. Nord, M. Wardle, C. Law, C. Lang, & T. J. W. Lazio.* 590, L103 (2003)

Chandra X-Ray Spectroscopic Imaging of Sagittarius A* and the Central Parsec of the Galaxy. *F. K. Baganoff, Y. Maeda, M. Morris, M. W. Bautz, W. N. Brandt, W. Cui, J. P. Doty, E. D. Feigelson, G. P. Garmire, S. H. Pravdo, G. R. Ricker, & L. K. Townsley.* 591, 891 (2003)

Chandra Detection of the High Magnetic Field Radio Pulsar J1119−6127 in the Supernova Remnant G292.2−0.5. *Marjorie Gonzalez & Samar Safi-Harb.* 591, L143 (2003)

Detection of Magnesium-rich Ejecta in the Middle-aged Supernova Remnant N49B. *Sangwook Park, John P. Hughes, Patrick O. Slane, David N. Burrows, Jessica S. Warren, Gordon P. Garmire, & John A. Nousek.* 592, L41 (2003)

An X-Ray Image of the Composite Supernova Remnant G16.7+0.1. *David J. Helfand, Marcel A. Agueros, & E. V. Gotthelf.* 592, 941 (2003)

Thermal X-Ray Emission from Shocked Ejecta in Type Ia Supernova Remnants. Prospects for Explosion Mechanism Identification. *Carles Badenes, Eduardo Bravo, Kazimierz J. Borkowski, & Inmaculada Domínguez.* 593, 358 (2003)

The Scattered X-Ray Halo around Nova Cygni 1992: Testing a Model for Interstellar Dust. *B. T. Draine & Jonathan C. Tan.* 594, 347 (2003)

Untwisting the Tornado: X-Ray Imaging and Spectroscopy of G357.7−0.1. *B. M. Gaensler, J. K. J. Fogel, P. O. Slane, J. M. Miller, R. Wijnands, S. S. Eikenberry, & W. H. G. Lewin.* 594, L35 (2003)

A New Method to Resolve X-Ray Halos around Point Sources with *Chandra* Data and Its Application to Cygnus X-1. *Yangsen Yao, Shuang Nan Zhang, Xiaoling Zhang, & Yuxin Feng.* 594, L43 (2003)

Bondi Accretion and the Problem of the Missing Isolated Neutron Stars. *Rosalba Perna, Ramesh Narayan, George Rybicki, Luigi Stella, & Aldo Treves.* 594, 936 (2003)

Discovery of a New Pulsar Wind Nebula in the Large Magellanic Cloud. *B. M. Gaensler, S. P. Hendrick, S. P. Reynolds, & K. J. Borkowski.* 594, L111 (2003)

An *XMM-Newton* and *Chandra* Investigation of the Nuclear Accretion in the Sombrero Galaxy (NGC 4594). *S. Pellegrini, A. Baldi, G. Fabbiano, & D.-W. Kim.* 597, 175 (2003)

On the Determination of Ejecta Structure and Explosion Asymmetry from the X-Ray Knots of Cassiopeia A. *J. Martin Laming & Una Hwang.* 597, 347 (2003)

The Origin of the Galactic Center Nonthermal Radio Filaments: Young Stellar Clusters. *F. Yusef-Zadeh.* 598, 325 (2003)

Scattering by Interstellar Dust Grains. II. X-Rays. *B. T. Draine.* 598, 1026 (2003)

0103−72.6: A New Oxygen-rich Supernova Remnant in the Small Magellanic Cloud. *Sangwook Park, John P. Hughes, David N. Burrows, Patrick O. Slane, John A. Nousek, & Gordon P. Garmire.* 598, L95 (2003)

Chandra Observations of Low-Mass X-Ray Binaries and Diffuse Gas in the Early-Type Galaxies NGC 4365 and NGC 4382 (M85). *Gregory R. Sivakoff, Craig L. Sarazin, & Jimmy A. Irwin.* 599, 218 (2003)

X-Ray Emission from the Pre–Planetary Nebula Henize 3-1475. *Raghvendra Sahai, Joel H. Kastner, Adam Frank, Mark Morris, & Eric G. Blackman.* 599, L87 (2003)

X-RAYS: STARS

Chandra X-Ray Observation of the Orion Nebula Cluster. I. Detection, Identification, and Determination of X-Ray Luminosities. *E. Flaccomio, F. Damiani, G. Micela, S. Sciortino, F. R. Harnden, Jr., S. S. Murray, & S. J. Wolk.* 582, 382 (2003)

Chandra X-Ray Observation of the Orion Nebula Cluster. II. Relationship between X-Ray Activity Indicators and Stellar Parameters. *E. Flaccomio, F. Damiani, G. Micela, S. Sciortino, F. R. Harnden, Jr., S. S. Murray, & S. J. Wolk.* 582, 398 (2003)

Spectral Lines from Rotating Neutron Stars. *Feryal Ozel & Dimitrios Psaltis.* 582, L31 (2003)

X-Ray Jet Emission from the Black Hole X-Ray Binary XTE J1550−564 with *Chandra* in 2000. *John A. Tomsick, Stéphane Corbel, Rob Fender, Jon M. Miller, Jerome A. Orosz, Tasso Tzioumis, Rudy Wijnands, & Philip Kaaret.* 582, 933 (2003)

A Disk-Jet Interaction Model for the X-Ray Variability in Microquasars. *L. Nobili.* 582, 954 (2003)

Chandra, *Extreme Ultraviolet Explorer*, and Very Large Array Observations of the Active Binary System σ^2 Coronae Borealis. *Rachel A. Osten, Thomas R. Ayres, Alexander Brown, Jeffrey L. Linsky, & Anita Krishnamurthi.* 582, 1073 (2003)

SMC X-1 as an Intermediate-Stage Flaring X-Ray Pulsar. *Dae-Sik Moon, Stephen S. Eikenberry, & Ira M. Wasserman.* 582, L91 (2003)

Correlated Timing and Spectral Behavior of 4U 1705−44. *Jean-Francois Olive, Didier Barret, & Marek Gierlinski.* 583, 416 (2003)

Space Telescope Imaging Spectrograph Survey of Far-Ultraviolet Coronal Forbidden Lines in Late-Type Stars. *Thomas R. Ayres, Alexander Brown, Graham M. Harper, Rachel A. Osten, Jeffrey L. Linsky, Brian E. Wood, & Seth Redfield.* 583, 963 (2003)

A Compact Central Object in the Supernova Remnant Kesteven 79. *F. D. Seward, P. O. Slane, R. K. Smith, & M. Sun.* 584, 414 (2003)

X-Rays in the Orion Nebula Cluster: Constraints on the Origins of Magnetic Activity in Pre–Main-Sequence Stars. *Eric D. Feigelson, James A. Gaffney III, Gordon Garmire, Lynne A. Hillenbrand, & Leisa Townsley.* 584, 911 (2003)

Revised Analysis of the Supersoft X-Ray Phase, Helium Enrichment, and Turnoff Time in the 2000 Outburst of the Recurrent Nova CI Aquilae. *Izumi Hachisu, Mariko Kato, & Bradley E. Schaefer.* 584, 1008 (2003)

Three New Long-Period X-Ray Pulsars Discovered in the Small Magellanic Cloud. *D. J. Macomb, D. W. Fox, R. C. Lamb, & T. A. Prince.* 584, L79 (2003)

Chandra X-Ray Observations of the Spiral Galaxy M81. *Douglas A. Swartz, Kajal K. Ghosh, Michael L. McCollough, Thomas G. Pannuti, Allyn F. Tennant, & Kinwah Wu.* 144, 213 (2003)

X-Ray Spectroscopic Evidence for Intermediate-Mass Black Holes: Cool Accretion Disks in Two Ultraluminous X-Ray Sources. *J. M. Miller, G. Fabbiano, M. C. Miller, & A. C. Fabian.* 585, L37 (2003)

ROSAT X-Ray Spectral Properties of Nearby Young Associations: TW Hydrae, Tucana-Horologium, and the β Pictoris Moving Group. *Joel H. Kastner, Lara Crigger, Margaret Rich, & David A. Weintraub.* 585, 878 (2003)

The Quiescent Counterpart of the Soft Gamma-Ray Repeater SGR 0526−66. *S. R. Kulkarni, D. L. Kaplan, H. L. Marshall, D. A. Frail, T. Murakami, & D. Yonetoku.* 585, 948 (2003)

A *Far Ultraviolet Spectroscopic Explorer* Survey of Coronal Forbidden Lines in Late-Type Stars. *Seth Redfield, Thomas R. Ayres, Jeffrey L. Linsky, Thomas B. Ake, A. K. Dupree, Richard D. Robinson, & Peter R. Young.* 585, 993 (2003)

X-Ray Spectroscopy of η Carinae with *XMM-Newton*. *Maurice A. Leutenegger, Steven M. Kahn, & Gavin Ramsay.* 585, 1015 (2003)

X-Ray Emission from Multiphase Shock in the Large Magellanic Cloud Supernova Remnant N49. *Sangwook Park, David N. Burrows, Gordon P. Garmire, John A. Nousek, John P. Hughes, & Rosa Murphy Williams.* 586, 210 (2003)

X-Ray Temporal Properties of XTE J1650−500 during Outburst Decay. *E. Kalemci, J. A. Tomsick, R. E. Rothschild, K. Pottschmidt, S. Corbel, R. Wijnands, J. M. Miller, & P. Kaaret.* 586, 419 (2003)

High-Resolution *Chandra* Spectroscopy of τ Scorpii: A Narrow-Line X-Ray Spectrum from a Hot Star. *David H. Cohen, Geneviève E. de Messières, Joseph J. MacFarlane, Nathan A. Miller, Joseph P. Cassinelli, Stanley P. Owocki, & Duane A. Liedahl.* 586, 495 (2003)

Discovery of X-Ray Quasi-periodic Oscillations from an Ultraluminous X-Ray Source in M82: Evidence against Beaming. *Tod E. Strohmayer & Richard F. Mushotzky.* 586, L61 (2003)

Evidence of a Cyclotron Feature in the Spectrum of the Anomalous X-Ray Pulsar 1RXS J170849−400910. *Nanda Rea, Gian Luca Israel, Luigi Stella, Tim Oosterbroek, Sandro Mereghetti, Lorella Angelini, Sergio Campana, & Stefano Covino.* 586, L65 (2003)

An *XMM-Newton* Observation of 4U 1755−33 in Quiescence: Evidence for a Fossil X-Ray Jet. *Lorella Angelini & Nicholas E. White.* 586, L71 (2003)

The Structure of Stellar Coronae in Active Binary Systems. *J. Sanz-Forcada, N. S. Brickhouse, & A. K. Dupree.* 145, 147 (2003)

Fast X-Ray Transients and Their Connection to Gamma-Ray Bursts. *Vadim A. Arefiev, William C. Priedhorsky, & Konstantin N. Borozdin.* 586, 1238 (2003)

High-Frequency Quasi-Periodic Oscillations in the Black Holes X-Ray Transient XTE J1650−500. *Jeroen Homan, Marc Klein-Wolt, Sabrina Rossi, Jon M. Miller, Rudy Wijnands, Tomaso Belloni, Michiel van der Klis, & Walter H. G. Lewin.* 586, 1262 (2003)

The Evolution of LMC X-4 Flares: Evidence for Super Eddington Radiation Oosing through Inhomogeneous Polar Cap Accretion Flows? *Dae-Sik Moon, Stephen S. Eikenberry, & Ira M. Wasserman.* 586, 1280 (2003)

X-Ray Spectral Properties of Low-Mass X-Ray Binaries in Nearby Galaxies. *Jimmy A. Irwin, Alex E. Athey, & Joel N. Bregman.* 587, 356 (2003)

Chandra Observations of the Anomalous X-Ray Pulsar 4U 0142+61. *Sandeep K. Patel, Chryssa Kouveliotou, Peter M. Woods, Allyn F. Tennant, Martin C. Weisskopf, Mark H. Finger, Colleen Wilson-Hodge, Ersin Göğüş, Michiel van der Klis, & Tomaso Belloni.* 587, 367 (2003)

Coronal X-Ray Emission from an Intermediate-Age Brown Dwarf. *Yohko Tsuboi, Yoshitomo Maeda, Eric D. Feigelson, Gordon P. Garmire, George Chartas, Koji Mori, & Steven H. Pravdo.* 587, L51 (2003)

X-Ray Spectroscopy of the Accreting Millisecond Pulsar XTE J0929−314 in Outburst. *Adrienne M. Juett, Duncan K. Galloway, & Deepto Chakrabarty.* 587, 754 (2003)

Magnetohydrodynamic Simulations of Accretion to a Star in the "Propeller" Regime. *M. M. Romanova, O. D. Toropina, Yu. M. Toropin, & R. V. E. Lovelace.* 588, 400 (2003)

An *XMM-Newton* Observation during the 2000 Outburst of SAX J1808.4−3658. *Rudy Wijands.* 588, 425 (2003)

The Optical Counterpart of the Isolated Neutron Star RX J1605.3+3249. *D. L. Kaplan, S. R. Kulkarni, & M. H. van Kerkwijk.* 588, L33 (2003)

Transfer of Polarized Radiation in Strongly Magnetized Plasmas and Thermal Emission from Magnetars: Effect of Vacuum Polarization. *Dong Lai & Wynn C. G. Ho.* 588, 962 (2003)

A New Clue to the Transition Mechanism between Optical High and Low States of the Supersoft X-Ray Source RX J0513.9−6951, Implied from the Recurrent Nova CI Aquilae 2000 Outburst Model. *Izumi Hachisu & Mariko Kato.* 588, 1003 (2003)

Chandra Observations of the Young Open Cluster NGC 2516. *F. Damiani, E. Flaccomio, G. Micela, S. Sciortino, F. R. Harnden, Jr., S. S. Murray, S. J. Wolk, & R. D. Jeffries.* 588, 1009 (2003)

Extended Emission from Cygnus X-3 Detected with *Chandra*. *W. A. Heindl, J. A. Tomsick, R. Wijnands, & D. M. Smith.* 588, L97 (2003)

Search for a Point-Source Counterpart of the Unidentified Gamma-Ray Source TeV J2032+4130 in Cygnus. *R. Mukherjee, J. P. Halpern, E. V. Gotthelf, M. Eracleous, & N. Mirabal.* 589, 487 (2003)

Coupling between Periodic and Aperiodic Variability in SAX J1808.4−3658. *M. T. Menna, L. Burderi, L. Stella, N. Robba, & M. van der Klis.* 589, 503 (2003)

Chandra Observations of Associates of η Carinae. I. Luminosities. *Nancy Remage Evans, Frederick D. Seward, Miriam I. Krauss, Takashi Isobe, Joy Nichols, Eric M. Schlegel, & Scott J. Wolk.* 589, 509 (2003)

A Search for Pulsars in Quiescent Soft X-Ray Transients. I. *M. Burgay, L. Burderi, A. Possenti, N. D'Amico, R. N. Manchester, A. G. Lyne, F. Camilo, & S. Campana.* 589, 902 (2003)

Separating the X-Ray Emissions of UV Ceti A and B with *Chandra*. *Marc Audard, Manuel Güdel, & Stephen L. Skinner.* 589, 983 (2003)

The Infrared Counterpart to the Anomalous X-Ray Pulsar 1RXS J170849−400910. *G. L. Israel, S. Covino, R. Perna, R. Mignani, L. Stella, S. Campana, G. Marconi, G. Bono, S. Mereghetti, C. Motch, I. Negueruela, T. Oosterbroek, & L. Angelini.* 589, L93 (2003)

Radiation of Neutron Stars Produced by Superfluid Core. *Anatoly A. Svidzinsky.* 590, 386 (2003)

RX J0513.9−6951: The First Example of Accretion Wind Evolution, a Key Evolutionary Process to Type Ia Supernovae. *Izumi Hachisu & Mariko Kato.* 590, 445 (2003)

The Nearby Neutron Star RX J0720.4−3125 from Radio to X-Rays. *D. L. Kaplan, M. H. van Kerkwijk, H. L. Marshall, B. A. Jacoby, S. R. Kulkarni, & D. A. Frail.* 590, 1008 (2003)

The Complete Z-Diagram of LMC X-2. *A. P. Smale, J. Homan, & E. Kuulkers.* 590, 1035 (2003)

Bowen Flourescence from the Companion Star in X1822−371. *J. Casares, D. Steeghs, R. I. Hynes, P. A. Charles, & K. O'Brien.* 590, 1041 (2003)

Detection of Pulsed X-Ray Emission from *XMM-Newton* Observations of PSR J0538+2817. *K. E. McGowan, J. A. Kennea, S. Zane, F. A. Córdova, M. Cropper, C. Ho, T. Sasseen, & W. T. Vestrand.* 591, 380 (2003)

Chandra X-Ray Spectroscopic Imaging of Sagittarius A* and the Central Parsec of the Galaxy. *F. K. Baganoff, Y. Maeda, M. Morris, M. W. Bautz, W. N. Brandt, W. Cui, J. P. Doty, E. D. Feigelson, G. P. Garmire, S. H. Pravdo, G. R. Ricker, & L. K. Townsley.* 591, 891 (2003)

The Variable Jet of the Vela Pulsar. *G. G. Pavlov, M. A. Teter, O. Kargaltsev, & D. Sanwal.* 591, 1157 (2003)

Gamma-Ray Bursts as X-Ray Depth Gauges of the Universe. *P. Mészáros & M. J. Rees.* 591, L91 (2003)

Magnetic Flares on Asymptotic Giant Branch Stars. *Noam Soker & Joel H. Kastner.* 592, 498 (2003)

X-Ray Emission-Line Profile Modeling of O Stars: Fitting a Spherically Symmetric Analytic Wind-Shock Model to the *Chandra* Spectrum of ζ Puppis. *Roban H. Kramer, David H. Cohen, & Stanley P. Owocki.* 592, 532 (2003)

X-Ray Flares and Oscillations from the Black Hole Candidate X-Ray Transient XTE J1650−500 at Low Luminosity. *John A. Tomsick, Emrah Kalemci, Stephane Corbel, & Philip Kaaret.* 592, 1100 (2003)

Spectral and Temporal Behavior of the Black Hole Candidate XTE J1118+480 as Observed with *BeppoSAX*. *F. Frontera, L. Amati, A. A. Zdziarski, T. Belloni, S. Del Sordo, N. Masetti, M. Orlandini, & E. Palazzi.* 592, 1110 (2003)

Isolated Magnetar Spin-Down, Soft X-Ray Emission, and RX J1856.5−3754. *Kaya Mori & Malvin A. Ruderman.* 592, L75 (2003)

Comptonization in Super-Eddington Accretion Flow and Growth Timescale of Supermassive Black Holes. *Toshihiro Kawaguchi.* 593, 69 (2003)

The Disk-Jet Connection in Microquasars and Active Galactic Nuclei. *Mario Livio, J. E. Pringle, & A. R. King.* 593, 184 (2003)

Multiwavelength Spectrum of the Black Hole XTE J1118+480 in Quiescence. *Jeffrey E. McClintock, Ramesh Narayan, Michael R. Garcia, Jerome A. Orosz, Ronald A. Remillard, & Stephen S. Murray.* 593, 435 (2003)

Magnetic Inhibition of Accretion and Observability of Isolated Old Neutron Stars. *O. D. Toropina, M. M. Romanova, Yu. M. Toropin, & R. V. E. Lovelace.* 593, 472 (2003)

Chandra Observations of Magnetic White Dwarfs and Their Theoretical Implications. *Z. E. Musielak, M. Noble, J. G. Porter, & D. E. Winget.* 593, 481 (2003)

X-Ray Observations of the Compact Central Object in Supernova Remnant G347.3−0.5. *J. S. Lazendic, P. O. Slane, B. M. Gaensler, P. P. Plucinsky, J. P. Hughes, D. K. Galloway, & F. Crawford.* 593, L27 (2003)

10 MK Gas in M17 and the Rosette Nebula: X-Ray Flows in Galactic H II Regions. *Leisa K. Townsley, Eric D. Feigelson, Thierry Montmerle, Patrick S. Broos, You-Hua Chu, & Gordon P. Garmire.* 593, 874 (2003)

Constraints on Pulsar Magnetospheric and Wind Parameters for the Compact Nebulae of Vela and PSR B1706−44. *Ramotholo R. Sefako & Ocker C. de Jager.* 593, 1013 (2003)

Optical and X-Ray Properties of Cooling Neutron Stars. *Don A. Lloyd, Lars Hernquist, & Jeremy S. Heyl.* 593, 1024 (2003)

Search for the Optical Counterpart of the Vela Pulsar X-Ray Nebula. *R. P. Mignani, A. De Luca, O. Kargaltsev, G. G. Pavlov, S. Zaggia, P. A. Caraveo, & W. Becker.* 594, 419 (2003)

The Origin of Soft X-Rays in DQ Herculis. *K. Mukai, M. Still, & F. A. Ringwald.* 594, 428 (2003)

An *XMM-Newton* Observation of Nova LMC 1995: A Bright Supersoft X-Ray Source. *Marina Orio, Wouter Hartmann, Martin Still, & Jochen Greiner.* 594, 435 (2003)

From the Heart of the Ghoul: C and N Abundances in the Corona of Algol B. *Jeremy J. Drake.* 594, 496 (2003)

X-Ray Evidence of the Common Envelope Phase of V471 Tauri. *Jeremy J. Drake & Marek J. Sarna.* 594, L55 (2003)

Chandra X-Ray Observatory Observations of the Globular Cluster M28 and Its Millisecond Pulsar PSR 1821−24. *Werner Becker, Douglas A. Swartz, George G. Pavlov, Ronald F. Elsner, Jonathan Grindlay, Roberto Mignani, Allyn F. Tennant, Don Backer, Luigi Pulone, Vincenzo Testa, & Martin C. Weisskopf.* 594, 798 (2003)

Bondi Accretion and the Problem of the Missing Isolated Neutron Stars. *Rosalba Perna, Ramesh Narayan, George Rybicki, Luigi Stella, & Aldo Treves.* 594, 936 (2003)

A *Chandra* Observation of the Neutron Star X-Ray Transient and Eclipsing Binary MXB 1659−29 in Quiescence. *Rudy Wijnands, Mike Nowak, Jon M. Miller, Jeroen Homan, Stefanie Wachter, & Walter H. H. Lewin.* 594, 952 (2003)

Nature of Fault Planes in Solid Neutron Star Matter. *P. B. Jones.* 595, 342 (2003)

X-Ray Modeling of Very Young Early-Type Stars in the Orion Trapezium: Signatures of Magnetically Confined Plasmas and Evolutionary Implications. *N. S. Schulz, C. Canizares, D. Huenemoerder, & K. Tibbets.* 595, 365 (2003)

Possible Photometric Evidence of Ejection of Bullet-like Features in the Relativistic Jet Source SS 433. *Sandip K. Chakrabarti, S. Pal, A. Nandi, B. G. Anandarao, & Soumen Mondal.* 595, L45 (2003)

Three-Dimensional Simulations of Disk Accretion to an Inclined Dipole. I. Magnetospheric Flows at Different Θ. *M. M. Romanova, G. V. Ustyugova, A. V. Koldoba, J. V. Wick, & R. V. E. Lovelace.* 595, 1009 (2003)

Long-Term X-Ray Variability in GX 13+1: Energy-dependent Periodic Modulation. *Robin H. D. Corbet.* 595, 1086 (2003)

The Coronae of AR Lacertae. *David P. Huenemoerder, Claude R. Canizares, Jeremy J. Drake, & Jorge Sanz-Forcada.* 595, 1131 (2003)

ROSAT View of *Hipparcos* F Stars. *A. A. Suchkov, V. V. Makarov, & W. Voges.* 595, 1206 (2003)

Model for Relaxation Oscillations of a Luminous Accretion Disk in GRS 1915+105: Variable Inner Edge. *Ken-ya Watarai & Shin Mineshige.* 596, 421 (2003)

The 2001 April Burst Activation of SGR 1900+14: X-Ray Afterglow Emission. *M. Feroci, S. Mereghetti, P. Woods, C. Kouveliotou, E. Costa, D. D. Frederiks, S. V. Golenetskii, K. Hurley, E. Mazets, P. Soffitta, & M. Tavani.* 596, 470 (2003)

X-Ray Bursts from the Accreting Millisecond Pulsar XTE J1814−338. *Tod E. Strohmayer, Craig B. Markwardt, Jean H. Swank, & Jean in 't Zand.* 596, L67 (2003)

Chandra Observations of the Faintest Low-Mass X-Ray Binaries. *Colleen A. Wilson, Sandeep K. Patel, Chryssa Kouveliotou, Peter G. Jonker, Michiel van der Klis, Walter H. G. Lewin, Tomaso Belloni, & Mariano Méndez.* 596, 1220 (2003)

A Fallback Disk Model for Ultraluminous X-Ray Sources. *Xiang-Dong Li.* 596, L199 (2003)

The Galactic Population of Low- and Intermediate-Mass X-Ray Binaries. *Eric Pfahl, Saul Rappaport, & Philipp Podsiadlowski.* 597, 1036 (2003)

Chandra Detections of Two Quiescent Black Hole X-Ray Transients. *John A. Tomsick, Stéphane Corbel, Rob Fender, Jon M. Miller, Jerome A. Orosz, Michael P. Rupen, Tasso Tzioumis, Rudy Wijnands, & Philip Kaaret.* 597, L133 (2003)

A Deep *Chandra* X-Ray Observation of the Embedded Young Cluster in NGC 2024. *Stephen Skinner, Marc Gagné, & Emily Belzer.* 598, 375 (2003)

A Limit on the Number of Isolated Neutron Stars Detected in the *ROSAT* Bright Source Catalogue. *Robert E. Rutledge, Derek W. Fox, Milan Bogosavljevic, & Ashish Mahabal.* 598, 458 (2003)

A Limit Cycle Model for Long-Term Optical Variations of V Sagittae: The Second Example of Accretion Wind Evolution. *Izumi Hachisu & Mariko Kato.* 598, 527 (2003)

Chandra Observations of the Dwarf Nova WX Hydri in Quiescence. *Rosalba Perna, Jonathan McDowell, Kristen Menou, John Raymond, & Mikhail V. Medvedev.* 598, 545 (2003)

Buried Alive in the Coronal Graveyard. *Thomas R. Ayres, Alexander Brown, & Graham M. Harper.* 598, 610 (2003)

The *ROSAT* North Ecliptic Pole Survey: The Optical Identifications. *I. M. Gioia, J. P. Henry, C. R. Mullis, H. Böhringer, U. G. Briel, W. Voges, & J. P. Huchra.* 149, 29 (2003)

On the Origin of X-Ray Emission from Millisecond Pulsars in 47 Tucanae. *K. S. Cheng & Ronald E. Taam.* 598, 1207 (2003)

Modeling the Ne IX Triplet Spectral Region of Capella with the *Chandra* and *XMM-Newton* Gratings. *Jan-Uwe Ness, Nancy S. Brickhouse, Jeremy J. Drake, & David P. Huenemoerder.* 598, 1277 (2003)

Can Thin Disks Produce Anomalous X-Ray Pulsars? *K. Yavuz Eksi & M. Ali Alpar.* 599, 450 (2003)

The Glitches of the Anomalous X-Ray Pulsar 1RXS J170849.0−400910. *S. Dall'Osso, G. L. Israel, L. Stella, A. Possenti, & E. Perozzi.* 599, 485 (2003)

The ϵ Chamaeleontis Young Stellar Group and the Characterization of Sparse Stellar Clusters. *Eric D. Feigelson, Warrick A. Lawson, & Gordon P. Garmire.* 599, 1207 (2003)

Atmospheres and Spectra of Strongly Magnetized Neutron Stars. III. Partially Ionized Hydrogen Models. *Wynn C. G. Ho, Dong Lai, Alexander Y. Potekhin, & Gilles Chabrier.* 599, 1293 (2003)

NOTES

0004-637X(20031220)599:2:3;1-C